

April 24, 2012

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 1<sup>st</sup> Quarter 2012  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010 and amended on March 11, 2011.

This report covers activities conducted during the period of January 1, 2012 to March 31, 2012.

### **Construction Activities**

Construction activities during this reporting period included the delivery and management of three classifications of soil:

- Elevated, naturally occurring arsenic soils;
- Industrial soils; and
- Soil that is compliant with all RIDEM criteria.

This soil was used in conjunction with soil delivered to the Property during prior quarters to expand the final cap on the triangular-shaped section of the landfill proximate to the intersection of Mason and Park Avenues. This area is the closest portion of the work area to the local school bus stop.

During this reporting period, APE also arranged for the installation of an 8-foot high chain-link gate at the Park Avenue entrance to the Property.

124 Olney Avenue  
North Providence, RI 02911  
401.578.3889  
tim@toconnorconsulting.com  
www.toconnorconsulting.com

Photos of the Property are attached as Appendix A.

### **Shaping and Grading Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. Laboratory analysis data for the project at Long Wharf was submitted previously. The laboratory analysis data for the projects listed in the table are provided in Appendix B.

### **Complaints**

To our knowledge RIDEM received two complaints this reporting period.

The first complaint was made on February 28, 2012 and focused on dust being generated. RIDEM notified Site Restoration Technologies, LLC of the complaint who arranged for site work to be adjusted slightly so as to avoid dust generation.

The second complaint was an accusation that the landfill was accepting soils that were not within of restrictions of the BUD, as amended. RIDEM investigated this complaint and found it to be erroneous.

No complaints were received directly by APE during this reporting period.

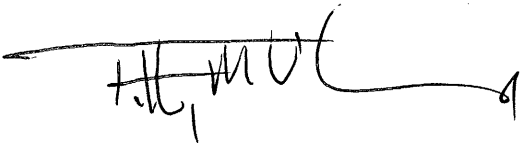
### **Schedule**

APE is striving to complete the capping of the Property in 2012. However, due to the state of the economy this will be very challenging. In addition, the new Sakonnet River Bridge completion date has been delayed again and the current weight restriction is creating a major obstacle to deliveries. .

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC

A handwritten signature in black ink, appearing to read 'Tim O'Connor', with a long horizontal line extending to the left and a small flourish at the end.

Timothy M. O'Connor, PE, LEED-AP  
Principal

# Appendix A – Photographs



**Photo 1 –Looking North from Park Avenue Entrance**



**Photo 2 – Erosion Control and Fencing along Northwest Propertyline**



**Photo 3 – Gate at Park Avenue Entrance**



**Photo 4 – Looking West at Southern Portion of Landfill**

# Appendix B – Analytical Data

(data provided on disc)

April 24, 2012

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Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
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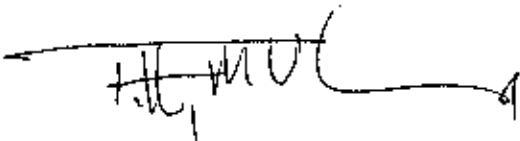
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Principal



# Appendix A – Photographs



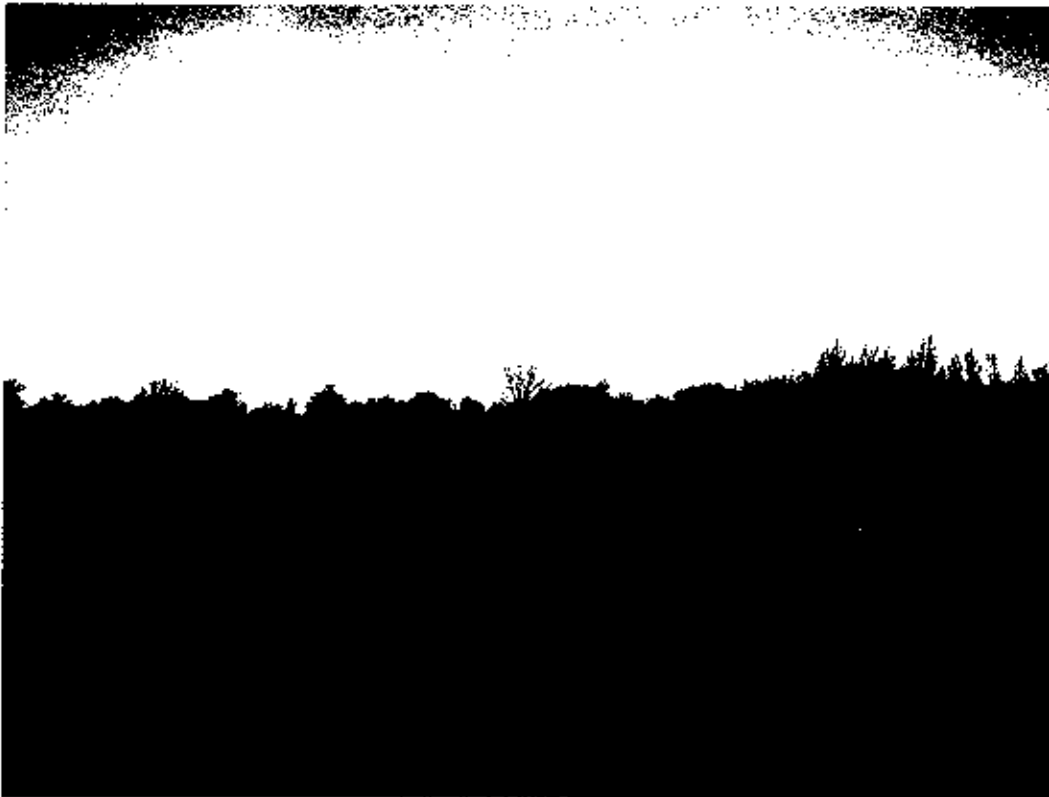
**Photo 1 – Looking North from Park Avenue Entrance**



**Photo 2 – Erosion Control and Fencing along Northwest Propertyline**



**Photo 3 – Gate at Park Avenue Entrance**



**Photo 4 -- Looking West at Southern Portion of Landfill**

# **Appendix B – Analytical Data**

(data provided on disc)

April 24, 2012

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report - 1<sup>st</sup> Quarter 2012  
Former Portsmouth Landfill

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Photos of the Property are attached as Appendix A.

### **Shaping and Grading Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. Laboratory analysis data for the project at Long Wharf was submitted previously. The laboratory analysis data for the projects listed in the table are provided in Appendix B.

### **Complaints**

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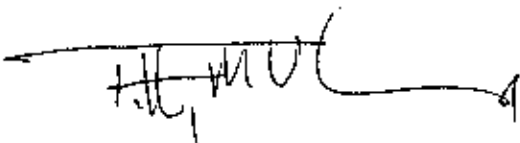
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Timothy M. O'Connor, PE, LEED-AP  
Principal

# Appendix A – Photographs



**Photo 1 – Looking North from Park Avenue Entrance**

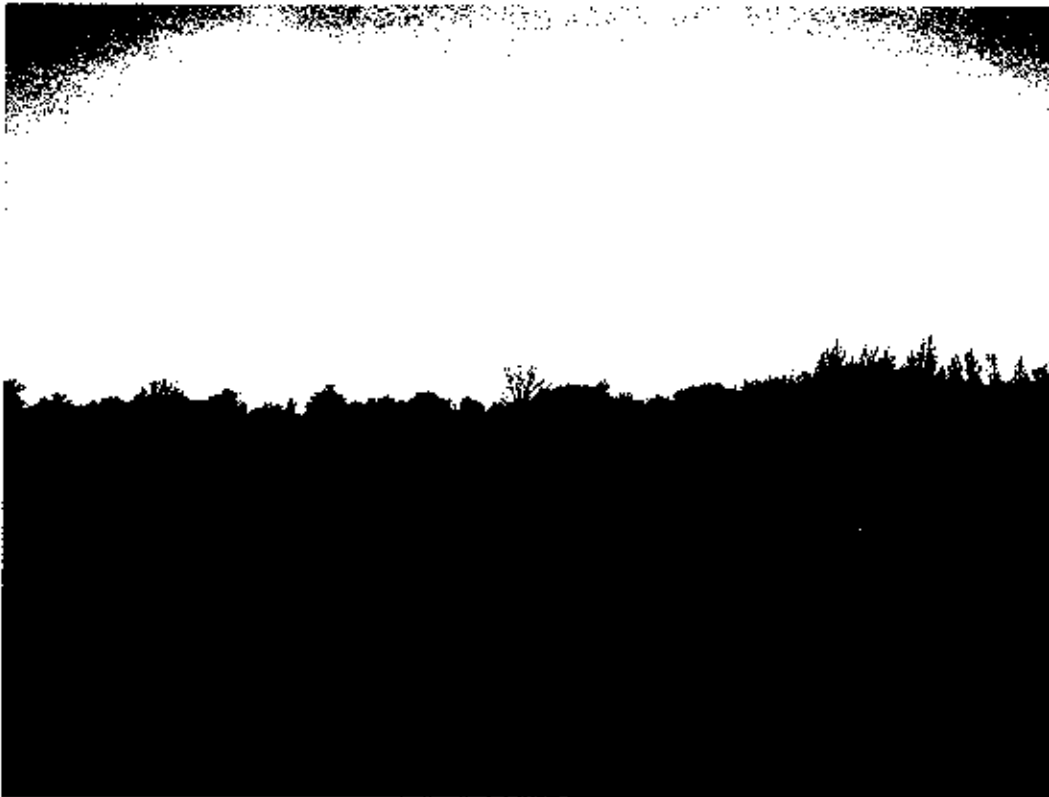


**Photo 2 – Erosion Control and Fencing along Northwest Propertyline**





**Photo 3 – Gate at Park Avenue Entrance**



**Photo 4 -- Looking West at Southern Portion of Landfill**

# **Appendix B – Analytical Data**

(data provided on disc)

August 6, 2012

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 2nd Quarter 2012  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010 and amended on March 11, 2011.

This report covers activities conducted during the period of April 1, 2012 to June 30, 2012.

**Construction Activities**

Construction activities during this reporting period included the delivery and management of three classifications of soil:

- Elevated, naturally occurring arsenic soils;
- Industrial soils; and
- Soil that is compliant with all RIDEM criteria.

This soil was used in conjunction with soil delivered to the Property during prior quarters to expand the final cap on the triangular-shaped section of the landfill proximate to the intersection of Mason and Park Avenues. This area is the closest portion of the work area to the local school bus stop.

Photos of the Property are attached as Appendix A.

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**Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. Laboratory analysis data for the project at Poppasquash Road was submitted previously. The laboratory analysis data for the projects listed in the table are provided in Appendix B.

**Complaints**

To our knowledge RIDEM received no complaints during this reporting period.

No complaints were received directly by APE during this reporting period.

**Schedule**

APE has recently submitted a request to extend the BUDA to September 2013.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC



Timothy M. O'Connor, PE, LEED-AR  
Principal

**Former Portsmouth Landfill  
Shaping and Grading Soils Accepted  
2nd Quarter 2012**

<b>Delivery Dates</b>	<b>Source</b>	<b>Consultant</b>	<b>Quantity (tons)</b>	<b>Soil Classification</b>
April 17 - May 8, 2012	159 Poppasquash Road, Bristol, RI	Alliance Environmental Group	60.00	elevated arsenic
June 18 - 28, 2012	Naval Station Newport, Bldg. 292, Newport, RI	Proulx Environmental, LLC	167.97	elevated arsenic
June 28, 2012	Naval Station Newport, Gate 2, Newport, RI	Beta Engineering	255.33	industrial
April 2, 2012	James Madison Morton Middle School, Fall River, MA	Lord Associates	808.79	industrial
June 14 - 28, 2012	764 Tiogue Avenue, Coventry, RI	EnviroTrac	957.67	residential
May 29 - June 7, 2012	Pell School	McPhail Associates	7,547.50	arsenic
		<b>Total</b>	<b>9,797.26</b>	

# Appendix A – Photographs



**Photo 1 – Looking North Near Park Avenue**



**Photo 2 – Erosion Control and Fencing along Northern Property Line**



**Photo 3 – Northwest Property Line**



**Photo 4 – Arsenic Soil Area/Southeast Portion of Property**



# Appendix B – Analytical Data

(data provided on disc)

October 18, 2012

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 3<sup>rd</sup> Quarter 2012  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and renewed on September 17, 2012.

This report covers activities conducted during the period of July 1, 2012 to September 30, 2012.

### **Construction Activities**

Construction activities during this reporting period included the delivery and management of three classifications of soil:

- Elevated Arsenic soils;
- Industrial soils; and
- Soil that is compliant with all RIDEM criteria.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. Laboratory analysis data for projects at 20 Fields Point Road in Providence, Navy Building 440, 764 Tiogue Avenue, Coventry and the Pell School in Newport were submitted previously. The laboratory analysis data for the new projects listed in the table are provided in Appendix B.

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**Complaints**

To our knowledge RIDEM received no complaints during this reporting period.

No complaints were received directly by APE during this reporting period.

**Schedule**

APE is relieved to see progress being made on the Sakonnet River Bridge and is striving to have the capping project completed within the next 12 months.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC

A handwritten signature in blue ink, appearing to read "T.M. O'Connor", with a long horizontal line extending to the left.

Timothy M. O'Connor, PE, LEED-AP  
Principal

**Former Portsmouth Landfill  
Shaping and Grading Soils Accepted  
3rd Quarter 2012**

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
July 2 - 18, 2012	764 Tiogue Avenue, Coventry, RI	EnviroTrac	402.72	residential
July 9 - 10, 2012 & September 24 - 26, 2012	Pell School	McPhail Associates	2,276.00	arsenic
July 10 - 12, 2012	Naval Station Newport, Bldg. 440, Portsmouth,	Alliance Environmental Group	737.86	residential
July 13 - 17, 2012	20 Fields Point Road	Alliance Environmental Group	233.26	industrial
July 24 - 31, 2012	Navy Bldgs A-9 & 1303, Portsmouth, RI	Alliance Environmental Group	238.11	residential
August 16, 2012	37 Wall Street, Bristol, RI	Alliance Environmental Group	40.50	industrial
September 4 - 11, 2012	Navy Bldg 990, Newport, RI	GZA GeoEnvironmental	1,416.46	arsenic
September 6, 2012	NUWC Deerfield Culvert, Newport, RI	Alliance Environmental Group	44.41	residential
September 24, 2012	291 Branch Avenue, Providence, RI	VHB	513.00	residential
<b>Total</b>			<b>5,902.32</b>	

# Appendix A – Photographs



**Photo 1 – Looking South Along Park Avenue**



**Photo 2 – Southern Portion of Site Looking West**



**Photo 3 – Northern Property Line**



**Photo 4 – Arsenic Soil Area/Southeast Portion of Property**

# Appendix B – Analytical Data

(data provided on disc)





## ANALYTICAL REPORT

Lab Number:	L1215988
Client:	Northeast Tank & Env Services Inc 1150 Turnpike Street Stoughton, MA 02072
ATTN:	Brian Sullivan
Phone:	(781) 297-0900
Project Name:	BRANCH AVE STOP & SHOP
Project Number:	Not Specified
Report Date:	09/14/12

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), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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



**Project Name:** BRANCH AVE STOP & SHOP  
**Project Number:** Not Specified

**Lab Number:** L1215988  
**Report Date:** 09/14/12

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1215988-01	SOIL DISPOSAL	PROV. RI	09/07/12 14:00

**Project Name:** BRANCH AVE STOP & SHOP  
**Project Number:** Not Specified

**Lab Number:** L1215988  
**Report Date:** 09/14/12

### Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

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

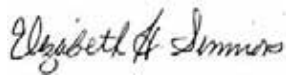
#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 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.

Please contact Client Services at 800-624-9220 with any questions.

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

Authorized Signature:

 Elizabeth Simmons

Title: Technical Director/Representative

Date: 09/14/12

# ORGANICS

# VOLATILES

**Project Name:** BRANCH AVE STOP & SHOP**Lab Number:** L1215988**Project Number:** Not Specified**Report Date:** 09/14/12**SAMPLE RESULTS**

**Lab ID:** L1215988-01  
**Client ID:** SOIL DISPOSAL  
**Sample Location:** PROV. RI  
**Matrix:** Soil  
**Analytical Method:** 1,8260C  
**Analytical Date:** 09/12/12 14:46  
**Analyst:** BN  
**Percent Solids:** 96%

**Date Collected:** 09/07/12 14:00  
**Date Received:** 09/07/12  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	270	--	1
1,1-Dichloroethane	ND		ug/kg	40	--	1
Chloroform	ND		ug/kg	40	--	1
Carbon tetrachloride	ND		ug/kg	27	--	1
1,2-Dichloropropane	ND		ug/kg	94	--	1
Dibromochloromethane	ND		ug/kg	27	--	1
1,1,2-Trichloroethane	ND		ug/kg	40	--	1
Tetrachloroethene	ND		ug/kg	27	--	1
Chlorobenzene	ND		ug/kg	27	--	1
Trichlorofluoromethane	ND		ug/kg	130	--	1
1,2-Dichloroethane	ND		ug/kg	27	--	1
1,1,1-Trichloroethane	ND		ug/kg	27	--	1
Bromodichloromethane	ND		ug/kg	27	--	1
trans-1,3-Dichloropropene	ND		ug/kg	27	--	1
cis-1,3-Dichloropropene	ND		ug/kg	27	--	1
1,1-Dichloropropene	ND		ug/kg	130	--	1
Bromoform	ND		ug/kg	110	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	27	--	1
Benzene	ND		ug/kg	27	--	1
Toluene	ND		ug/kg	40	--	1
Ethylbenzene	ND		ug/kg	27	--	1
Chloromethane	ND		ug/kg	130	--	1
Bromomethane	ND		ug/kg	54	--	1
Vinyl chloride	ND		ug/kg	54	--	1
Chloroethane	ND		ug/kg	54	--	1
1,1-Dichloroethene	ND		ug/kg	27	--	1
trans-1,2-Dichloroethene	ND		ug/kg	40	--	1
Trichloroethene	ND		ug/kg	27	--	1
1,2-Dichlorobenzene	ND		ug/kg	130	--	1
1,3-Dichlorobenzene	ND		ug/kg	130	--	1
1,4-Dichlorobenzene	ND		ug/kg	130	--	1

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 Sample Location: PROV. RI

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 Field Prep: Not Specified

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<b>Volatiles Organics by EPA 5035 High - Westborough Lab</b>						
Methyl tert butyl ether	ND		ug/kg	54	--	1
p/m-Xylene	ND		ug/kg	54	--	1
o-Xylene	ND		ug/kg	54	--	1
cis-1,2-Dichloroethene	ND		ug/kg	27	--	1
Dibromomethane	ND		ug/kg	270	--	1
1,4-Dichlorobutane	ND		ug/kg	270	--	1
1,2,3-Trichloropropane	ND		ug/kg	270	--	1
Styrene	ND		ug/kg	54	--	1
Dichlorodifluoromethane	ND		ug/kg	270	--	1
Acetone	ND		ug/kg	960	--	1
Carbon disulfide	ND		ug/kg	270	--	1
2-Butanone	ND		ug/kg	270	--	1
Vinyl acetate	ND		ug/kg	270	--	1
4-Methyl-2-pentanone	ND		ug/kg	270	--	1
2-Hexanone	ND		ug/kg	270	--	1
Ethyl methacrylate	ND		ug/kg	270	--	1
Acrylonitrile	ND		ug/kg	110	--	1
Bromochloromethane	ND		ug/kg	130	--	1
Tetrahydrofuran	ND		ug/kg	540	--	1
2,2-Dichloropropane	ND		ug/kg	130	--	1
1,2-Dibromoethane	ND		ug/kg	110	--	1
1,3-Dichloropropane	ND		ug/kg	130	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	27	--	1
Bromobenzene	ND		ug/kg	130	--	1
n-Butylbenzene	ND		ug/kg	27	--	1
sec-Butylbenzene	ND		ug/kg	27	--	1
tert-Butylbenzene	ND		ug/kg	130	--	1
o-Chlorotoluene	ND		ug/kg	130	--	1
p-Chlorotoluene	ND		ug/kg	130	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	130	--	1
Hexachlorobutadiene	ND		ug/kg	130	--	1
Isopropylbenzene	ND		ug/kg	27	--	1
p-Isopropyltoluene	ND		ug/kg	27	--	1
Naphthalene	ND		ug/kg	130	--	1
n-Propylbenzene	ND		ug/kg	27	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	130	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	130	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	130	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	130	--	1

**Project Name:** BRANCH AVE STOP & SHOP**Lab Number:** L1215988**Project Number:** Not Specified**Report Date:** 09/14/12**SAMPLE RESULTS**

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 Client ID: SOIL DISPOSAL  
 Sample Location: PROV. RI

Date Collected: 09/07/12 14:00  
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Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
trans-1,4-Dichloro-2-butene	ND		ug/kg	130	--	1
Ethyl ether	ND		ug/kg	130	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	96		70-130



**Project Name:** BRANCH AVE STOP & SHOP  
**Project Number:** Not Specified

**Lab Number:** L1215988  
**Report Date:** 09/14/12

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8260C  
Analytical Date: 09/12/12 08:29  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01 Batch: WG560466-3					
Methylene chloride	ND		ug/kg	500	--
1,1-Dichloroethane	ND		ug/kg	75	--
Chloroform	ND		ug/kg	75	--
Carbon tetrachloride	ND		ug/kg	50	--
1,2-Dichloropropane	ND		ug/kg	180	--
Dibromochloromethane	ND		ug/kg	50	--
1,1,2-Trichloroethane	ND		ug/kg	75	--
2-Chloroethylvinyl ether	ND		ug/kg	1000	--
Tetrachloroethene	ND		ug/kg	50	--
Chlorobenzene	ND		ug/kg	50	--
Trichlorofluoromethane	ND		ug/kg	250	--
1,2-Dichloroethane	ND		ug/kg	50	--
1,1,1-Trichloroethane	ND		ug/kg	50	--
Bromodichloromethane	ND		ug/kg	50	--
trans-1,3-Dichloropropene	ND		ug/kg	50	--
cis-1,3-Dichloropropene	ND		ug/kg	50	--
1,1-Dichloropropene	ND		ug/kg	250	--
Bromoform	ND		ug/kg	200	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	50	--
Benzene	ND		ug/kg	50	--
Toluene	ND		ug/kg	75	--
Ethylbenzene	ND		ug/kg	50	--
Chloromethane	ND		ug/kg	250	--
Bromomethane	ND		ug/kg	100	--
Vinyl chloride	ND		ug/kg	100	--
Chloroethane	ND		ug/kg	100	--
1,1-Dichloroethene	ND		ug/kg	50	--
trans-1,2-Dichloroethene	ND		ug/kg	75	--
Trichloroethene	ND		ug/kg	50	--
1,2-Dichlorobenzene	ND		ug/kg	250	--
1,3-Dichlorobenzene	ND		ug/kg	250	--

**Project Name:** BRANCH AVE STOP & SHOP  
**Project Number:** Not Specified

**Lab Number:** L1215988  
**Report Date:** 09/14/12

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8260C  
Analytical Date: 09/12/12 08:29  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01 Batch: WG560466-3					
1,4-Dichlorobenzene	ND		ug/kg	250	--
Methyl tert butyl ether	ND		ug/kg	100	--
p/m-Xylene	ND		ug/kg	100	--
o-Xylene	ND		ug/kg	100	--
cis-1,2-Dichloroethene	ND		ug/kg	50	--
Dibromomethane	ND		ug/kg	500	--
1,4-Dichlorobutane	ND		ug/kg	500	--
1,2,3-Trichloropropane	ND		ug/kg	500	--
Styrene	ND		ug/kg	100	--
Dichlorodifluoromethane	ND		ug/kg	500	--
Acetone	ND		ug/kg	1800	--
Carbon disulfide	ND		ug/kg	500	--
2-Butanone	ND		ug/kg	500	--
Vinyl acetate	ND		ug/kg	500	--
4-Methyl-2-pentanone	ND		ug/kg	500	--
2-Hexanone	ND		ug/kg	500	--
Ethyl methacrylate	ND		ug/kg	500	--
Acrolein	ND		ug/kg	1200	--
Acrylonitrile	ND		ug/kg	200	--
Bromochloromethane	ND		ug/kg	250	--
Tetrahydrofuran	ND		ug/kg	1000	--
2,2-Dichloropropane	ND		ug/kg	250	--
1,2-Dibromoethane	ND		ug/kg	200	--
1,3-Dichloropropane	ND		ug/kg	250	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	50	--
Bromobenzene	ND		ug/kg	250	--
n-Butylbenzene	ND		ug/kg	50	--
sec-Butylbenzene	ND		ug/kg	50	--
tert-Butylbenzene	ND		ug/kg	250	--
1,3,5-Trichlorobenzene	ND		ug/kg	200	--
o-Chlorotoluene	ND		ug/kg	250	--

Project Name: BRANCH AVE STOP &amp; SHOP

Lab Number: L1215988

Project Number: Not Specified

Report Date: 09/14/12

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C  
 Analytical Date: 09/12/12 08:29  
 Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01 Batch: WG560466-3					
p-Chlorotoluene	ND		ug/kg	250	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	250	--
Hexachlorobutadiene	ND		ug/kg	250	--
Isopropylbenzene	ND		ug/kg	50	--
p-Isopropyltoluene	ND		ug/kg	50	--
Naphthalene	ND		ug/kg	250	--
n-Propylbenzene	ND		ug/kg	50	--
1,2,3-Trichlorobenzene	ND		ug/kg	250	--
1,2,4-Trichlorobenzene	ND		ug/kg	250	--
1,3,5-Trimethylbenzene	ND		ug/kg	250	--
1,2,4-Trimethylbenzene	ND		ug/kg	250	--
trans-1,4-Dichloro-2-butene	ND		ug/kg	250	--
Halothane	ND		ug/kg	2000	--
Ethyl ether	ND		ug/kg	250	--
Methyl Acetate	ND		ug/kg	1000	--
Ethyl Acetate	ND		ug/kg	1000	--
Isopropyl Ether	ND		ug/kg	200	--
Cyclohexane	ND		ug/kg	1000	--
Tert-Butyl Alcohol	ND		ug/kg	5000	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	200	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	200	--
1,4-Dioxane	ND		ug/kg	5000	--
Methyl cyclohexane	ND		ug/kg	200	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	1000	--
p-Diethylbenzene	ND		ug/kg	200	--
4-Ethyltoluene	ND		ug/kg	200	--
1,2,4,5-Tetramethylbenzene	ND		ug/kg	200	--

**Project Name:** BRANCH AVE STOP & SHOP**Lab Number:** L1215988**Project Number:** Not Specified**Report Date:** 09/14/12

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8260C  
 Analytical Date: 09/12/12 08:29  
 Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01 Batch: WG560466-3					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	98		70-130

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BRANCH AVE STOP & SHOP

**Lab Number:** L1215988

**Project Number:** Not Specified

**Report Date:** 09/14/12

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG560466-1 WG560466-2								
Methylene chloride	105		99		70-130	6		30
1,1-Dichloroethane	99		99		70-130	0		30
Chloroform	110		107		70-130	3		30
Carbon tetrachloride	97		98		70-130	1		30
1,2-Dichloropropane	117		115		70-130	2		30
Dibromochloromethane	111		108		70-130	3		30
1,1,2-Trichloroethane	116		112		70-130	4		30
2-Chloroethylvinyl ether	117		115		70-130	2		30
Tetrachloroethene	98		97		70-130	1		30
Chlorobenzene	110		106		70-130	4		30
Trichlorofluoromethane	86		88		70-139	2		30
1,2-Dichloroethane	111		108		70-130	3		30
1,1,1-Trichloroethane	98		97		70-130	1		30
Bromodichloromethane	116		116		70-130	0		30
trans-1,3-Dichloropropene	113		110		70-130	3		30
cis-1,3-Dichloropropene	122		120		70-130	2		30
1,1-Dichloropropene	97		96		70-130	1		30
Bromoform	104		101		70-130	3		30
1,1,2,2-Tetrachloroethane	109		106		70-130	3		30
Benzene	102		102		70-130	0		30
Toluene	102		100		70-130	2		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BRANCH AVE STOP & SHOP

**Lab Number:** L1215988

**Project Number:** Not Specified

**Report Date:** 09/14/12

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG560466-1 WG560466-2								
Ethylbenzene	110		107		70-130	3		30
Chloromethane	82		82		52-130	0		30
Bromomethane	102		94		57-147	8		30
Vinyl chloride	81		82		67-130	1		30
Chloroethane	89		90		50-151	1		30
1,1-Dichloroethene	84		83		65-135	1		30
trans-1,2-Dichloroethene	91		90		70-130	1		30
Trichloroethene	106		106		70-130	0		30
1,2-Dichlorobenzene	107		106		70-130	1		30
1,3-Dichlorobenzene	108		104		70-130	4		30
1,4-Dichlorobenzene	107		103		70-130	4		30
Methyl tert butyl ether	103		100		66-130	3		30
p/m-Xylene	111		108		70-130	3		30
o-Xylene	114		111		70-130	3		30
cis-1,2-Dichloroethene	102		101		70-130	1		30
Dibromomethane	118		116		70-130	2		30
1,4-Dichlorobutane	114		110		70-130	4		30
1,2,3-Trichloropropane	99		94		68-130	5		30
Styrene	117		114		70-130	3		30
Dichlorodifluoromethane	84		86		30-146	2		30
Acetone	119		108		54-140	10		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BRANCH AVE STOP & SHOP

**Lab Number:** L1215988

**Project Number:** Not Specified

**Report Date:** 09/14/12

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG560466-1 WG560466-2								
Carbon disulfide	79		80		59-130	1		30
2-Butanone	126		113		70-130	11		30
Vinyl acetate	116		113		70-130	3		30
4-Methyl-2-pentanone	121		118		70-130	3		30
2-Hexanone	121		114		70-130	6		30
Ethyl methacrylate	102		100		70-130	2		30
Acrolein	86		81			6		30
Acrylonitrile	118		114		70-130	3		30
Bromochloromethane	108		108		70-130	0		30
Tetrahydrofuran	120		115		66-130	4		30
2,2-Dichloropropane	98		98		70-130	0		30
1,2-Dibromoethane	108		105		70-130	3		30
1,3-Dichloropropane	112		109		69-130	3		30
1,1,1,2-Tetrachloroethane	111		108		70-130	3		30
Bromobenzene	105		102		70-130	3		30
n-Butylbenzene	108		107		70-130	1		30
sec-Butylbenzene	107		104		70-130	3		30
tert-Butylbenzene	107		103		70-130	4		30
o-Chlorotoluene	108		104		70-130	4		30
p-Chlorotoluene	109		105		70-130	4		30
1,2-Dibromo-3-chloropropane	100		114		68-130	13		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BRANCH AVE STOP & SHOP

**Lab Number:** L1215988

**Project Number:** Not Specified

**Report Date:** 09/14/12

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG560466-1 WG560466-2								
Hexachlorobutadiene	99		100		67-130	1		30
Isopropylbenzene	106		102		70-130	4		30
p-Isopropyltoluene	108		105		70-130	3		30
Naphthalene	107		103		70-130	4		30
n-Propylbenzene	107		104		70-130	3		30
1,2,3-Trichlorobenzene	104		101		70-130	3		30
1,2,4-Trichlorobenzene	106		101		70-130	5		30
1,3,5-Trimethylbenzene	108		106		70-130	2		30
1,2,4-Trimethylbenzene	110		107		70-130	3		30
trans-1,4-Dichloro-2-butene	115		106		70-130	8		30
Halothane	107		108		70-130	1		20
Ethyl ether	94		90		67-130	4		30
Methyl Acetate	105		102		65-130	3		30
Ethyl Acetate	118		112		70-130	5		30
Cyclohexane	104		105		70-130	1		30
tert-Butyl Alcohol	116		114		70-130	2		30
Ethyl-Tert-Butyl-Ether	116		114		70-130	2		30
Tertiary-Amyl Methyl Ether	119		116		70-130	3		30
1,4-Dioxane	128		126		65-136	2		30
Methyl cyclohexane	105		105		70-130	0		30
1,1,2-Trichloro-1,2,2-Trifluoroethane	101		102		70-130	1		30



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BRANCH AVE STOP & SHOP

**Lab Number:** L1215988

**Project Number:** Not Specified

**Report Date:** 09/14/12

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG560466-1 WG560466-2								
1,4-Diethylbenzene	108		107		70-130	1		30
4-Ethyltoluene	109		106		70-130	3		30
1,2,4,5-Tetramethylbenzene	110		108		70-130	2		30

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
1,2-Dichloroethane-d4	95		96		70-130
Toluene-d8	95		95		70-130
4-Bromofluorobenzene	101		99		70-130
Dibromofluoromethane	98		99		70-130

# SEMIVOLATILES

**Project Name:** BRANCH AVE STOP & SHOP**Lab Number:** L1215988**Project Number:** Not Specified**Report Date:** 09/14/12**SAMPLE RESULTS**

**Lab ID:** L1215988-01  
**Client ID:** SOIL DISPOSAL  
**Sample Location:** PROV. RI  
**Matrix:** Soil  
**Analytical Method:** 1,8270D  
**Analytical Date:** 09/10/12 23:02  
**Analyst:** RC  
**Percent Solids:** 96%

**Date Collected:** 09/07/12 14:00  
**Date Received:** 09/07/12  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3546  
**Extraction Date:** 09/08/12 00:39

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	270	--	1
Benzidine	ND		ug/kg	1200	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	340	--	1
Hexachlorobenzene	ND		ug/kg	200	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	340	--	1
2-Chloronaphthalene	ND		ug/kg	340	--	1
1,2-Dichlorobenzene	ND		ug/kg	340	--	1
1,3-Dichlorobenzene	ND		ug/kg	340	--	1
1,4-Dichlorobenzene	ND		ug/kg	340	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	340	--	1
2,4-Dinitrotoluene	ND		ug/kg	340	--	1
2,6-Dinitrotoluene	ND		ug/kg	340	--	1
Azobenzene	ND		ug/kg	340	--	1
Fluoranthene	ND		ug/kg	200	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	340	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	340	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	410	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	340	--	1
Hexachlorobutadiene	ND		ug/kg	340	--	1
Hexachlorocyclopentadiene	ND		ug/kg	960	--	1
Hexachloroethane	ND		ug/kg	270	--	1
Isophorone	ND		ug/kg	340	--	1
Naphthalene	ND		ug/kg	340	--	1
Nitrobenzene	ND		ug/kg	340	--	1
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/kg	270	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	340	--	1
Butyl benzyl phthalate	ND		ug/kg	340	--	1
Di-n-butylphthalate	ND		ug/kg	340	--	1
Di-n-octylphthalate	ND		ug/kg	340	--	1
Diethyl phthalate	ND		ug/kg	340	--	1
Dimethyl phthalate	ND		ug/kg	340	--	1

**Project Name:** BRANCH AVE STOP & SHOP**Lab Number:** L1215988**Project Number:** Not Specified**Report Date:** 09/14/12**SAMPLE RESULTS**

Lab ID: L1215988-01  
 Client ID: SOIL DISPOSAL  
 Sample Location: PROV. RI

Date Collected: 09/07/12 14:00  
 Date Received: 09/07/12  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
Benzo(a)anthracene	ND		ug/kg	200	--	1
Benzo(a)pyrene	ND		ug/kg	270	--	1
Benzo(b)fluoranthene	ND		ug/kg	200	--	1
Benzo(k)fluoranthene	ND		ug/kg	200	--	1
Chrysene	ND		ug/kg	200	--	1
Acenaphthylene	ND		ug/kg	270	--	1
Anthracene	ND		ug/kg	200	--	1
Benzo(ghi)perylene	ND		ug/kg	270	--	1
Fluorene	ND		ug/kg	340	--	1
Phenanthrene	ND		ug/kg	200	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	270	--	1
Pyrene	ND		ug/kg	200	--	1
Aniline	ND		ug/kg	410	--	1
4-Chloroaniline	ND		ug/kg	340	--	1
1-Methylnaphthalene	ND		ug/kg	340	--	1
2-Nitroaniline	ND		ug/kg	340	--	1
3-Nitroaniline	ND		ug/kg	340	--	1
4-Nitroaniline	ND		ug/kg	340	--	1
Dibenzofuran	ND		ug/kg	340	--	1
2-Methylnaphthalene	ND		ug/kg	410	--	1
n-Nitrosodimethylamine	ND		ug/kg	690	--	1
2,4,6-Trichlorophenol	ND		ug/kg	200	--	1
P-Chloro-M-Cresol	ND		ug/kg	340	--	1
2-Chlorophenol	ND		ug/kg	340	--	1
2,4-Dichlorophenol	ND		ug/kg	340	--	1
2,4-Dimethylphenol	ND		ug/kg	340	--	1
2-Nitrophenol	ND		ug/kg	760	--	1
4-Nitrophenol	ND		ug/kg	480	--	1
2,4-Dinitrophenol	ND		ug/kg	1600	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	890	--	1
Pentachlorophenol	ND		ug/kg	270	--	1
Phenol	ND		ug/kg	340	--	1
2-Methylphenol	ND		ug/kg	340	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	480	--	1
2,4,5-Trichlorophenol	ND		ug/kg	340	--	1
Benzoic Acid	ND		ug/kg	1100	--	1
Benzyl Alcohol	ND		ug/kg	340	--	1
Carbazole	ND		ug/kg	340	--	1

**Project Name:** BRANCH AVE STOP & SHOP**Lab Number:** L1215988**Project Number:** Not Specified**Report Date:** 09/14/12**SAMPLE RESULTS**

Lab ID: L1215988-01

Date Collected: 09/07/12 14:00

Client ID: SOIL DISPOSAL

Date Received: 09/07/12

Sample Location: PROV. RI

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## Semivolatile Organics by GC/MS - Westborough Lab

Pyridine	ND		ug/kg	1400	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	101		25-120
Phenol-d6	100		10-120
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	85		30-120
2,4,6-Tribromophenol	114		0-136
4-Terphenyl-d14	98		18-120

**Project Name:** BRANCH AVE STOP & SHOP  
**Project Number:** Not Specified

**Lab Number:** L1215988  
**Report Date:** 09/14/12

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8270D  
Analytical Date: 09/09/12 19:01  
Analyst: RC

Extraction Method: EPA 3546  
Extraction Date: 09/08/12 00:39

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG559489-1					
Acenaphthene	ND		ug/kg	130	--
Benzidine	ND		ug/kg	560	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	100	--
Bis(2-chloroethyl)ether	ND		ug/kg	160	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	100	--
4-Chlorophenyl phenyl ether	ND		ug/kg	160	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	160	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachlorocyclopentadiene	ND		ug/kg	460	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	160	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	160	--
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/kg	130	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--



**Project Name:** BRANCH AVE STOP & SHOP  
**Project Number:** Not Specified

**Lab Number:** L1215988  
**Report Date:** 09/14/12

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8270D  
Analytical Date: 09/09/12 19:01  
Analyst: RC

Extraction Method: EPA 3546  
Extraction Date: 09/08/12 00:39

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG559489-1					
Benzo(a)anthracene	ND		ug/kg	100	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	100	--
Benzo(k)fluoranthene	ND		ug/kg	100	--
Chrysene	ND		ug/kg	100	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	100	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	100	--
Dibenzo(a,h)anthracene	ND		ug/kg	100	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	100	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
1-Methylnaphthalene	ND		ug/kg	160	--
2-Nitroaniline	ND		ug/kg	160	--
3-Nitroaniline	ND		ug/kg	160	--
4-Nitroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
n-Nitrosodimethylamine	ND		ug/kg	330	--
2,4,6-Trichlorophenol	ND		ug/kg	100	--
P-Chloro-M-Cresol	ND		ug/kg	160	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	160	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	360	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	800	--
4,6-Dinitro-o-cresol	ND		ug/kg	430	--

**Project Name:** BRANCH AVE STOP & SHOP**Lab Number:** L1215988**Project Number:** Not Specified**Report Date:** 09/14/12

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 1,8270D  
 Analytical Date: 09/09/12 19:01  
 Analyst: RC

Extraction Method: EPA 3546  
 Extraction Date: 09/08/12 00:39

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG559489-1					
Pentachlorophenol	ND		ug/kg	130	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Benzoic Acid	ND		ug/kg	530	--
Benzyl Alcohol	ND		ug/kg	160	--
Carbazole	ND		ug/kg	160	--
Pyridine	ND		ug/kg	660	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	59		25-120
Phenol-d6	60		10-120
Nitrobenzene-d5	56		23-120
2-Fluorobiphenyl	52		30-120
2,4,6-Tribromophenol	58		0-136
4-Terphenyl-d14	56		18-120



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BRANCH AVE STOP & SHOP

**Lab Number:** L1215988

**Project Number:** Not Specified

**Report Date:** 09/14/12

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG559489-2 WG559489-3								
Acenaphthene	64		67		31-137	5		50
Benzidine	40		47		10-66	16		50
1,2,4-Trichlorobenzene	68		71		38-107	4		50
Hexachlorobenzene	64		73		40-140	13		50
Bis(2-chloroethyl)ether	70		74		40-140	6		50
2-Chloronaphthalene	68		76		40-140	11		50
1,2-Dichlorobenzene	72		74		40-140	3		50
1,3-Dichlorobenzene	72		73		40-140	1		50
1,4-Dichlorobenzene	71		74		28-104	4		50
3,3'-Dichlorobenzidine	65		70		40-140	7		50
2,4-Dinitrotoluene	68		76		28-89	11		50
2,6-Dinitrotoluene	72		84		40-140	15		50
Azobenzene	63		67		40-140	6		50
Fluoranthene	64		70		40-140	9		50
4-Chlorophenyl phenyl ether	64		68		40-140	6		50
4-Bromophenyl phenyl ether	67		73		40-140	9		50
Bis(2-chloroisopropyl)ether	66		73		40-140	10		50
Bis(2-chloroethoxy)methane	72		79		40-117	9		50
Hexachlorobutadiene	66		68		40-140	3		50
Hexachlorocyclopentadiene	33	Q	33	Q	40-140	0		50
Hexachloroethane	70		72		40-140	3		50

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BRANCH AVE STOP & SHOP

**Lab Number:** L1215988

**Project Number:** Not Specified

**Report Date:** 09/14/12

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG559489-2 WG559489-3								
Isophorone	71		81		40-140	13		50
Naphthalene	67		71		40-140	6		50
Nitrobenzene	65		68		40-140	5		50
NitrosoDiPhenylAmine(NDPA)/DPA	67		72		36-157	7		50
Bis(2-Ethylhexyl)phthalate	73		83		40-140	13		50
Butyl benzyl phthalate	64		73		40-140	13		50
Di-n-butylphthalate	68		71		40-140	4		50
Di-n-octylphthalate	81		85		40-140	5		50
Diethyl phthalate	66		71		40-140	7		50
Dimethyl phthalate	66		68		40-140	3		50
Benzo(a)anthracene	70		73		40-140	4		50
Benzo(a)pyrene	75		77		40-140	3		50
Benzo(b)fluoranthene	73		77		40-140	5		50
Benzo(k)fluoranthene	71		74		40-140	4		50
Chrysene	68		69		40-140	1		50
Acenaphthylene	69		80		40-140	15		50
Anthracene	68		69		40-140	1		50
Benzo(ghi)perylene	75		74		40-140	1		50
Fluorene	65		70		40-140	7		50
Phenanthrene	64		66		40-140	3		50
Dibenzo(a,h)anthracene	79		79		40-140	0		50

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BRANCH AVE STOP & SHOP

**Lab Number:** L1215988

**Project Number:** Not Specified

**Report Date:** 09/14/12

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG559489-2 WG559489-3								
Indeno(1,2,3-cd)Pyrene	79		79		40-140	0		50
Pyrene	62		68		35-142	9		50
Aniline	58		64		40-140	10		50
4-Chloroaniline	50		57		40-140	13		50
1-Methylnaphthalene	68		75		26-130	10		50
2-Nitroaniline	72		85		47-134	17		50
3-Nitroaniline	47		54		26-129	14		50
4-Nitroaniline	59		68		41-125	14		50
Dibenzofuran	65		69		40-140	6		50
2-Methylnaphthalene	67		74		40-140	10		50
n-Nitrosodimethylamine	62		66		22-100	6		50
2,4,6-Trichlorophenol	74		83		30-130	11		50
P-Chloro-M-Cresol	72		81		26-103	12		50
2-Chlorophenol	77		85		25-102	10		50
2,4-Dichlorophenol	72		77		30-130	7		50
2,4-Dimethylphenol	77		89		30-130	14		50
2-Nitrophenol	81		91		30-130	12		50
4-Nitrophenol	64		76		11-114	17		50
2,4-Dinitrophenol	40		55		4-130	32		50
4,6-Dinitro-o-cresol	60		68		10-130	13		50
Pentachlorophenol	68		73		17-109	7		50

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** BRANCH AVE STOP & SHOP  
**Project Number:** Not Specified

**Lab Number:** L1215988  
**Report Date:** 09/14/12

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG559489-2 WG559489-3								
Phenol	76		85		26-90	11		50
2-Methylphenol	78		89		30-130	13		50
3-Methylphenol/4-Methylphenol	82		92		30-130	11		50
2,4,5-Trichlorophenol	74		86		30-130	15		50
Benzoic Acid	4	Q	13		10-110	106	Q	50
Benzyl Alcohol	72		80		40-140	11		50
Carbazole	65		69		54-128	6		50
Pyridine	50		49		10-93	2		50

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
2-Fluorophenol	79		84		25-120
Phenol-d6	82		88		10-120
Nitrobenzene-d5	73		82		23-120
2-Fluorobiphenyl	69		76		30-120
2,4,6-Tribromophenol	78		76		0-136
4-Terphenyl-d14	63		70		18-120

# **PETROLEUM HYDROCARBONS**

**Project Name:** BRANCH AVE STOP & SHOP**Lab Number:** L1215988**Project Number:** Not Specified**Report Date:** 09/14/12**SAMPLE RESULTS**

**Lab ID:** L1215988-01  
**Client ID:** SOIL DISPOSAL  
**Sample Location:** PROV. RI  
**Matrix:** Soil  
**Analytical Method:** 1,8015C(M)  
**Analytical Date:** 09/11/12 18:50  
**Analyst:** MW  
**Percent Solids:** 96%

**Date Collected:** 09/07/12 14:00  
**Date Received:** 09/07/12  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3546  
**Extraction Date:** 09/10/12 13:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	ND		ug/kg	34100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	68		40-140

**Project Name:** BRANCH AVE STOP & SHOP**Lab Number:** L1215988**Project Number:** Not Specified**Report Date:** 09/14/12**Method Blank Analysis  
Batch Quality Control**Analytical Method: 1,8015C(M)  
Analytical Date: 09/11/12 14:08  
Analyst: MWExtraction Method: EPA 3546  
Extraction Date: 09/10/12 13:41

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01 Batch: WG559720-1					
TPH	ND		ug/kg	32200	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	88		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** BRANCH AVE STOP & SHOP  
**Project Number:** Not Specified

**Lab Number:** L1215988  
**Report Date:** 09/14/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01 Batch: WG559720-2								
TPH	79		-		40-140	-		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
o-Terphenyl	81				40-140



**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** BRANCH AVE STOP & SHOP

**Project Number:** Not Specified

**Lab Number:** L1215988

**Report Date:** 09/14/12

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01 QC Batch ID: WG559720-3 QC Sample: L1215974-15 Client ID: DUP Sample						
TPH	ND	ND	ug/kg	NC		40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	64		59		40-140



## METALS

**Project Name:** BRANCH AVE STOP & SHOP  
**Project Number:** Not Specified

**Lab Number:** L1215988  
**Report Date:** 09/14/12

**SAMPLE RESULTS**

Lab ID: L1215988-01  
 Client ID: SOIL DISPOSAL  
 Sample Location: PROV. RI  
 Matrix: Soil  
 Percent Solids: 96%

Date Collected: 09/07/12 14:00  
 Date Received: 09/07/12  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Westborough Lab</b>											
Antimony, Total	ND		mg/kg	2.0	--	1	09/14/12 07:51	09/14/12 13:53	EPA 3050B	1,6010C	MG
Arsenic, Total	3.4		mg/kg	0.40	--	1	09/14/12 07:51	09/14/12 13:53	EPA 3050B	1,6010C	MG
Beryllium, Total	0.31		mg/kg	0.20	--	1	09/14/12 07:51	09/14/12 13:53	EPA 3050B	1,6010C	MG
Cadmium, Total	ND		mg/kg	0.40	--	1	09/14/12 07:51	09/14/12 13:53	EPA 3050B	1,6010C	MG
Chromium, Total	7.5		mg/kg	0.40	--	1	09/14/12 07:51	09/14/12 13:53	EPA 3050B	1,6010C	MG
Copper, Total	11		mg/kg	0.40	--	1	09/14/12 07:51	09/14/12 13:53	EPA 3050B	1,6010C	MG
Lead, Total	10		mg/kg	2.0	--	1	09/14/12 07:51	09/14/12 13:53	EPA 3050B	1,6010C	MG
Mercury, Total	ND		mg/kg	0.08	--	1	09/10/12 22:41	09/11/12 10:56	EPA 7471B	1,7471B	KL
Nickel, Total	7.2		mg/kg	1.0	--	1	09/14/12 07:51	09/14/12 13:53	EPA 3050B	1,6010C	MG
Selenium, Total	ND		mg/kg	0.80	--	1	09/14/12 07:51	09/14/12 13:53	EPA 3050B	1,6010C	MG
Silver, Total	ND		mg/kg	0.40	--	1	09/14/12 07:51	09/14/12 13:53	EPA 3050B	1,6010C	MG
Thallium, Total	ND		mg/kg	0.80	--	1	09/14/12 07:51	09/14/12 13:53	EPA 3050B	1,6010C	MG
Zinc, Total	25		mg/kg	2.0	--	1	09/14/12 07:51	09/14/12 13:53	EPA 3050B	1,6010C	MG



**Project Name:** BRANCH AVE STOP & SHOP  
**Project Number:** Not Specified

**Lab Number:** L1215988  
**Report Date:** 09/14/12

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG559745-1									
Mercury, Total	ND	mg/kg	0.08	--	1	09/10/12 22:41	09/11/12 10:29	1,7471B	KL

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG560739-1									
Antimony, Total	ND	mg/kg	2.0	--	1	09/14/12 07:51	09/14/12 11:52	1,6010C	MG
Arsenic, Total	ND	mg/kg	0.40	--	1	09/14/12 07:51	09/14/12 11:52	1,6010C	MG
Beryllium, Total	ND	mg/kg	0.20	--	1	09/14/12 07:51	09/14/12 11:52	1,6010C	MG
Cadmium, Total	ND	mg/kg	0.40	--	1	09/14/12 07:51	09/14/12 11:52	1,6010C	MG
Chromium, Total	ND	mg/kg	0.40	--	1	09/14/12 07:51	09/14/12 11:52	1,6010C	MG
Copper, Total	ND	mg/kg	0.40	--	1	09/14/12 07:51	09/14/12 11:52	1,6010C	MG
Lead, Total	ND	mg/kg	2.0	--	1	09/14/12 07:51	09/14/12 11:52	1,6010C	MG
Nickel, Total	ND	mg/kg	1.0	--	1	09/14/12 07:51	09/14/12 11:52	1,6010C	MG
Selenium, Total	ND	mg/kg	0.80	--	1	09/14/12 07:51	09/14/12 11:52	1,6010C	MG
Silver, Total	ND	mg/kg	0.40	--	1	09/14/12 07:51	09/14/12 11:52	1,6010C	MG
Thallium, Total	ND	mg/kg	0.80	--	1	09/14/12 07:51	09/14/12 11:52	1,6010C	MG
Zinc, Total	ND	mg/kg	2.0	--	1	09/14/12 07:51	09/14/12 11:52	1,6010C	MG

### Prep Information

Digestion Method: EPA 3050B

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BRANCH AVE STOP & SHOP

**Lab Number:** L1215988

**Project Number:** Not Specified

**Report Date:** 09/14/12

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG559745-2 SRM Lot Number: 0518-10-02								
Mercury, Total	111		-		67-133	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG560739-2								
Antimony, Total	99		-		75-125	-		
Arsenic, Total	107		-		75-125	-		
Beryllium, Total	102		-		75-125	-		
Cadmium, Total	103		-		75-125	-		
Chromium, Total	101		-		75-125	-		
Copper, Total	107		-		75-125	-		
Lead, Total	103		-		75-125	-		
Nickel, Total	102		-		75-125	-		
Selenium, Total	102		-		75-125	-		
Silver, Total	103		-		75-125	-		
Thallium, Total	104		-		75-125	-		
Zinc, Total	99		-		75-125	-		

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BRANCH AVE STOP & SHOP  
**Project Number:** Not Specified

**Lab Number:** L1215988  
**Report Date:** 09/14/12

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01    QC Batch ID: WG559745-4    QC Sample: L1215906-01    Client ID: MS Sample												
Mercury, Total	ND	0.137	0.18	131	Q	-	-		70-130	-		35
Total Metals - Westborough Lab Associated sample(s): 01    QC Batch ID: WG560739-4    QC Sample: L1216021-01    Client ID: MS Sample												
Antimony, Total	5.9	40.7	20	35	Q	-	-		75-125	-		35
Arsenic, Total	1.8	9.78	12	104		-	-		75-125	-		35
Beryllium, Total	ND	4.07	4.4	108		-	-		75-125	-		35
Cadmium, Total	ND	4.15	4.0	96		-	-		75-125	-		35
Chromium, Total	9.0	16.3	26	104		-	-		75-125	-		35
Copper, Total	140	20.4	170	147	Q	-	-		75-125	-		35
Lead, Total	ND	41.5	44	106		-	-		75-125	-		35
Nickel, Total	26	40.7	67	101		-	-		75-125	-		35
Selenium, Total	ND	9.78	9.8	100		-	-		75-125	-		35
Silver, Total	ND	24.4	26	106		-	-		75-125	-		35
Thallium, Total	2.1	9.78	11	91		-	-		75-125	-		35
Zinc, Total	56	40.7	96	98		-	-		75-125	-		35

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BRANCH AVE STOP &amp; SHOP

Project Number: Not Specified

Lab Number: L1215988

Report Date: 09/14/12

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG559745-3 QC Sample: L1215906-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/kg	NC		35
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG560739-3 QC Sample: L1216021-01 Client ID: DUP Sample						
Antimony, Total	5.9	5.8	mg/kg	2		35
Arsenic, Total	1.8	3.6	mg/kg	67	Q	35
Beryllium, Total	ND	ND	mg/kg	NC		35
Cadmium, Total	ND	ND	mg/kg	NC		35
Chromium, Total	9.0	9.8	mg/kg	9		35
Copper, Total	140	160	mg/kg	13		35
Lead, Total	ND	4.8	mg/kg	NC		35
Nickel, Total	26	29	mg/kg	11		35
Selenium, Total	ND	ND	mg/kg	NC		35
Silver, Total	ND	ND	mg/kg	NC		35
Thallium, Total	2.1	2.0	mg/kg	5		35
Zinc, Total	56	64	mg/kg	13		35

# **INORGANICS & MISCELLANEOUS**



**Project Name:** BRANCH AVE STOP & SHOP  
**Project Number:** Not Specified

**Lab Number:** L1215988  
**Report Date:** 09/14/12

**SAMPLE RESULTS**

**Lab ID:** L1215988-01  
**Client ID:** SOIL DISPOSAL  
**Sample Location:** PROV. RI  
**Matrix:** Soil

**Date Collected:** 09/07/12 14:00  
**Date Received:** 09/07/12  
**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	96		%	0.10	NA	1	-	09/10/12 15:53	30,2540G	SD



## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** BRANCH AVE STOP & SHOP

**Project Number:** Not Specified

**Lab Number:** L1215988

**Report Date:** 09/14/12

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG559766-1 QC Sample: L1215988-01 Client ID: SOIL DISPOSAL						
Solids, Total	96	96	%	0		20

**Project Name:** BRANCH AVE STOP & SHOP**Lab Number:** L1215988**Project Number:** Not Specified**Report Date:** 09/14/12**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(*)
L1215988-01A	Vial MeOH preserved	A	N/A	3	Y	Absent	8260H(14)
L1215988-01B	Amber 250ml unpreserved	A	N/A	3	Y	Absent	8270TCL(14),BE-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),TS(7),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),HG-T(28),TPH-DRO-D(14),CD-TI(180)
L1215988-01C	Amber 250ml unpreserved	A	N/A	3	Y	Absent	8270TCL(14),BE-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),TS(7),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),HG-T(28),TPH-DRO-D(14),CD-TI(180)
L1215988-01D	Amber 250ml unpreserved	A	N/A	3	Y	Absent	8270TCL(14),BE-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),TS(7),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),HG-T(28),TPH-DRO-D(14),CD-TI(180)

\*Values in parentheses indicate holding time in days



**Project Name:** BRANCH AVE STOP & SHOP  
**Project Number:** Not Specified

**Lab Number:** L1215988  
**Report Date:** 09/14/12

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

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

### Terms

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

### Data Qualifiers

<b>A</b>	- Spectra identified as "Aldol Condensation Product".
<b>B</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 five times (5x) 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.
<b>C</b>	- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
<b>D</b>	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
<b>E</b>	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
<b>G</b>	- 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.
<b>H</b>	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
<b>I</b>	- The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
<b>M</b>	- Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
<b>NJ</b>	- 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.

Report Format: Data Usability Report



**Project Name:** BRANCH AVE STOP & SHOP**Lab Number:** L1215988**Project Number:** Not Specified**Report Date:** 09/14/12**Data Qualifiers**

- 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.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** BRANCH AVE STOP & SHOP  
**Project Number:** Not Specified

**Lab Number:** L1215988  
**Report Date:** 09/14/12

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
- 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.



## Certificate/Approval Program Summary

Last revised August 16, 2012 - Westboro Facility

The following list includes only those analytes/methods for which certification/approval is currently held.  
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

### Connecticut Department of Public Health Certificate/Lab ID: PH-0574. **NELAP Accredited Solid Waste/Soil.**

*Drinking Water* (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Silver, Sodium, Thallium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP) 504.1, Ethylene Dibromide (EDB) 504.1, 1,4-Dioxane (Mod 8270). Microbiology Parameters: Total Coliform-MF mEndo (SM9222B), Total Coliform – Colilert (SM9223, Enumeration and P/A), E. Coli. – Colilert (SM9223, Enumeration and P/A), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform-EC Medium (SM 9221E).

*Wastewater/Non-Potable Water* (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, TPH (HEM/SGT), CT-Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH. Microbiology Parameters: Total Coliform – MF mEndo (SM9222B), Total Coliform – MTF (SM9221B), E. Coli – Colilert (SM9223 Enumeration), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform – A-1 Broth (SM9221E), Enterococcus - Enterolert.

*Solid Waste/Soil* (Inorganic Parameters: pH, Sulfide, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), SPLP Leach (1312 metals only), Reactivity. Organic Parameters: PCBs, PCBs in Oil, Organochlorine Pesticides, Technical Chlordane, Toxaphene, CT-Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP (Silvex), Dalapon, Volatile Organics (SW 8260), Acid Extractables (Phenols) (SW 8270), Benzidines (SW 8270), Phthalates (SW 8270), Nitrosamines (SW 8270), Nitroaromatics & Cyclic Ketones (SW 8270), PAHs (SW 8270), Haloethers (SW 8270), Chlorinated Hydrocarbons (SW 8270).)

### Maine Department of Human Services Certificate/Lab ID: 2009024.

*Drinking Water* (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2130B, 2320B, 2540C, 4500CI-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

*Wastewater/Non-Potable Water* (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, SM2320B, 2510B, 2540C, 2540D, 426C, 4500CI-D, 4500CI-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NO3-F, 4500P-B, 4500P-E, 5210B, 5220D, 5310C, 9010B, 9040B, 9030B, 7470A, 7196A, 2340B, EPA 200.7, 6010B, 200.8, 6020, 245.1, 1311, 1312, 3005A, Enterolert, 9223D, 9222D. Organic Parameters: 608, 624, 625, 8081A, 8082, 8330, 8151A, 8260B, 8270C, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

*Solid Waste/Soil* (Inorganic Parameters: 9010B, 9012A, 9014A, 9030B, 9040B, 9045C, 6010B, 7471A, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B. Organic Parameters: ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260B, 8270C, 8330, 8151A, 8081A, 8082, 3540C, 3546, 3580A, 3630C, 5030B, 5035.)

### Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

*Drinking Water* (Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl) (EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Fluoride, Sulfate); (EPA 353.2 for: Nitrate-N, Nitrite-N); (SM4500NO3-F for: Nitrate-N and Nitrite-N); 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, 2320B, SM2540C, SM4500H-B. Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics); (504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), EPA 332. Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; ColilertQT SM9223B; MF-SM9222D.)

for: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn); 245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: 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-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. Microbiology Parameters: (ColilertQT SM9223B; Enterolert-QT: SM9222D-MF.)

**New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. *NELAP Accredited.***

*Drinking Water* (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. Organic Parameters: 504.1, 524.2.)

*Non-Potable Water* (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 3005A, 200.7, 200.8, 245.1, SW-846 6010B, 6010C, 6020, 6020A, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 350.2, 351.1, 353.2, 410.4, 420.1, 426C, 1664A, SW-846 9010B, 9030B, 9040B, SM2120B, 2310B, 2320B, 2540B, 2540D, 4500H+B, 4500CL-E, 4500CN-E, 4500NH3-H, 4500NO3-F, 4500NO2-B, 4500P-E, 4500-S2-D, 5210B, 5220D, 2510B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D, 3060A. Organic Parameters: SW-846 3510C, 3630C, 5030B, 8260B, 8270C, 8270D, 8330, EPA 624, 625, 608, SW-846 8082, 8082A, 8081A, 8081B, 8151A, 8330, 8270C-SIM, 8270D-SIM.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6010B, 6010C, 7196A, 7471A, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040B, 9045C, 9050, 9065,1311, 1312, 3005A, 3050B, 3060A. Organic Parameters: SW-846 3540C, 3546, 3050B, 3580A, 3630C, 5030B, 5035, 8260B, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330, 8151A, 8015B, 8015C, 8082, 8082A, 8081A, 8081B.)

**New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. *NELAP Accredited.***

*Drinking Water* (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.1, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. Organic Parameters: EPA 332, 504.1, 524.2.)

*Non-Potable Water* (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500CI-E, EPA 300.0, SM2120B, 2340B, SM4500F-BC, EPA 200.7, 200.8, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM510ABC, SM4500P-B5+E, 2540B, 2540C, 2540D, 2540G, EPA 120.1, SM2510B, SM2520B, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 7470A, 5540C, SM4500H-B, 4500SO3-B, SM3500Cr-D, 4500CN-CE, EPA 245.1, SW-846 9040B, 3005A, 3015, EPA 6010B, 6010C, 6020, 6020A, 7196A, 3060A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 1,4-Dioxane by NJ Modified 8270, 8015B, NJ EPH.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846, 6010B, 6010C, 6020, 6020A, 7196A, 3060A, 9010B, 9030B, 1010, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9014, 9012A, 9040B, 9040C, 9045C, 9045D, 9050A, 9065, 9251. Organic Parameters: SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3546, 3580A, 3630C, 5030B, 5035L, 5035H, NJ OQA-QAM-025 Rev.7, NJ EPH.)

**New York Department of Health Certificate/Lab ID: 11148. *NELAP Accredited.***

*Drinking Water* (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500NO3-F, 2540C, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)

*Non-Potable Water* (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, 5310C, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, SM4500CL-E, 4500F-C, SM15 426C, EPA 350.1, SM4500NH3-BH, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6010C, 6020, 6020A, EPA 7196A, SM3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, LACHAT 10-204-00-1-A, 4500CN-CE, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015, 9010B, 9030B. Organic Parameters: EPA 624, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 625, 608, 8081A, 8081B, 8151A, 8330, 8082, 8082A, EPA 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 1010, 1030, EPA 6010B, 6010C, 7196A, 7471A, 7471B, 9012A, 9014, 9065, 9050A, EPA 1311, 1312, 3005A, 3050B, 9010B, 9040C, 9045D. Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8015B, 8015C, 8081A, 8081B, 8151A, 8330, 8082 8082A, 3540C, 3546, 3580, 3580A, 5030B, 5035A-H, 5035A-L.)



**North Carolina Department of the Environment and Natural Resources Certificate/Lab ID : 666. (Inorganic Parameters: SM2310B, 2320B, 4500Cl-E, 4500Cn-E, 9014, Lachat 10-204-00-1-X, 1010A, 1030, 4500NO3-F, 353.2, 4500P-E, 4500SO4-E, 300.0, 4500S-D, 5310B, 5310C, 6010C, 6020A, 200.7, 200.8, 3500Cr-B, 7196A, 245.1, 7471A, 7471B, 1311,1312. Organic Parameters: 608, 8081B, 8082A, 624, 8260B, 625, 8270D, 8151A, 8015C, 504.1, MA-EPH, MA-VPH.)**

*Drinking Water Program Certificate/Lab ID: 25700. (Inorganic Parameters: Chloride EPA 300.0. Organic Parameters: 524.2)*

**Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. *NELAP Accredited.***  
*Drinking Water (Inorganic Parameters: 200.7, 200.8, 245.2, 300.0, 332.0, 2120B, 2320B, 2510B, 2540C, 4500-CN-CE, 4500F-C, 4500H+-B, 4500NO3-F, 5310C. Organic Parameters: EPA 524.2, 504.1)*

*Non-Potable Water (Inorganic Parameters: EPA 120.1, 1312, 3005A,3015, 3060A, 200.7, 200.8, 410.4, 1664A, SM2540D, 5210B, 5220D, 4500-P,BE, 245.1, 300.0, 3501., 350.2, 353.2, 420.1, 6010B, 6010C, 6020, 6020A, 7196A, 7470A, 9010B, 9030B, 9040B, Lachat 10-107-06-2-D, NJ-EPH, 2120B, 2310B, 2320B, 2340B, 2510C, 2540B, 2540C, 3500Cr-D, 436C, 4500CN-CE, 4500Cl-E, 4500F-B, 4500F-C, 4500H+-B, 4500NO2-B, 4500NO3-F, 4500S-D, 4500SO3-B, 5310BCD, 5540C. Organic Parameters: EPA 3510C, 3630C, 5030B, 625, 624, 608, 8081A, 8081B, 8082, 8082A, 8151A, 8260B, 8270C, 8270D, 8330, 8015B, )*

*Solid & Hazardous Waste (Inorganic Parameters: EPA 350.1, 1010, 1030, 1311, 1312, 3005A, 3050B, 3060A, 6010B, 6010C, 6020A, 7196A, 7471A, 7471B, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065, SM 4500NH3-BH, 9030B, 9038, 9251. Organic Parameters: 3540C, 3546, 3580A, 3630C, 5035, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8260B, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330, NJ-EPH.)*

**Rhode Island Department of Health Certificate/Lab ID: LAO00065. *NELAP Accredited via NJ-DEP.***

Refer to MA-DEP Certificate for Potable and Non-Potable Water.

Refer to NJ-DEP Certificate for Potable and Non-Potable Water.

**Texas Commission on Environmental Quality Certificate/Lab ID: T104704476-09-1. *NELAP Accredited.***

*Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 S<sup>2-</sup> D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)*

*Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312, 9012, 9014, 9040, 9045, 9050, 9065.)*

**Virginia Division of Consolidated Laboratory Services Certificate/Lab ID: 460195. *NELAP Accredited.***

*Drinking Water (Inorganic Parameters: EPA 200.7, 200.8, 300.0, 2510B, 2120B, 2540C, 4500CN-CE, 245.2, 2320B, 4500F-C, 4500F-C, 4500NO3-F, 5310C. Organic Parameters: EPA 504.1, 524.2.)*

*Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 3005A, 3015, 1312, 6010B, 6010C, 3060A, 353.2, 420.1, 6020, 6020A, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X, 7196A, 7470A, 9010B, 9040B, 2310B, 2320B, 2510B, 2540B, 2540C, 3500Cr-D, 426C, 4500Cl-E, 4500F-B, 4500F-C, 4500PE, 510AC, 5210B, 5310B 5310C, 5540C. Organic Parameters: EPA 3510C, 3630C, 5030B, 8260B, 608, 624, 625, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330, )*

*Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, 3060A, 3050B, 1311, 1312, 6010B, 6010C, 6020, , 7196A, 7471A, 7471B, 6020A, 9030B, 9010B, 9012A, 9014 9040B, 9045C, 9050A, 9065. Organic Parameters: EPA 5035, 3540C, 3546, 3550, 3580, 3630C, 8260B, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330.)*

**Department of Defense, L-A-B Certificate/Lab ID: L2217.**

*Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)*

*Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6010C, 6020, 6020A, 245.1, 245.2, 7470A, 9040B, 9010B, 180.1. 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO3-F, 4500CL-D, 5220D, 5310C, 2130B, 2320B, 2540C, 3005A, 3015, 9010B, 9056. Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330A, 8082, 8082A, 8081A, 8081B, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)*

*Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010B, 6010C, 7471A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 9012A, 9040B, 9045C, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330A/B-prep, 8082, 8082A, 8081A, 8081B, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)*

**The following analytes are not included in our current NELAP/TNI Scope of Accreditation:**

**EPA 8260B:** Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methylnaphthalenes, Total Dimethylnaphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, Chloride in a soil matrix, TKN in a soil matrix, NO<sub>2</sub> in a soil matrix, NO<sub>3</sub> in a soil matrix, SO<sub>4</sub> in a soil matrix. **EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.



# CHAIN OF CUSTODY

PAGE 1 OF 1

WESTBROOK, MA  
141. 508-884-9220  
FAX: 508-886-9193

MAINSFIELD, MA  
TR: 508-822-9300  
FAX: 508-822-3368

### Client Information

Client: Burke Truck

Address: 1150 Turnpike St.

City/State/Zip: Stoughton, MA 02072

Phone: 781 292-0900

Fax: 781 292 0930

Email: norm.easttrucks@verizon.net

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed. (Note: All CAM methods for inorganic analyses require MS every 20 soil samples)

### Project Information

Project Name: Bremley Street Slop

Project Location: Prov. Rd

Project #:

Project Manager: Brian Sullivan

ALPHA Quote #:

Turnaround Time

Date Rec'd in Lab:

9/12/12

ALPHA Job #:

21915-988

### Report Information - Data Deliverables

FAX  EMAIL

ADEX  Add'l Deliverables

### Regulatory Requirements/Report Limits

State/Fed Program

Order

### MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTO

Yes  No Are MCP Analytical Methods Required?

Yes  No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)

Yes  No Are CT RCP (Reasonable Confidence Protocol) Required?

### SAMPLE HANDLING

Filtration  Done  Not needed

Lab to do Preservation  Lab to do

Lab to do

Lab to do

Lab to do

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Time	Sample Matrix	Sampler's Initials
15988-01	Soil disposed	9/12	2:00P		BS

ANALYSIS	
TPH-ORO-D	X
VOC	X
5 VOC	X
13 PP metals	X

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT  
MAMCP or CT RCP?

Container Type  
Preservative

Date/Time

Date/Time

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

Relinquished By: [Signature]

Date/Time: 9/12/12

Received By: [Signature]

Date/Time: 9/12/12

Alpha's Terms and Conditions. See reverse side.



**REPORT OF ANALYTICAL RESULTS**

**NETLAB Case Number Y0713-07**

Prepared for:

Hugo Key and Son Inc.  
PO Box 6  
Newport, RI 02840

Report Date: July 20, 2012

Reviewed by:

Richard Warila  
Laboratory Director

Lab # RI010

NEW ENGLAND TESTING LABORATORY, INC.

1254 Douglas Avenue, North Providence, RI 02904

(401) 353-3420

**SAMPLES SUBMITTED and REQUEST FOR ANALYSIS:**

The samples listed in Table I were submitted to New England Testing Laboratory on July 13, 2012. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is Y0713-07.

Custody records are included in this report.

**TABLE I, Samples Submitted**

Sample ID	Date Sampled	Matrix	Analysis Requested
Bldg 1303 Trench Drain	7/13/12	Soil	Table II
Bldg A-9 Drainage	7/13/12	Soil	Table II

**TABLE II, Analysis and Methods**

<b>ANALYSIS</b>	<b>PREPARATION METHOD</b>	<b>DETERMINATIVE METHOD</b>
Total Petroleum Hydrocarbons	3550C	8100M
PAHs	3550C	8270D
Total Metals		
Antimony	3050B	6010C
Arsenic	3050B	6010C
Beryllium	3050B	6010C
Cadmium	3050B	6010C
Chromium	3050B	6010C
Copper	3050B	6010C
Lead	3050B	6010C
Mercury	NA	7471B
Nickel	3050B	6010C
Selenium	3050B	6010C
Silver	3050B	6010C
Thallium	3050B	7010
Zinc	3050B	6010C
Volatile Organic Compounds	5035	8260B

This method is documented in:

*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, USEPA/OSW.*

## **CASE NARRATIVE:**

### **Sample Receipt:**

No trip blank was supplied. No field blank was supplied. (This does not qualify the analytical results but does prevent conducting these SW-846 {Chapter 1, Section 3.4} QA Audits).

The samples were all appropriately preserved/cooled upon receipt.

The samples were received in the appropriate containers.

The chain of custody was adequately completed and corresponded to the samples submitted.

### **Metals:**

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

### **PAHs:**

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

### **Total Petroleum Hydrocarbons:**

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

### **Volatile Organic Compounds:**

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

<b>Sample: Bldg 1303 Trench Drain</b>		Analyst's Initials: NS
<b>Case No. Y0713-07</b>		
<b>Date Collected: 7/13/12</b>		
<b>Sample Matrix: Soil</b>		
<b>Subject: TPH</b>		
<b>Prep Method: EPA 3550C</b>	Date Extracted	Date Analyzed
<b>Analytical Method: EPA 8100 M</b>	7/17/12	7/17/12
Compound	Concentration, mg/kg* (ppm)	Reporting Limit
Total Petroleum Hydrocarbons	171	20
Surrogates:		
Compound	% Recovery	Limits
Chlorooctadecane	102	62-151

<b>Sample: Bldg A-9 Drainage</b>		Analyst's Initials: NS
<b>Case No. Y0713-07</b>		
<b>Date Collected: 7/13/12</b>		
<b>Sample Matrix: Soil</b>		
<b>Subject: TPH</b>		
<b>Prep Method: EPA 3550C</b>	Date Extracted	Date Analyzed
<b>Analytical Method: EPA 8100 M</b>	7/17/12	7/17/12
Compound	Concentration, mg/kg* (ppm)	Reporting Limit
Total Petroleum Hydrocarbons	72	22
Surrogates:		
Compound	% Recovery	Limits
Chlorooctadecane	100	62-151

ND = Not Detected

\*Dry Weight Basis

## **METALS RESULTS**

The presence of the NETLAB LOGO in the top right corner of each page in this section indicates:

The Technical Manager of the Metals Analysis Department certifies that the results included in this section have been reviewed and approved. Any exceptions or qualifications of substance have been reported in the case narrative.

New England Testing Laboratory, Inc.



METALS RESULTS



Case Number: Y0713-07  
 Sample ID: Bldg 1303 Trench Drain  
 Date collected: 7/13/12  
 Matrix: Soil  
 Solids, %: 96.04  
 Sample Type: Total

Analyst JC/RS

Parameter	CAS Number	Preparative Method	Analytical Method	Result	Reporting Limit	Units	Date of Preparation	Date Analyzed
Antimony	7440-36-0	3050B	6010C	1.51	0.62	mg/kg	7/19/12	7/19/12
Arsenic	7440-38-2	3050B	6010C	5.00	0.62	mg/kg	7/19/12	7/19/12
Beryllium	7440-41-7	3050B	6010C	ND	0.31	mg/kg	7/19/12	7/19/12
Cadmium	7440-43-9	3050B	6010C	0.31	0.31	mg/kg	7/19/12	7/19/12
Chromium	7440-47-3	3050B	6010C	6.10	0.31	mg/kg	7/19/12	7/19/12
Copper	7440-50-8	3050B	6010C	9.15	1.24	mg/kg	7/19/12	7/19/12
Lead	7439-92-1	3050B	6010C	12.1	0.31	mg/kg	7/19/12	7/19/12
Mercury	7439-97-6	NA	7471B	ND	0.070	mg/kg	7/18/12	7/18/12
Nickel	7440-02-0	3050B	6010C	7.32	0.31	mg/kg	7/19/12	7/19/12
Selenium	7782-49-2	3050B	6010C	3.98	0.62	mg/kg	7/19/12	7/19/12
Silver	7440-22-4	3050B	6010C	ND	0.31	mg/kg	7/19/12	7/19/12
Thallium	7440-28-0	3050B	7010	ND	0.11	mg/kg	7/19/12	7/19/12
Zinc	7440-66-6	3050B	6010C	35.6	1.24	mg/kg	7/19/12	7/19/12

ND indicates Not Detected.

All results are reported on a dry weight basis.

METALS RESULTS



Case Number: Y0713-07  
 Sample ID: Bldg A-9 Drainage  
 Date collected: 7/13/12  
 Matrix: Soil  
 Solids, %: 91.22  
 Sample Type: Total

Analyst JC/RS

Parameter	CAS Number	Preparative Method	Analytical Method	Result	Reporting Limit	Units	Date of Preparation	Date Analyzed
Antimony	7440-36-0	3050B	6010C	1.85	0.59	mg/kg	7/19/12	7/19/12
Arsenic	7440-38-2	3050B	6010C	5.11	0.59	mg/kg	7/19/12	7/19/12
Beryllium	7440-41-7	3050B	6010C	ND	0.29	mg/kg	7/19/12	7/19/12
Cadmium	7440-43-9	3050B	6010C	ND	0.29	mg/kg	7/19/12	7/19/12
Chromium	7440-47-3	3050B	6010C	5.35	0.29	mg/kg	7/19/12	7/19/12
Copper	7440-50-8	3050B	6010C	19.5	1.17	mg/kg	7/19/12	7/19/12
Lead	7439-92-1	3050B	6010C	12.2	0.29	mg/kg	7/19/12	7/19/12
Mercury	7439-97-6	NA	7471B	ND	0.081	mg/kg	7/18/12	7/18/12
Nickel	7440-02-0	3050B	6010C	10.9	0.29	mg/kg	7/19/12	7/19/12
Selenium	7782-49-2	3050B	6010C	5.58	0.59	mg/kg	7/19/12	7/19/12
Silver	7440-22-4	3050B	6010C	ND	0.29	mg/kg	7/19/12	7/19/12
Thallium	7440-28-0	3050B	7010	ND	0.14	mg/kg	7/19/12	7/19/12
Zinc	7440-66-6	3050B	6010C	23.3	1.17	mg/kg	7/19/12	7/19/12

ND indicates Not Detected.

All results are reported on a dry weight basis.

## **RESULTS: SEMIVOLATILE ORGANIC COMPOUNDS**

The presence of the NETLAB LOGO in the top right corner of each page in this section indicates:

The Technical Manager of the Organics Analysis Department certifies that the samples included in this section have been prepared and analyzed using the procedures cited and that the results have been reviewed and approved. Any exceptions or qualifications of substance have been reported in the case narrative.

## SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Hugo Key and Son Inc  
 Method: 8270 Lab Sample ID: Bldg 1303 Trench Drain  
 Matrix: (soil/water/air) SOIL Lab File ID: B071818.D  
 Sample wt/vol: 20.481 (g/ml) G Date Sampled: 7/13/2012  
 Level: (low/med) LOW Date Extracted: 7/17/2012  
 % Moisture: 3.96 Date Analyzed: 7/18/2012  
 Concentrated Extract Volume: 1000 (uL) Dilution Factor: 1.0  
 Injection Volume: 1.0 (uL)  
 Analyst's Initials: JD

CAS NO.	COMPOUND	UNITS:	UG/KG	Q
91-20-3	Naphthalene		200	
91-57-6	2-Methylnaphthalene		100	U
208-96-8	Acenaphthylene		100	U
83-32-9	Acenaphthene		100	U
132-64-9	Dibenzofuran		100	U
86-73-7	Fluorene		120	
85-01-8	Phenanthrene		490	
120-12-7	Anthracene		100	U
206-44-0	Fluoranthene		640	
129-00-0	Pyrene		570	
56-55-3	Benzo(a)anthracene		290	
218-01-9	Chrysene		340	
205-99-2	Benzo(b)fluoranthene		400	
207-08-9	Benzo(k)fluoranthene		130	
50-32-8	Benzo(a)pyrene		280	
193-39-5	Indeno(1,2,3-cd)pyrene		210	
53-70-3	Dibenz(a,h)anthracene		100	U
191-24-2	Benzo(g,h,i)perylene		220	

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

FORM I SV-1

## SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Hugo Key and Son Inc  
 Method: 8270 Lab Sample ID: Bldg A-9 Drainage  
 Matrix: (soil/water/air) SOIL Lab File ID: B071814.D  
 Sample wt/vol: 20.253 (g/ml) G Date Sampled: 7/13/2012  
 Level: (low/med) LOW Date Extracted: 7/17/2012  
 % Moisture: 8.78 Date Analyzed: 7/18/2012  
 Concentrated Extract Volume: 1000 (uL) Dilution Factor: 1.0  
 Injection Volume: 1.0 (uL)  
 Analyst's Initials: JD

CAS NO.	COMPOUND	UNITS:	UG/KG	Q
91-20-3	Naphthalene		340	
91-57-6	2-Methylnaphthalene		110	U
208-96-8	Acenaphthylene		180	
83-32-9	Acenaphthene		110	U
132-64-9	Dibenzofuran		110	U
86-73-7	Fluorene		140	
85-01-8	Phenanthrene		390	
120-12-7	Anthracene		110	U
206-44-0	Fluoranthene		630	
129-00-0	Pyrene		460	
56-55-3	Benzo(a)anthracene		190	
218-01-9	Chrysene		260	
205-99-2	Benzo(b)fluoranthene		290	
207-08-9	Benzo(k)fluoranthene		110	U
50-32-8	Benzo(a)pyrene		190	
193-39-5	Indeno(1,2,3-cd)pyrene		130	
53-70-3	Dibenz(a,h)anthracene		110	U
191-24-2	Benzo(g,h,i)perylene		120	

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

FORM I SV-1

## **RESULTS: VOLATILE ORGANIC COMPOUNDS**

The presence of the NETLAB LOGO in the top right corner of each page in this section indicates:

The Technical Manager of the Organics Analysis Department certifies that the samples included in this section have been prepared and analyzed using the procedures cited and that the results have been reviewed and approved. Any exceptions or qualifications of substance have been reported in the case narrative.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Y0713-07  
 Method: 8260 Lab Sample ID: Bldg 1303 Trench Drain  
 Matrix: (soil/water) SOIL Lab File ID: C071908.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/13/2012  
 % Moisture 3.96 Date Analyzed: 7/19/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
75-01-4	Vinyl Chloride	52	U
74-83-9	Bromomethane	52	U
75-00-3	Chloroethane	52	U
67-64-1	Acetone	260	U
75-35-4	1,1-Dichloroethene	52	U
75-15-0	Carbon Disulfide	52	U
75-09-2	Methylene Chloride	52	U
1634-04-4	tert-Butyl methyl ether	52	U
156-60-5	trans-1,2 Dichloroethene	52	U
75-34-3	1,1-Dichloroethane	52	U
78-93-3	2-Butanone	260	U
594-20-7	2,2-Dichloropropane	52	U
156-59-2	cis-1,2-Dichloroethene	52	U
67-66-3	Chloroform	52	U
74-97-5	Bromochloromethane	52	U
71-55-6	1,1,1-Trichloroethane	52	U
563-58-6	1,1-Dichloropropene	52	U
56-23-5	Carbon Tetrachloride	52	U
71-43-2	Benzene	52	U
107-06-2	1,2-Dichloroethane	52	U
79-01-6	Trichloroethene	52	U
78-87-5	1,2-Dichloropropane	52	U
75-27-4	Bromodichloromethane	52	U
74-95-3	Dibromomethane	52	U
108-10-1	4-Methyl-2-pentanone	260	U
106-93-4	Ethylene Dibromide	52	U
10061-01-5	cis-1,3-Dichloropropene	52	U
108-88-3	Toluene	52	U
10061-02-6	Trans-1,3-Dichloropropene	52	U
79-00-5	1,1,2-Trichloroethane	52	U
591-78-6	2-Hexanone	260	U
127-18-4	Tetrachloroethene	52	U
124-48-1	Chlorodibromomethane	52	U
108-90-7	Chlorobenzene	52	U
630-20-6	1,1,1,2-Tetrachloroethane	52	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Y0713-07  
 Method: 8260 Lab Sample ID: Bldg 1303 Trench Drain  
 Matrix: (soil/water) SOIL Lab File ID: C071908.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/13/2012  
 % Moisture 3.96 Date Analyzed: 7/19/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
100-41-4	Ethylbenzene	52	U
1330-20-7	m & p-Xylene	100	U
95-47-6	o-Xylene	52	U
100-42-5	Styrene	52	U
75-25-2	Bromoform	52	U
98-82-8	Isopropylbenzene	52	U
79-34-5	1,1,2,2-Tetrachloroethane	52	U
108-86-1	Bromobenzene	52	U
96-18-4	1,2,3-Trichloropropane	52	U
95-49-8	2-Chlorotoluene	52	U
103-65-1	n-Propylbenzene	52	U
108-67-8	1,3,5-Trimethylbenzene	52	U
106-43-4	4-Chlorotoluene	52	U
98-06-6	tert-Butylbenzene	52	U
95-63-6	1,2,4-Trimethylbenzene	52	U
135-98-8	sec-Butylbenzene	52	U
99-87-6	p-Isopropyltoluene	52	U
75-87-3	Chloromethane	52	U
75-65-0	tert butyl alcohol	52	U
541-73-1	1,3-Dichlorobenzene	52	U
109-99-9	Tetrahydrofuran	52	U
106-46-7	1,4-Dichlorobenzene	52	U
60-29-7	Diethyl Ether	52	U
104-51-8	n-Butylbenzene	52	U
95-50-1	1,2-Dichlorobenzene	52	U
96-12-8	1,2-Dibromo-3-chloropropane	52	U
120-82-1	1,2,4-Trichlorobenzene	52	U
87-68-3	Hexachlorobutadiene	52	U
91-20-3	Naphthalene	52	U
87-61-6	1,2,3-Trichlorobenzene	52	U
994-05-8	Tert-amyl Methyl Ether	52	U
75-71-8	Dichlorodifluoromethane	52	U
142-28-9	1,3-Dichloropropane	52	U
75-69-4	Trichlorofluoromethane	52	U
637-92-3	Ethyl Tert-butyl ether	52	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.



VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Y0713-07  
 Method: 8260 Lab Sample ID: Bldg 1303 Trench Drain  
 Matrix: (soil/water) SOIL Lab File ID: C071908.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/13/2012  
 % Moisture 3.96 Date Analyzed: 7/19/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
108-20-3	Diisopropyl Ether	52	U
123-91-1	1,4-Dioxane	13000	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Y0713-07  
 Method: 8260 Lab Sample ID: Bldg A-9 Drainage  
 Matrix: (soil/water) SOIL Lab File ID: C071907.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/13/2012  
 % Moisture 8.78 Date Analyzed: 7/19/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
75-01-4	Vinyl Chloride	55	U
74-83-9	Bromomethane	55	U
75-00-3	Chloroethane	55	U
67-64-1	Acetone	270	U
75-35-4	1,1-Dichloroethene	55	U
75-15-0	Carbon Disulfide	55	U
75-09-2	Methylene Chloride	55	U
1634-04-4	tert-Butyl methyl ether	55	U
156-60-5	trans-1,2 Dichloroethene	55	U
75-34-3	1,1-Dichloroethane	55	U
78-93-3	2-Butanone	270	U
594-20-7	2,2-Dichloropropane	55	U
156-59-2	cis-1,2-Dichloroethene	55	U
67-66-3	Chloroform	55	U
74-97-5	Bromochloromethane	55	U
71-55-6	1,1,1-Trichloroethane	55	U
563-58-6	1,1-Dichloropropene	55	U
56-23-5	Carbon Tetrachloride	55	U
71-43-2	Benzene	55	U
107-06-2	1,2-Dichloroethane	55	U
79-01-6	Trichloroethene	55	U
78-87-5	1,2-Dichloropropane	55	U
75-27-4	Bromodichloromethane	55	U
74-95-3	Dibromomethane	55	U
108-10-1	4-Methyl-2-pentanone	270	U
106-93-4	Ethylene Dibromide	55	U
10061-01-5	cis-1,3-Dichloropropene	55	U
108-88-3	Toluene	55	U
10061-02-6	Trans-1,3-Dichloropropene	55	U
79-00-5	1,1,2-Trichloroethane	55	U
591-78-6	2-Hexanone	270	U
127-18-4	Tetrachloroethene	55	U
124-48-1	Chlorodibromomethane	55	U
108-90-7	Chlorobenzene	55	U
630-20-6	1,1,1,2-Tetrachloroethane	55	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Y0713-07  
 Method: 8260 Lab Sample ID: Bldg A-9 Drainage  
 Matrix: (soil/water) SOIL Lab File ID: C071907.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/13/2012  
 % Moisture 8.78 Date Analyzed: 7/19/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
100-41-4	Ethylbenzene	55	U
1330-20-7	m & p-Xylene	110	U
95-47-6	o-Xylene	55	U
100-42-5	Styrene	55	U
75-25-2	Bromoform	55	U
98-82-8	Isopropylbenzene	55	U
79-34-5	1,1,2,2-Tetrachloroethane	55	U
108-86-1	Bromobenzene	55	U
96-18-4	1,2,3-Trichloropropane	55	U
95-49-8	2-Chlorotoluene	55	U
103-65-1	n-Propylbenzene	55	U
108-67-8	1,3,5-Trimethylbenzene	55	U
106-43-4	4-Chlorotoluene	55	U
98-06-6	tert-Butylbenzene	55	U
95-63-6	1,2,4-Trimethylbenzene	55	U
135-98-8	sec-Butylbenzene	55	U
99-87-6	p-Isopropyltoluene	55	U
75-87-3	Chloromethane	55	U
75-65-0	tert butyl alcohol	55	U
541-73-1	1,3-Dichlorobenzene	55	U
109-99-9	Tetrahydrofuran	55	U
106-46-7	1,4-Dichlorobenzene	55	U
60-29-7	Diethyl Ether	55	U
104-51-8	n-Butylbenzene	55	U
95-50-1	1,2-Dichlorobenzene	55	U
96-12-8	1,2-Dibromo-3-chloropropane	55	U
120-82-1	1,2,4-Trichlorobenzene	55	U
87-68-3	Hexachlorobutadiene	55	U
91-20-3	Naphthalene	55	U
87-61-6	1,2,3-Trichlorobenzene	55	U
994-05-8	Tert-amyl Methyl Ether	55	U
75-71-8	Dichlorodifluoromethane	55	U
142-28-9	1,3-Dichloropropane	55	U
75-69-4	Trichlorofluoromethane	55	U
637-92-3	Ethyl Tert-butyl ether	55	U

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New England Testing Laboratory, Inc.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Y0713-07  
 Method: 8260 Lab Sample ID: Bldg A-9 Drainage  
 Matrix: (soil/water) SOIL Lab File ID: C071907.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/13/2012  
 % Moisture 8.78 Date Analyzed: 7/19/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
108-20-3	Diisopropyl Ether	55	U
123-91-1	1,4-Dioxane	14000	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.





**REPORT OF ANALYTICAL RESULTS**

**NETLAB Case Number Y0713-07**

Prepared for:

Hugo Key and Son Inc.  
PO Box 6  
Newport, RI 02840

Report Date: July 20, 2012

Reviewed by:

Richard Warila  
Laboratory Director

Lab # RI010

NEW ENGLAND TESTING LABORATORY, INC.

1254 Douglas Avenue, North Providence, RI 02904

(401) 353-3420

**SAMPLES SUBMITTED and REQUEST FOR ANALYSIS:**

The samples listed in Table I were submitted to New England Testing Laboratory on July 13, 2012. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is Y0713-07.

Custody records are included in this report.

**TABLE I, Samples Submitted**

Sample ID	Date Sampled	Matrix	Analysis Requested
Bldg 1303 Trench Drain	7/13/12	Soil	Table II
Bldg A-9 Drainage	7/13/12	Soil	Table II

**TABLE II, Analysis and Methods**

<b>ANALYSIS</b>	<b>PREPARATION METHOD</b>	<b>DETERMINATIVE METHOD</b>
Total Petroleum Hydrocarbons	3550C	8100M
PAHs	3550C	8270D
Total Metals		
Antimony	3050B	6010C
Arsenic	3050B	6010C
Beryllium	3050B	6010C
Cadmium	3050B	6010C
Chromium	3050B	6010C
Copper	3050B	6010C
Lead	3050B	6010C
Mercury	NA	7471B
Nickel	3050B	6010C
Selenium	3050B	6010C
Silver	3050B	6010C
Thallium	3050B	7010
Zinc	3050B	6010C
Volatile Organic Compounds	5035	8260B

This method is documented in:

*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, USEPA/OSW.*

## **CASE NARRATIVE:**

### **Sample Receipt:**

No trip blank was supplied. No field blank was supplied. (This does not qualify the analytical results but does prevent conducting these SW-846 {Chapter 1, Section 3.4} QA Audits).

The samples were all appropriately preserved/cooled upon receipt.

The samples were received in the appropriate containers.

The chain of custody was adequately completed and corresponded to the samples submitted.

### **Metals:**

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

### **PAHs:**

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

### **Total Petroleum Hydrocarbons:**

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

### **Volatile Organic Compounds:**

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.



<b>Sample: Bldg 1303 Trench Drain</b>		Analyst's Initials: NS
<b>Case No. Y0713-07</b>		
<b>Date Collected: 7/13/12</b>		
<b>Sample Matrix: Soil</b>		
<b>Subject: TPH</b>		
<b>Prep Method: EPA 3550C</b>	Date Extracted	Date Analyzed
<b>Analytical Method: EPA 8100 M</b>	7/17/12	7/17/12
Compound	Concentration, mg/kg* (ppm)	Reporting Limit
Total Petroleum Hydrocarbons	171	20
Surrogates:		
Compound	% Recovery	Limits
Chlorooctadecane	102	62-151

<b>Sample: Bldg A-9 Drainage</b>		Analyst's Initials: NS
<b>Case No. Y0713-07</b>		
<b>Date Collected: 7/13/12</b>		
<b>Sample Matrix: Soil</b>		
<b>Subject: TPH</b>		
<b>Prep Method: EPA 3550C</b>	Date Extracted	Date Analyzed
<b>Analytical Method: EPA 8100 M</b>	7/17/12	7/17/12
Compound	Concentration, mg/kg* (ppm)	Reporting Limit
Total Petroleum Hydrocarbons	72	22
Surrogates:		
Compound	% Recovery	Limits
Chlorooctadecane	100	62-151

ND = Not Detected

\*Dry Weight Basis

## **METALS RESULTS**

The presence of the NETLAB LOGO in the top right corner of each page in this section indicates:

The Technical Manager of the Metals Analysis Department certifies that the results included in this section have been reviewed and approved. Any exceptions or qualifications of substance have been reported in the case narrative.

New England Testing Laboratory, Inc.

METALS RESULTS



Case Number: Y0713-07  
 Sample ID: Bldg 1303 Trench Drain  
 Date collected: 7/13/12  
 Matrix: Soil  
 Solids, %: 96.04  
 Sample Type: Total

Analyst JC/RS

Parameter	CAS Number	Preparative Method	Analytical Method	Result	Reporting Limit	Units	Date of Preparation	Date Analyzed
Antimony	7440-36-0	3050B	6010C	1.51	0.62	mg/kg	7/19/12	7/19/12
Arsenic	7440-38-2	3050B	6010C	5.00	0.62	mg/kg	7/19/12	7/19/12
Beryllium	7440-41-7	3050B	6010C	ND	0.31	mg/kg	7/19/12	7/19/12
Cadmium	7440-43-9	3050B	6010C	0.31	0.31	mg/kg	7/19/12	7/19/12
Chromium	7440-47-3	3050B	6010C	6.10	0.31	mg/kg	7/19/12	7/19/12
Copper	7440-50-8	3050B	6010C	9.15	1.24	mg/kg	7/19/12	7/19/12
Lead	7439-92-1	3050B	6010C	12.1	0.31	mg/kg	7/19/12	7/19/12
Mercury	7439-97-6	NA	7471B	ND	0.070	mg/kg	7/18/12	7/18/12
Nickel	7440-02-0	3050B	6010C	7.32	0.31	mg/kg	7/19/12	7/19/12
Selenium	7782-49-2	3050B	6010C	3.98	0.62	mg/kg	7/19/12	7/19/12
Silver	7440-22-4	3050B	6010C	ND	0.31	mg/kg	7/19/12	7/19/12
Thallium	7440-28-0	3050B	7010	ND	0.11	mg/kg	7/19/12	7/19/12
Zinc	7440-66-6	3050B	6010C	35.6	1.24	mg/kg	7/19/12	7/19/12

ND indicates Not Detected.

All results are reported on a dry weight basis.

METALS RESULTS



Case Number: Y0713-07  
 Sample ID: Bldg A-9 Drainage  
 Date collected: 7/13/12  
 Matrix: Soil  
 Solids, %: 91.22  
 Sample Type: Total

Analyst JC/RS

Parameter	CAS Number	Preparative Method	Analytical Method	Result	Reporting Limit	Units	Date of Preparation	Date Analyzed
Antimony	7440-36-0	3050B	6010C	1.85	0.59	mg/kg	7/19/12	7/19/12
Arsenic	7440-38-2	3050B	6010C	5.11	0.59	mg/kg	7/19/12	7/19/12
Beryllium	7440-41-7	3050B	6010C	ND	0.29	mg/kg	7/19/12	7/19/12
Cadmium	7440-43-9	3050B	6010C	ND	0.29	mg/kg	7/19/12	7/19/12
Chromium	7440-47-3	3050B	6010C	5.35	0.29	mg/kg	7/19/12	7/19/12
Copper	7440-50-8	3050B	6010C	19.5	1.17	mg/kg	7/19/12	7/19/12
Lead	7439-92-1	3050B	6010C	12.2	0.29	mg/kg	7/19/12	7/19/12
Mercury	7439-97-6	NA	7471B	ND	0.081	mg/kg	7/18/12	7/18/12
Nickel	7440-02-0	3050B	6010C	10.9	0.29	mg/kg	7/19/12	7/19/12
Selenium	7782-49-2	3050B	6010C	5.58	0.59	mg/kg	7/19/12	7/19/12
Silver	7440-22-4	3050B	6010C	ND	0.29	mg/kg	7/19/12	7/19/12
Thallium	7440-28-0	3050B	7010	ND	0.14	mg/kg	7/19/12	7/19/12
Zinc	7440-66-6	3050B	6010C	23.3	1.17	mg/kg	7/19/12	7/19/12

ND indicates Not Detected.

All results are reported on a dry weight basis.

## **RESULTS: SEMIVOLATILE ORGANIC COMPOUNDS**

The presence of the NETLAB LOGO in the top right corner of each page in this section indicates:

The Technical Manager of the Organics Analysis Department certifies that the samples included in this section have been prepared and analyzed using the procedures cited and that the results have been reviewed and approved. Any exceptions or qualifications of substance have been reported in the case narrative.

## SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Hugo Key and Son Inc  
 Method: 8270 Lab Sample ID: Bldg 1303 Trench Drain  
 Matrix: (soil/water/air) SOIL Lab File ID: B071818.D  
 Sample wt/vol: 20.481 (g/ml) G Date Sampled: 7/13/2012  
 Level: (low/med) LOW Date Extracted: 7/17/2012  
 % Moisture: 3.96 Date Analyzed: 7/18/2012  
 Concentrated Extract Volume: 1000 (uL) Dilution Factor: 1.0  
 Injection Volume: 1.0 (uL)  
 Analyst's Initials: JD

CAS NO.	COMPOUND	UNITS:	UG/KG	Q
91-20-3	Naphthalene		200	
91-57-6	2-Methylnaphthalene		100	U
208-96-8	Acenaphthylene		100	U
83-32-9	Acenaphthene		100	U
132-64-9	Dibenzofuran		100	U
86-73-7	Fluorene		120	
85-01-8	Phenanthrene		490	
120-12-7	Anthracene		100	U
206-44-0	Fluoranthene		640	
129-00-0	Pyrene		570	
56-55-3	Benzo(a)anthracene		290	
218-01-9	Chrysene		340	
205-99-2	Benzo(b)fluoranthene		400	
207-08-9	Benzo(k)fluoranthene		130	
50-32-8	Benzo(a)pyrene		280	
193-39-5	Indeno(1,2,3-cd)pyrene		210	
53-70-3	Dibenz(a,h)anthracene		100	U
191-24-2	Benzo(g,h,i)perylene		220	

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

FORM I SV-1

## SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Hugo Key and Son Inc  
 Method: 8270 Lab Sample ID: Bldg A-9 Drainage  
 Matrix: (soil/water/air) SOIL Lab File ID: B071814.D  
 Sample wt/vol: 20.253 (g/ml) G Date Sampled: 7/13/2012  
 Level: (low/med) LOW Date Extracted: 7/17/2012  
 % Moisture: 8.78 Date Analyzed: 7/18/2012  
 Concentrated Extract Volume: 1000 (uL) Dilution Factor: 1.0  
 Injection Volume: 1.0 (uL)  
 Analyst's Initials: JD

CAS NO.	COMPOUND	UNITS:	UG/KG	Q
91-20-3	Naphthalene		340	
91-57-6	2-Methylnaphthalene		110	U
208-96-8	Acenaphthylene		180	
83-32-9	Acenaphthene		110	U
132-64-9	Dibenzofuran		110	U
86-73-7	Fluorene		140	
85-01-8	Phenanthrene		390	
120-12-7	Anthracene		110	U
206-44-0	Fluoranthene		630	
129-00-0	Pyrene		460	
56-55-3	Benzo(a)anthracene		190	
218-01-9	Chrysene		260	
205-99-2	Benzo(b)fluoranthene		290	
207-08-9	Benzo(k)fluoranthene		110	U
50-32-8	Benzo(a)pyrene		190	
193-39-5	Indeno(1,2,3-cd)pyrene		130	
53-70-3	Dibenz(a,h)anthracene		110	U
191-24-2	Benzo(g,h,i)perylene		120	

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

FORM I SV-1

## **RESULTS: VOLATILE ORGANIC COMPOUNDS**

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The Technical Manager of the Organics Analysis Department certifies that the samples included in this section have been prepared and analyzed using the procedures cited and that the results have been reviewed and approved. Any exceptions or qualifications of substance have been reported in the case narrative.



VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Y0713-07  
 Method: 8260 Lab Sample ID: Bldg 1303 Trench Drain  
 Matrix: (soil/water) SOIL Lab File ID: C071908.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/13/2012  
 % Moisture 3.96 Date Analyzed: 7/19/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
75-01-4	Vinyl Chloride	52	U
74-83-9	Bromomethane	52	U
75-00-3	Chloroethane	52	U
67-64-1	Acetone	260	U
75-35-4	1,1-Dichloroethene	52	U
75-15-0	Carbon Disulfide	52	U
75-09-2	Methylene Chloride	52	U
1634-04-4	tert-Butyl methyl ether	52	U
156-60-5	trans-1,2 Dichloroethene	52	U
75-34-3	1,1-Dichloroethane	52	U
78-93-3	2-Butanone	260	U
594-20-7	2,2-Dichloropropane	52	U
156-59-2	cis-1,2-Dichloroethene	52	U
67-66-3	Chloroform	52	U
74-97-5	Bromochloromethane	52	U
71-55-6	1,1,1-Trichloroethane	52	U
563-58-6	1,1-Dichloropropene	52	U
56-23-5	Carbon Tetrachloride	52	U
71-43-2	Benzene	52	U
107-06-2	1,2-Dichloroethane	52	U
79-01-6	Trichloroethene	52	U
78-87-5	1,2-Dichloropropane	52	U
75-27-4	Bromodichloromethane	52	U
74-95-3	Dibromomethane	52	U
108-10-1	4-Methyl-2-pentanone	260	U
106-93-4	Ethylene Dibromide	52	U
10061-01-5	cis-1,3-Dichloropropene	52	U
108-88-3	Toluene	52	U
10061-02-6	Trans-1,3-Dichloropropene	52	U
79-00-5	1,1,2-Trichloroethane	52	U
591-78-6	2-Hexanone	260	U
127-18-4	Tetrachloroethene	52	U
124-48-1	Chlorodibromomethane	52	U
108-90-7	Chlorobenzene	52	U
630-20-6	1,1,1,2-Tetrachloroethane	52	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Y0713-07  
 Method: 8260 Lab Sample ID: Bldg 1303 Trench Drain  
 Matrix: (soil/water) SOIL Lab File ID: C071908.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/13/2012  
 % Moisture 3.96 Date Analyzed: 7/19/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
100-41-4	Ethylbenzene	52	U
1330-20-7	m & p-Xylene	100	U
95-47-6	o-Xylene	52	U
100-42-5	Styrene	52	U
75-25-2	Bromoform	52	U
98-82-8	Isopropylbenzene	52	U
79-34-5	1,1,2,2-Tetrachloroethane	52	U
108-86-1	Bromobenzene	52	U
96-18-4	1,2,3-Trichloropropane	52	U
95-49-8	2-Chlorotoluene	52	U
103-65-1	n-Propylbenzene	52	U
108-67-8	1,3,5-Trimethylbenzene	52	U
106-43-4	4-Chlorotoluene	52	U
98-06-6	tert-Butylbenzene	52	U
95-63-6	1,2,4-Trimethylbenzene	52	U
135-98-8	sec-Butylbenzene	52	U
99-87-6	p-Isopropyltoluene	52	U
75-87-3	Chloromethane	52	U
75-65-0	tert butyl alcohol	52	U
541-73-1	1,3-Dichlorobenzene	52	U
109-99-9	Tetrahydrofuran	52	U
106-46-7	1,4-Dichlorobenzene	52	U
60-29-7	Diethyl Ether	52	U
104-51-8	n-Butylbenzene	52	U
95-50-1	1,2-Dichlorobenzene	52	U
96-12-8	1,2-Dibromo-3-chloropropane	52	U
120-82-1	1,2,4-Trichlorobenzene	52	U
87-68-3	Hexachlorobutadiene	52	U
91-20-3	Naphthalene	52	U
87-61-6	1,2,3-Trichlorobenzene	52	U
994-05-8	Tert-amyl Methyl Ether	52	U
75-71-8	Dichlorodifluoromethane	52	U
142-28-9	1,3-Dichloropropane	52	U
75-69-4	Trichlorofluoromethane	52	U
637-92-3	Ethyl Tert-butyl ether	52	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Y0713-07  
 Method: 8260 Lab Sample ID: Bldg 1303 Trench Drain  
 Matrix: (soil/water) SOIL Lab File ID: C071908.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/13/2012  
 % Moisture 3.96 Date Analyzed: 7/19/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
108-20-3	Diisopropyl Ether	52	U
123-91-1	1,4-Dioxane	13000	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Y0713-07  
 Method: 8260 Lab Sample ID: Bldg A-9 Drainage  
 Matrix: (soil/water) SOIL Lab File ID: C071907.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/13/2012  
 % Moisture 8.78 Date Analyzed: 7/19/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
75-01-4	Vinyl Chloride	55	U
74-83-9	Bromomethane	55	U
75-00-3	Chloroethane	55	U
67-64-1	Acetone	270	U
75-35-4	1,1-Dichloroethene	55	U
75-15-0	Carbon Disulfide	55	U
75-09-2	Methylene Chloride	55	U
1634-04-4	tert-Butyl methyl ether	55	U
156-60-5	trans-1,2 Dichloroethene	55	U
75-34-3	1,1-Dichloroethane	55	U
78-93-3	2-Butanone	270	U
594-20-7	2,2-Dichloropropane	55	U
156-59-2	cis-1,2-Dichloroethene	55	U
67-66-3	Chloroform	55	U
74-97-5	Bromochloromethane	55	U
71-55-6	1,1,1-Trichloroethane	55	U
563-58-6	1,1-Dichloropropene	55	U
56-23-5	Carbon Tetrachloride	55	U
71-43-2	Benzene	55	U
107-06-2	1,2-Dichloroethane	55	U
79-01-6	Trichloroethene	55	U
78-87-5	1,2-Dichloropropane	55	U
75-27-4	Bromodichloromethane	55	U
74-95-3	Dibromomethane	55	U
108-10-1	4-Methyl-2-pentanone	270	U
106-93-4	Ethylene Dibromide	55	U
10061-01-5	cis-1,3-Dichloropropene	55	U
108-88-3	Toluene	55	U
10061-02-6	Trans-1,3-Dichloropropene	55	U
79-00-5	1,1,2-Trichloroethane	55	U
591-78-6	2-Hexanone	270	U
127-18-4	Tetrachloroethene	55	U
124-48-1	Chlorodibromomethane	55	U
108-90-7	Chlorobenzene	55	U
630-20-6	1,1,1,2-Tetrachloroethane	55	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Y0713-07  
 Method: 8260 Lab Sample ID: Bldg A-9 Drainage  
 Matrix: (soil/water) SOIL Lab File ID: C071907.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/13/2012  
 % Moisture 8.78 Date Analyzed: 7/19/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
100-41-4	Ethylbenzene	55	U
1330-20-7	m & p-Xylene	110	U
95-47-6	o-Xylene	55	U
100-42-5	Styrene	55	U
75-25-2	Bromoform	55	U
98-82-8	Isopropylbenzene	55	U
79-34-5	1,1,2,2-Tetrachloroethane	55	U
108-86-1	Bromobenzene	55	U
96-18-4	1,2,3-Trichloropropane	55	U
95-49-8	2-Chlorotoluene	55	U
103-65-1	n-Propylbenzene	55	U
108-67-8	1,3,5-Trimethylbenzene	55	U
106-43-4	4-Chlorotoluene	55	U
98-06-6	tert-Butylbenzene	55	U
95-63-6	1,2,4-Trimethylbenzene	55	U
135-98-8	sec-Butylbenzene	55	U
99-87-6	p-Isopropyltoluene	55	U
75-87-3	Chloromethane	55	U
75-65-0	tert butyl alcohol	55	U
541-73-1	1,3-Dichlorobenzene	55	U
109-99-9	Tetrahydrofuran	55	U
106-46-7	1,4-Dichlorobenzene	55	U
60-29-7	Diethyl Ether	55	U
104-51-8	n-Butylbenzene	55	U
95-50-1	1,2-Dichlorobenzene	55	U
96-12-8	1,2-Dibromo-3-chloropropane	55	U
120-82-1	1,2,4-Trichlorobenzene	55	U
87-68-3	Hexachlorobutadiene	55	U
91-20-3	Naphthalene	55	U
87-61-6	1,2,3-Trichlorobenzene	55	U
994-05-8	Tert-amyl Methyl Ether	55	U
75-71-8	Dichlorodifluoromethane	55	U
142-28-9	1,3-Dichloropropane	55	U
75-69-4	Trichlorofluoromethane	55	U
637-92-3	Ethyl Tert-butyl ether	55	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0713-07 Client Name: Y0713-07  
 Method: 8260 Lab Sample ID: Bldg A-9 Drainage  
 Matrix: (soil/water) SOIL Lab File ID: C071907.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/13/2012  
 % Moisture 8.78 Date Analyzed: 7/19/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
108-20-3	Diisopropyl Ether	55	U
123-91-1	1,4-Dioxane	14000	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.





*CERTIFICATE OF ANALYSIS*

Doug LeDo  
GZA GeoEnvironmental, Inc.  
530 Broadway  
Providence, RI 02909

**RE: Building 990 (03.0032607.26)**  
**ESS Laboratory Work Order Number: 1207138**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard  
Laboratory Director

**REVIEWED**  
*By ESS Laboratory at 5:46 pm, Aug 23, 2012*

**Analytical Summary**

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

**Subcontracted Analyses**

CTS - Cranston, RI

Sieve Analysis





*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**SAMPLE RECEIPT**

The following samples were received on July 12, 2012 for the analyses specified on the enclosed Chain of Custody Record.

**Revision 1 August 23 2012: This report has been revised to include additional metals (Be, Cu, Ni, Sb, Tl, Zn)**

<b>Lab Number</b>	<b>SampleName</b>	<b>Matrix</b>	<b>Analysis</b>
1207138-01	Composite Fill	Soil	§, 1311/6010B, 1311/7470A, 6010B, 7.3.3.2, 7.3.4.1, 7471A, 8082, 8100M, 8260B, 8270C, 9050A, 9095A
1207138-02	Composite Till	Soil	§, 1311/6010B, 1311/7470A, 6010B, 7.3.3.2, 7.3.4.1, 7471A, 8082, 8100M, 8260B, 8270C, 9050A, 9095A



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**PROJECT NARRATIVE**

**1311/6000/7000 TCLP Metals**

1207138-01 Present in Method Blank (B).  
Lead

**3050B/6000/7000 Total Metals**

CG21309-BS1 Blank Spike recovery is above upper control limit (B+).  
Mercury (130% @ 80-120%)

**5035/8260B Volatile Organic Compounds / Methanol**

1207138-02 Surrogate recover(ies) outside of criteria. Reextraction/Reanalysis confirms results (SC).  
1,2-Dichloroethane-d4 (183% @ 70-130%), 4-Bromofluorobenzene (178% @ 70-130%),  
Dibromofluoromethane (172% @ 70-130%), Toluene-d8 (164% @ 70-130%)

CG21822-BS1 Blank Spike recovery is above upper control limit (B+).  
Acetone (149% @ 70-130%), Vinyl Acetate (137% @ 70-130%)

CG21822-BSD1 Relative percent difference for duplicate is outside of criteria (D+).  
2-Butanone (28%), Acetone (35%)

CVG0133-CCV1 Continuing Calibration recovery is above upper control limit (C+).  
Vinyl Acetate (133% @ 70-130%)

CVG0133-CCV1 Continuing Calibration recovery is below lower control limit (C-).  
1,4-Dioxane - Screen (58% @ 70-130%)

**8270C Semi-Volatile Organic Compounds**

CG21124-BS1 Blank Spike recovery is below lower control limit (B-).  
Aniline (39% @ 40-140%), Benzoic Acid (37% @ 40-140%)

CG21124-BSD1 Blank Spike recovery is below lower control limit (B-).  
Benzoic Acid (38% @ 40-140%)

CVG0078-CCV1 Calibration required quadratic regression (Q).  
2,4-Dinitrophenol (95% @ 70-130%)

CVG0078-CCV1 Continuing Calibration recovery is below lower control limit (C-).  
Pentachlorophenol (77% @ 80-120%)

CVG0087-CCV1 Calibration required quadratic regression (Q).  
2,4-Dinitrophenol (76% @ 70-130%)

**No other observations noted.**

**End of Project Narrative.**



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**DATA USABILITY LINKS**

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Fill  
Date Sampled: 07/11/12 14:00  
Percent Solids: 89

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-01  
Sample Matrix: Soil  
Units: mg/L

TCLP Extraction Date: 7/16/12 17:46

**1311/6000/7000 TCLP Metals**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	ND (0.050)	1311/6010B	5	1	SVD	07/18/12 14:55	50	50	CG21713
<b>Barium</b>	<b>0.154</b> (0.050)	1311/6010B	100	1	SVD	07/18/12 14:55	50	50	CG21713
Cadmium	ND (0.0050)	1311/6010B	1	1	SVD	07/18/12 14:55	50	50	CG21713
Chromium	ND (0.020)	1311/6010B	5	1	SVD	07/18/12 14:55	50	50	CG21713
<b>Lead</b>	<b>B 0.028</b> (0.020)	1311/6010B	5	1	SVD	07/18/12 14:55	50	50	CG21713
Mercury	ND (0.00050)	1311/7470A	0.2	1	KJK	07/17/12 18:44	20	40	CG21714
Selenium	ND (0.100)	1311/6010B	1	1	SVD	07/18/12 14:55	50	50	CG21713
Silver	ND (0.010)	1311/6010B	5	1	SVD	07/18/12 14:55	50	50	CG21713



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Fill  
Date Sampled: 07/11/12 14:00  
Percent Solids: 89

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-01  
Sample Matrix: Soil  
Units: mg/kg dry

**3050B/6000/7000 Total Metals**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (5.3)	6010B		1	SVD	07/14/12 15:21	2.12	100	CG21311
Arsenic	9.9 (2.6)	6010B		1	SVD	07/14/12 15:21	2.12	100	CG21311
Barium	18.6 (2.6)	6010B		1	SVD	07/14/12 15:21	2.12	100	CG21311
Beryllium	0.34 (0.11)	6010B		1	SVD	07/14/12 15:21	2.12	100	CG21311
Cadmium	ND (0.53)	6010B		1	SVD	07/14/12 15:21	2.12	100	CG21311
Chromium	12.0 (1.1)	6010B		1	SVD	07/14/12 15:21	2.12	100	CG21311
Copper	15.5 (2.6)	6010B		1	SVD	07/14/12 15:21	2.12	100	CG21311
Lead	9.7 (5.3)	6010B		1	SVD	07/14/12 15:21	2.12	100	CG21311
Mercury	0.232 (0.034)	7471A		1	JP	07/14/12 16:14	0.65	40	CG21309
Nickel	15.5 (2.6)	6010B		1	SVD	07/14/12 15:21	2.12	100	CG21311
Selenium	ND (5.3)	6010B		1	SVD	07/14/12 15:21	2.12	100	CG21311
Silver	ND (0.53)	6010B		1	SVD	07/14/12 15:21	2.12	100	CG21311
Thallium	ND (5.3)	6010B		1	SVD	07/14/12 15:21	2.12	100	CG21311
Zinc	35.6 (2.6)	6010B		1	SVD	07/14/12 15:21	2.12	100	CG21311



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Fill  
Date Sampled: 07/11/12 14:00  
Percent Solids: 89  
Initial Volume: 16  
Final Volume: 15  
Extraction Method: 5035

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Methanol**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.118)	0.0102		1	07/18/12 13:04	CVG0133	CG21822
1,1,1-Trichloroethane	ND (0.0588)	0.0104		1	07/18/12 13:04	CVG0133	CG21822
1,1,2,2-Tetrachloroethane	ND (0.0588)	0.0160		1	07/18/12 13:04	CVG0133	CG21822
1,1,2-Trichloroethane	ND (0.0588)	0.0147		1	07/18/12 13:04	CVG0133	CG21822
1,1-Dichloroethane	ND (0.0588)	0.0094		1	07/18/12 13:04	CVG0133	CG21822
1,1-Dichloroethene	ND (0.0588)	0.0145		1	07/18/12 13:04	CVG0133	CG21822
1,1-Dichloropropene	ND (0.0588)	0.0091		1	07/18/12 13:04	CVG0133	CG21822
1,2,3-Trichlorobenzene	ND (0.0588)	0.0197		1	07/18/12 13:04	CVG0133	CG21822
1,2,3-Trichloropropane	ND (0.0588)	0.0146		1	07/18/12 13:04	CVG0133	CG21822
1,2,4-Trichlorobenzene	ND (0.0588)	0.0129		1	07/18/12 13:04	CVG0133	CG21822
1,2,4-Trimethylbenzene	ND (0.0588)	0.0113		1	07/18/12 13:04	CVG0133	CG21822
1,2-Dibromo-3-Chloropropane	ND (0.353)	0.118		1	07/18/12 13:04	CVG0133	CG21822
1,2-Dibromoethane	ND (0.0588)	0.0149		1	07/18/12 13:04	CVG0133	CG21822
1,2-Dichlorobenzene	ND (0.0588)	0.0084		1	07/18/12 13:04	CVG0133	CG21822
1,2-Dichloroethane	ND (0.0588)	0.0158		1	07/18/12 13:04	CVG0133	CG21822
1,2-Dichloropropane	ND (0.0588)	0.0154		1	07/18/12 13:04	CVG0133	CG21822
1,3,5-Trimethylbenzene	ND (0.0588)	0.0104		1	07/18/12 13:04	CVG0133	CG21822
1,3-Dichlorobenzene	ND (0.0588)	0.0074		1	07/18/12 13:04	CVG0133	CG21822
1,3-Dichloropropane	ND (0.0588)	0.0132		1	07/18/12 13:04	CVG0133	CG21822
1,4-Dichlorobenzene	ND (0.0588)	0.0157		1	07/18/12 13:04	CVG0133	CG21822
1,4-Dioxane - Screen	ND (5.88)	1.97		1	07/18/12 13:04	CVG0133	CG21822
1-Chlorohexane	ND (0.0588)	0.0112		1	07/18/12 13:04	CVG0133	CG21822
2,2-Dichloropropane	ND (0.118)	0.0201		1	07/18/12 13:04	CVG0133	CG21822
2-Butanone	ND (1.47)	0.340		1	07/18/12 13:04	CVG0133	CG21822
2-Chlorotoluene	ND (0.0588)	0.0166		1	07/18/12 13:04	CVG0133	CG21822
2-Hexanone	ND (0.588)	0.101		1	07/18/12 13:04	CVG0133	CG21822
4-Chlorotoluene	ND (0.0588)	0.0077		1	07/18/12 13:04	CVG0133	CG21822
4-Isopropyltoluene	ND (0.0588)	0.0105		1	07/18/12 13:04	CVG0133	CG21822
4-Methyl-2-Pentanone	ND (0.588)	0.0709		1	07/18/12 13:04	CVG0133	CG21822
Acetone	ND (1.47)	0.435		1	07/18/12 13:04	CVG0133	CG21822
Benzene	ND (0.0588)	0.0095		1	07/18/12 13:04	CVG0133	CG21822



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Fill  
Date Sampled: 07/11/12 14:00  
Percent Solids: 89  
Initial Volume: 16  
Final Volume: 15  
Extraction Method: 5035

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Methanol**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromobenzene	ND (0.0588)	0.0161		1	07/18/12 13:04	CVG0133	CG21822
Bromochloromethane	ND (0.0588)	0.0191		1	07/18/12 13:04	CVG0133	CG21822
Bromodichloromethane	ND (0.0588)	0.0081		1	07/18/12 13:04	CVG0133	CG21822
Bromoform	ND (0.0588)	0.0169		1	07/18/12 13:04	CVG0133	CG21822
Bromomethane	ND (0.118)	0.0393		1	07/18/12 13:04	CVG0133	CG21822
Carbon Disulfide	ND (0.0588)	0.0087		1	07/18/12 13:04	CVG0133	CG21822
Carbon Tetrachloride	ND (0.0588)	0.0102		1	07/18/12 13:04	CVG0133	CG21822
Chlorobenzene	ND (0.0588)	0.0093		1	07/18/12 13:04	CVG0133	CG21822
Chloroethane	ND (0.118)	0.0392		1	07/18/12 13:04	CVG0133	CG21822
Chloroform	ND (0.0588)	0.0121		1	07/18/12 13:04	CVG0133	CG21822
Chloromethane	ND (0.118)	0.0149		1	07/18/12 13:04	CVG0133	CG21822
cis-1,2-Dichloroethene	ND (0.0588)	0.0146		1	07/18/12 13:04	CVG0133	CG21822
cis-1,3-Dichloropropene	ND (0.0588)	0.0133		1	07/18/12 13:04	CVG0133	CG21822
Dibromochloromethane	ND (0.0588)	0.0148		1	07/18/12 13:04	CVG0133	CG21822
Dibromomethane	ND (0.0588)	0.0186		1	07/18/12 13:04	CVG0133	CG21822
Dichlorodifluoromethane	ND (0.0588)	0.0102		1	07/18/12 13:04	CVG0133	CG21822
Diethyl Ether	ND (0.0588)	0.0149		1	07/18/12 13:04	CVG0133	CG21822
Di-isopropyl ether	ND (0.0588)	0.0111		1	07/18/12 13:04	CVG0133	CG21822
Ethyl tertiary-butyl ether	ND (0.0588)	0.0148		1	07/18/12 13:04	CVG0133	CG21822
Ethylbenzene	ND (0.0588)	0.0077		1	07/18/12 13:04	CVG0133	CG21822
Hexachlorobutadiene	ND (0.0588)	0.0197		1	07/18/12 13:04	CVG0133	CG21822
Isopropylbenzene	ND (0.0588)	0.0104		1	07/18/12 13:04	CVG0133	CG21822
Methyl tert-Butyl Ether	ND (0.0588)	0.0094		1	07/18/12 13:04	CVG0133	CG21822
Methylene Chloride	ND (0.294)	0.0154		1	07/18/12 13:04	CVG0133	CG21822
Naphthalene	ND (0.0588)	0.0154		1	07/18/12 13:04	CVG0133	CG21822
n-Butylbenzene	ND (0.0588)	0.0145		1	07/18/12 13:04	CVG0133	CG21822
n-Propylbenzene	ND (0.0588)	0.0144		1	07/18/12 13:04	CVG0133	CG21822
sec-Butylbenzene	ND (0.0588)	0.0079		1	07/18/12 13:04	CVG0133	CG21822
Styrene	ND (0.0588)	0.0078		1	07/18/12 13:04	CVG0133	CG21822
tert-Butylbenzene	ND (0.0588)	0.0138		1	07/18/12 13:04	CVG0133	CG21822
Tertiary-amyl methyl ether	ND (0.0588)	0.0085		1	07/18/12 13:04	CVG0133	CG21822



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
 Client Project ID: Building 990  
 Client Sample ID: Composite Fill  
 Date Sampled: 07/11/12 14:00  
 Percent Solids: 89  
 Initial Volume: 16  
 Final Volume: 15  
 Extraction Method: 5035

ESS Laboratory Work Order: 1207138  
 ESS Laboratory Sample ID: 1207138-01  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: MD

**5035/8260B Volatile Organic Compounds / Methanol**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrachloroethene	ND (0.0588)	0.0197		1	07/18/12 13:04	CVG0133	CG21822
Tetrahydrofuran	ND (0.588)	0.152		1	07/18/12 13:04	CVG0133	CG21822
Toluene	ND (0.0588)	0.0149		1	07/18/12 13:04	CVG0133	CG21822
trans-1,2-Dichloroethene	ND (0.0588)	0.0193		1	07/18/12 13:04	CVG0133	CG21822
trans-1,3-Dichloropropene	ND (0.0588)	0.0181		1	07/18/12 13:04	CVG0133	CG21822
Trichloroethene	ND (0.0588)	0.0121		1	07/18/12 13:04	CVG0133	CG21822
Trichlorofluoromethane	ND (0.0588)	0.0155		1	07/18/12 13:04	CVG0133	CG21822
Vinyl Acetate	ND (0.294)	0.0121		1	07/18/12 13:04	CVG0133	CG21822
Vinyl Chloride	ND (0.0588)	0.0194		1	07/18/12 13:04	CVG0133	CG21822
Xylene O	ND (0.0588)	0.0113		1	07/18/12 13:04	CVG0133	CG21822
Xylene P,M	ND (0.118)	0.0228		1	07/18/12 13:04	CVG0133	CG21822
Xylenes (Total)	ND (0.177)			1	07/18/12 13:04		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	107 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	109 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	102 %		70-130
<i>Surrogate: Toluene-d8</i>	99 %		70-130





*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
 Client Project ID: Building 990  
 Client Sample ID: Composite Fill  
 Date Sampled: 07/11/12 14:00  
 Percent Solids: 89  
 Initial Volume: 19.9  
 Final Volume: 10  
 Extraction Method: 3540

ESS Laboratory Work Order: 1207138  
 ESS Laboratory Sample ID: 1207138-01  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: ML  
 Prepared: 7/16/12 18:00

**8082 Polychlorinated Biphenyls (PCB)**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0565)		1	07/17/12 17:32		CG21918
Aroclor 1221	ND (0.0565)		1	07/17/12 17:32		CG21918
Aroclor 1232	ND (0.0565)		1	07/17/12 17:32		CG21918
Aroclor 1242	ND (0.0565)		1	07/17/12 17:32		CG21918
Aroclor 1248	ND (0.0565)		1	07/17/12 17:32		CG21918
Aroclor 1254	ND (0.0565)		1	07/17/12 17:32		CG21918
Aroclor 1260	ND (0.0565)		1	07/17/12 17:32		CG21918
Aroclor 1262	ND (0.0565)		1	07/17/12 17:32		CG21918
Aroclor 1268	ND (0.0565)		1	07/17/12 17:32		CG21918

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	77 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	91 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	100 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	100 %		30-150



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Fill  
Date Sampled: 07/11/12 14:00  
Percent Solids: 89  
Initial Volume: 20.6  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ML  
Prepared: 7/12/12 16:45

**8100M Total Petroleum Hydrocarbons**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (40.9)		1	07/14/12 21:21	CVG0097	CG21118
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>113 %</i>		<i>40-140</i>			



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
 Client Project ID: Building 990  
 Client Sample ID: Composite Fill  
 Date Sampled: 07/11/12 14:00  
 Percent Solids: 89  
 Initial Volume: 14.3  
 Final Volume: 0.5  
 Extraction Method: 3546

ESS Laboratory Work Order: 1207138  
 ESS Laboratory Sample ID: 1207138-01  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: IBM  
 Prepared: 7/12/12 16:45

**8270C Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
1,2,4-Trichlorobenzene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
1,2-Dichlorobenzene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
1,3-Dichlorobenzene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
1,4-Dichlorobenzene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
2,3,4,6-Tetrachlorophenol	ND (1.97)		1	07/13/12 19:49	CVG0087	CG21124
2,4,5-Trichlorophenol	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
2,4,6-Trichlorophenol	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
2,4-Dichlorophenol	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
2,4-Dimethylphenol	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
2,4-Dinitrophenol	ND (1.97)		1	07/13/12 19:49	CVG0087	CG21124
2,4-Dinitrotoluene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
2,6-Dinitrotoluene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
2-Chloronaphthalene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
2-Chlorophenol	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
2-Methylnaphthalene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
2-Methylphenol	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
2-Nitroaniline	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
2-Nitrophenol	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
3,3'-Dichlorobenzidine	ND (0.786)		1	07/13/12 19:49	CVG0087	CG21124
3+4-Methylphenol	ND (0.786)		1	07/13/12 19:49	CVG0087	CG21124
3-Nitroaniline	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
4,6-Dinitro-2-Methylphenol	ND (1.97)		1	07/13/12 19:49	CVG0087	CG21124
4-Bromophenyl-phenylether	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
4-Chloro-3-Methylphenol	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
4-Chloroaniline	ND (0.786)		1	07/13/12 19:49	CVG0087	CG21124
4-Chloro-phenyl-phenyl ether	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
4-Nitroaniline	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
4-Nitrophenol	ND (1.97)		1	07/13/12 19:49	CVG0087	CG21124
Acenaphthene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Acenaphthylene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Fill  
Date Sampled: 07/11/12 14:00  
Percent Solids: 89  
Initial Volume: 14.3  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: IBM  
Prepared: 7/12/12 16:45

**8270C Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Acetophenone	ND (0.786)		1	07/13/12 19:49	CVG0087	CG21124
Aniline	ND (0.786)		1	07/13/12 19:49	CVG0087	CG21124
Anthracene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Azobenzene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Benzo(a)anthracene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Benzo(a)pyrene	ND (0.197)		1	07/13/12 19:49	CVG0087	CG21124
Benzo(b)fluoranthene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Benzo(g,h,i)perylene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Benzo(k)fluoranthene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Benzoic Acid	ND (1.97)		1	07/13/12 19:49	CVG0087	CG21124
Benzyl Alcohol	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
bis(2-Chloroethoxy)methane	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
bis(2-Chloroethyl)ether	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
bis(2-chloroisopropyl)Ether	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
bis(2-Ethylhexyl)phthalate	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Butylbenzylphthalate	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Carbazole	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
<b>Chrysene</b>	<b>0.234</b> (0.197)		1	07/13/12 19:49	CVG0087	CG21124
Dibenzo(a,h)Anthracene	ND (0.197)		1	07/13/12 19:49	CVG0087	CG21124
Dibenzofuran	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Diethylphthalate	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Dimethylphthalate	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Di-n-butylphthalate	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Di-n-octylphthalate	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
<b>Fluoranthene</b>	<b>0.429</b> (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Fluorene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Hexachlorobenzene	ND (0.197)		1	07/13/12 19:49	CVG0087	CG21124
Hexachlorobutadiene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Hexachlorocyclopentadiene	ND (1.97)		1	07/13/12 19:49	CVG0087	CG21124
Hexachloroethane	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Indeno(1,2,3-cd)Pyrene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Fill  
Date Sampled: 07/11/12 14:00  
Percent Solids: 89  
Initial Volume: 14.3  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: IBM  
Prepared: 7/12/12 16:45

**8270C Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Isophorone	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Naphthalene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Nitrobenzene	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
N-Nitrosodimethylamine	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
N-Nitroso-Di-n-Propylamine	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
N-nitrosodiphenylamine	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Pentachlorophenol	ND (1.97)		1	07/13/12 19:49	CVG0087	CG21124
<b>Phenanthrene</b>	<b>0.634</b> (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Phenol	ND (0.392)		1	07/13/12 19:49	CVG0087	CG21124
<b>Pyrene</b>	<b>0.649</b> (0.392)		1	07/13/12 19:49	CVG0087	CG21124
Pyridine	ND (1.97)		1	07/13/12 19:49	CVG0087	CG21124

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	63 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	99 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	72 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	71 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	67 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	65 %		30-130
<i>Surrogate: Phenol-d6</i>	72 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	83 %		30-130



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Fill  
Date Sampled: 07/11/12 14:00  
Percent Solids: 89

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-01  
Sample Matrix: Soil

**Classical Chemistry**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
<b>Conductivity</b>	<b>WL 63 (5)</b>	9050A		1	DPS	07/13/12 14:50	umhos/cm	CG21315
Free Liquid	ND (0.3)	9095A		1	DPS	07/13/12 14:40	ml/5 min	CG21312
Reactive Cyanide	ND (2.0)	7.3.3.2		1	DPS	07/14/12 12:30	mg/kg	CG21402
Reactive Sulfide	ND (2.0)	7.3.4.1		1	DPS	07/14/12 12:30	mg/kg	CG21402
<b>Sieve Analysis</b>	<b>See Attached (N/A)</b>							



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Till  
Date Sampled: 07/11/12 14:10  
Percent Solids: 91

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-02  
Sample Matrix: Soil  
Units: mg/L

TCLP Extraction Date: 7/16/12 17:46

**1311/6000/7000 TCLP Metals**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	ND (0.050)	1311/6010B	5	1	SVD	07/18/12 14:59	50	50	CG21713
<b>Barium</b>	<b>0.203</b> (0.050)	1311/6010B	100	1	SVD	07/18/12 14:59	50	50	CG21713
Cadmium	ND (0.0050)	1311/6010B	1	1	SVD	07/18/12 14:59	50	50	CG21713
Chromium	ND (0.020)	1311/6010B	5	1	SVD	07/18/12 14:59	50	50	CG21713
Lead	ND (0.020)	1311/6010B	5	1	SVD	07/18/12 14:59	50	50	CG21713
Mercury	ND (0.00050)	1311/7470A	0.2	1	KJK	07/17/12 19:01	20	40	CG21714
Selenium	ND (0.100)	1311/6010B	1	1	SVD	07/18/12 14:59	50	50	CG21713
Silver	ND (0.010)	1311/6010B	5	1	SVD	07/18/12 14:59	50	50	CG21713



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Till  
Date Sampled: 07/11/12 14:10  
Percent Solids: 91

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-02  
Sample Matrix: Soil  
Units: mg/kg dry

**3050B/6000/7000 Total Metals**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (4.7)	6010B		1	SVD	07/14/12 15:25	2.34	100	CG21311
Arsenic	9.4 (2.3)	6010B		1	SVD	07/14/12 15:25	2.34	100	CG21311
Barium	21.4 (2.3)	6010B		1	SVD	07/14/12 15:25	2.34	100	CG21311
Beryllium	0.35 (0.10)	6010B		1	SVD	07/14/12 15:25	2.34	100	CG21311
Cadmium	ND (0.47)	6010B		1	SVD	07/14/12 15:25	2.34	100	CG21311
Chromium	19.0 (0.9)	6010B		1	SVD	07/14/12 15:25	2.34	100	CG21311
Copper	23.3 (2.3)	6010B		1	SVD	07/14/12 15:25	2.34	100	CG21311
Lead	5.5 (4.7)	6010B		1	SVD	07/14/12 15:25	2.34	100	CG21311
Mercury	ND (0.036)	7471A		1	JP	07/14/12 17:49	0.61	40	CG21309
Nickel	23.7 (2.3)	6010B		1	SVD	07/14/12 15:25	2.34	100	CG21311
Selenium	ND (4.7)	6010B		1	SVD	07/14/12 15:25	2.34	100	CG21311
Silver	ND (0.47)	6010B		1	SVD	07/14/12 15:25	2.34	100	CG21311
Thallium	ND (4.7)	6010B		1	SVD	07/14/12 15:25	2.34	100	CG21311
Zinc	41.8 (2.3)	6010B		1	SVD	07/14/12 15:25	2.34	100	CG21311





*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Till  
Date Sampled: 07/11/12 14:10  
Percent Solids: 91  
Initial Volume: 24.7  
Final Volume: 15  
Extraction Method: 5035

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-02  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Methanol**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0766)	0.0067		1	07/18/12 13:33	CVG0133	CG21822
1,1,1-Trichloroethane	ND (0.0383)	0.0067		1	07/18/12 13:33	CVG0133	CG21822
1,1,2,2-Tetrachloroethane	ND (0.0383)	0.0104		1	07/18/12 13:33	CVG0133	CG21822
1,1,2-Trichloroethane	ND (0.0383)	0.0096		1	07/18/12 13:33	CVG0133	CG21822
1,1-Dichloroethane	ND (0.0383)	0.0061		1	07/18/12 13:33	CVG0133	CG21822
1,1-Dichloroethene	ND (0.0383)	0.0094		1	07/18/12 13:33	CVG0133	CG21822
<b>1,1-Dichloropropene</b>	<b>0.291</b> (0.0383)	0.0059		1	07/18/12 13:33	CVG0133	CG21822
1,2,3-Trichlorobenzene	ND (0.0383)	0.0128		1	07/18/12 13:33	CVG0133	CG21822
1,2,3-Trichloropropane	ND (0.0383)	0.0095		1	07/18/12 13:33	CVG0133	CG21822
1,2,4-Trichlorobenzene	ND (0.0383)	0.0084		1	07/18/12 13:33	CVG0133	CG21822
1,2,4-Trimethylbenzene	ND (0.0383)	0.0074		1	07/18/12 13:33	CVG0133	CG21822
1,2-Dibromo-3-Chloropropane	ND (0.230)	0.0766		1	07/18/12 13:33	CVG0133	CG21822
1,2-Dibromoethane	ND (0.0383)	0.0097		1	07/18/12 13:33	CVG0133	CG21822
1,2-Dichlorobenzene	ND (0.0383)	0.0054		1	07/18/12 13:33	CVG0133	CG21822
1,2-Dichloroethane	ND (0.0383)	0.0103		1	07/18/12 13:33	CVG0133	CG21822
1,2-Dichloropropane	ND (0.0383)	0.0100		1	07/18/12 13:33	CVG0133	CG21822
1,3,5-Trimethylbenzene	ND (0.0383)	0.0067		1	07/18/12 13:33	CVG0133	CG21822
1,3-Dichlorobenzene	ND (0.0383)	0.0048		1	07/18/12 13:33	CVG0133	CG21822
1,3-Dichloropropane	ND (0.0383)	0.0086		1	07/18/12 13:33	CVG0133	CG21822
1,4-Dichlorobenzene	ND (0.0383)	0.0102		1	07/18/12 13:33	CVG0133	CG21822
1,4-Dioxane - Screen	ND (3.83)	1.28		1	07/18/12 13:33	CVG0133	CG21822
1-Chlorohexane	ND (0.0383)	0.0073		1	07/18/12 13:33	CVG0133	CG21822
2,2-Dichloropropane	ND (0.0766)	0.0131		1	07/18/12 13:33	CVG0133	CG21822
2-Butanone	ND (0.958)	0.221		1	07/18/12 13:33	CVG0133	CG21822
2-Chlorotoluene	ND (0.0383)	0.0108		1	07/18/12 13:33	CVG0133	CG21822
2-Hexanone	ND (0.383)	0.0660		1	07/18/12 13:33	CVG0133	CG21822
4-Chlorotoluene	ND (0.0383)	0.0050		1	07/18/12 13:33	CVG0133	CG21822
4-Isopropyltoluene	ND (0.0383)	0.0068		1	07/18/12 13:33	CVG0133	CG21822
<b>4-Methyl-2-Pentanone</b>	<b>J 0.129</b> (0.383)	0.0461		1	07/18/12 13:33	CVG0133	CG21822
Acetone	ND (0.958)	0.284		1	07/18/12 13:33	CVG0133	CG21822
Benzene	ND (0.0383)	0.0062		1	07/18/12 13:33	CVG0133	CG21822



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Till  
Date Sampled: 07/11/12 14:10  
Percent Solids: 91  
Initial Volume: 24.7  
Final Volume: 15  
Extraction Method: 5035

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-02  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Methanol**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromobenzene	ND (0.0383)	0.0105		1	07/18/12 13:33	CVG0133	CG21822
Bromochloromethane	ND (0.0383)	0.0124		1	07/18/12 13:33	CVG0133	CG21822
Bromodichloromethane	ND (0.0383)	0.0053		1	07/18/12 13:33	CVG0133	CG21822
Bromoform	ND (0.0383)	0.0110		1	07/18/12 13:33	CVG0133	CG21822
<b>Bromomethane</b>	<b>0.388</b> (0.0766)	0.0256		1	07/18/12 13:33	CVG0133	CG21822
Carbon Disulfide	ND (0.0383)	0.0057		1	07/18/12 13:33	CVG0133	CG21822
<b>Carbon Tetrachloride</b>	<b>0.244</b> (0.0383)	0.0067		1	07/18/12 13:33	CVG0133	CG21822
Chlorobenzene	ND (0.0383)	0.0061		1	07/18/12 13:33	CVG0133	CG21822
Chloroethane	ND (0.0766)	0.0255		1	07/18/12 13:33	CVG0133	CG21822
<b>Chloroform</b>	<b>J 0.0207</b> (0.0383)	0.0079		1	07/18/12 13:33	CVG0133	CG21822
<b>Chloromethane</b>	<b>J 0.0161</b> (0.0766)	0.0097		1	07/18/12 13:33	CVG0133	CG21822
cis-1,2-Dichloroethene	ND (0.0383)	0.0095		1	07/18/12 13:33	CVG0133	CG21822
cis-1,3-Dichloropropene	ND (0.0383)	0.0087		1	07/18/12 13:33	CVG0133	CG21822
Dibromochloromethane	ND (0.0383)	0.0097		1	07/18/12 13:33	CVG0133	CG21822
Dibromomethane	ND (0.0383)	0.0121		1	07/18/12 13:33	CVG0133	CG21822
Dichlorodifluoromethane	ND (0.0383)	0.0067		1	07/18/12 13:33	CVG0133	CG21822
Diethyl Ether	ND (0.0383)	0.0097		1	07/18/12 13:33	CVG0133	CG21822
Di-isopropyl ether	ND (0.0383)	0.0072		1	07/18/12 13:33	CVG0133	CG21822
Ethyl tertiary-butyl ether	ND (0.0383)	0.0097		1	07/18/12 13:33	CVG0133	CG21822
Ethylbenzene	ND (0.0383)	0.0050		1	07/18/12 13:33	CVG0133	CG21822
Hexachlorobutadiene	ND (0.0383)	0.0128		1	07/18/12 13:33	CVG0133	CG21822
Isopropylbenzene	ND (0.0383)	0.0067		1	07/18/12 13:33	CVG0133	CG21822
Methyl tert-Butyl Ether	ND (0.0383)	0.0061		1	07/18/12 13:33	CVG0133	CG21822
Methylene Chloride	ND (0.192)	0.0100		1	07/18/12 13:33	CVG0133	CG21822
<b>Naphthalene</b>	<b>0.187</b> (0.0383)	0.0100		1	07/18/12 13:33	CVG0133	CG21822
n-Butylbenzene	ND (0.0383)	0.0094		1	07/18/12 13:33	CVG0133	CG21822
n-Propylbenzene	ND (0.0383)	0.0093		1	07/18/12 13:33	CVG0133	CG21822
sec-Butylbenzene	ND (0.0383)	0.0051		1	07/18/12 13:33	CVG0133	CG21822
Styrene	ND (0.0383)	0.0051		1	07/18/12 13:33	CVG0133	CG21822
tert-Butylbenzene	ND (0.0383)	0.0090		1	07/18/12 13:33	CVG0133	CG21822
Tertiary-amyl methyl ether	ND (0.0383)	0.0055		1	07/18/12 13:33	CVG0133	CG21822



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Till  
Date Sampled: 07/11/12 14:10  
Percent Solids: 91  
Initial Volume: 24.7  
Final Volume: 15  
Extraction Method: 5035

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-02  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Methanol**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrachloroethene	ND (0.0383)	0.0128		1	07/18/12 13:33	CVG0133	CG21822
Tetrahydrofuran	ND (0.383)	0.0988		1	07/18/12 13:33	CVG0133	CG21822
Toluene	ND (0.0383)	0.0097		1	07/18/12 13:33	CVG0133	CG21822
trans-1,2-Dichloroethene	ND (0.0383)	0.0126		1	07/18/12 13:33	CVG0133	CG21822
trans-1,3-Dichloropropene	ND (0.0383)	0.0118		1	07/18/12 13:33	CVG0133	CG21822
Trichloroethene	ND (0.0383)	0.0079		1	07/18/12 13:33	CVG0133	CG21822
Trichlorofluoromethane	ND (0.0383)	0.0101		1	07/18/12 13:33	CVG0133	CG21822
Vinyl Acetate	ND (0.192)	0.0079		1	07/18/12 13:33	CVG0133	CG21822
Vinyl Chloride	ND (0.0383)	0.0126		1	07/18/12 13:33	CVG0133	CG21822
Xylene O	ND (0.0383)	0.0074		1	07/18/12 13:33	CVG0133	CG21822
Xylene P,M	ND (0.0766)	0.0149		1	07/18/12 13:33	CVG0133	CG21822
Xylenes (Total)	ND (0.115)			1	07/18/12 13:33		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	183 %	SC	70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	178 %	SC	70-130
<i>Surrogate: Dibromofluoromethane</i>	172 %	SC	70-130
<i>Surrogate: Toluene-d8</i>	164 %	SC	70-130



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Till  
Date Sampled: 07/11/12 14:10  
Percent Solids: 91  
Initial Volume: 19.6  
Final Volume: 10  
Extraction Method: 3540

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-02  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ML  
Prepared: 7/16/12 18:00

**8082 Polychlorinated Biphenyls (PCB)**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0561)		1	07/17/12 17:51		CG21918
Aroclor 1221	ND (0.0561)		1	07/17/12 17:51		CG21918
Aroclor 1232	ND (0.0561)		1	07/17/12 17:51		CG21918
Aroclor 1242	ND (0.0561)		1	07/17/12 17:51		CG21918
Aroclor 1248	ND (0.0561)		1	07/17/12 17:51		CG21918
Aroclor 1254	ND (0.0561)		1	07/17/12 17:51		CG21918
Aroclor 1260	ND (0.0561)		1	07/17/12 17:51		CG21918
Aroclor 1262	ND (0.0561)		1	07/17/12 17:51		CG21918
Aroclor 1268	ND (0.0561)		1	07/17/12 17:51		CG21918

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	73 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	92 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	108 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	113 %		30-150



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Till  
Date Sampled: 07/11/12 14:10  
Percent Solids: 91  
Initial Volume: 19.6  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-02  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ML  
Prepared: 7/12/12 16:45

**8100M Total Petroleum Hydrocarbons**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (42.0)		1	07/14/12 22:04	CVG0097	CG21118
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>113 %</i>		<i>40-140</i>			



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
 Client Project ID: Building 990  
 Client Sample ID: Composite Till  
 Date Sampled: 07/11/12 14:10  
 Percent Solids: 91  
 Initial Volume: 15.1  
 Final Volume: 0.5  
 Extraction Method: 3546

ESS Laboratory Work Order: 1207138  
 ESS Laboratory Sample ID: 1207138-02  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: IBM  
 Prepared: 7/12/12 16:45

**8270C Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
1,2,4-Trichlorobenzene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
1,2-Dichlorobenzene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
1,3-Dichlorobenzene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
1,4-Dichlorobenzene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
2,3,4,6-Tetrachlorophenol	ND (1.82)		1	07/13/12 20:21	CVG0087	CG21124
2,4,5-Trichlorophenol	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
2,4,6-Trichlorophenol	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
2,4-Dichlorophenol	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
2,4-Dimethylphenol	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
2,4-Dinitrophenol	ND (1.82)		1	07/13/12 20:21	CVG0087	CG21124
2,4-Dinitrotoluene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
2,6-Dinitrotoluene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
2-Chloronaphthalene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
2-Chlorophenol	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
2-Methylnaphthalene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
2-Methylphenol	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
2-Nitroaniline	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
2-Nitrophenol	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
3,3'-Dichlorobenzidine	ND (0.728)		1	07/13/12 20:21	CVG0087	CG21124
3+4-Methylphenol	ND (0.728)		1	07/13/12 20:21	CVG0087	CG21124
3-Nitroaniline	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
4,6-Dinitro-2-Methylphenol	ND (1.82)		1	07/13/12 20:21	CVG0087	CG21124
4-Bromophenyl-phenylether	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
4-Chloro-3-Methylphenol	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
4-Chloroaniline	ND (0.728)		1	07/13/12 20:21	CVG0087	CG21124
4-Chloro-phenyl-phenyl ether	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
4-Nitroaniline	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
4-Nitrophenol	ND (1.82)		1	07/13/12 20:21	CVG0087	CG21124
Acenaphthene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Acenaphthylene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Till  
Date Sampled: 07/11/12 14:10  
Percent Solids: 91  
Initial Volume: 15.1  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-02  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: IBM  
Prepared: 7/12/12 16:45

**8270C Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Acetophenone	ND (0.728)		1	07/13/12 20:21	CVG0087	CG21124
Aniline	ND (0.728)		1	07/13/12 20:21	CVG0087	CG21124
Anthracene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Azobenzene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Benzo(a)anthracene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Benzo(a)pyrene	ND (0.182)		1	07/13/12 20:21	CVG0087	CG21124
Benzo(b)fluoranthene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Benzo(g,h,i)perylene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Benzo(k)fluoranthene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Benzoic Acid	ND (1.82)		1	07/13/12 20:21	CVG0087	CG21124
Benzyl Alcohol	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
bis(2-Chloroethoxy)methane	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
bis(2-Chloroethyl)ether	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
bis(2-chloroisopropyl)Ether	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
bis(2-Ethylhexyl)phthalate	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Butylbenzylphthalate	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Carbazole	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Chrysene	ND (0.182)		1	07/13/12 20:21	CVG0087	CG21124
Dibenzo(a,h)Anthracene	ND (0.182)		1	07/13/12 20:21	CVG0087	CG21124
Dibenzofuran	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Diethylphthalate	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Dimethylphthalate	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Di-n-butylphthalate	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Di-n-octylphthalate	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Fluoranthene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Fluorene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Hexachlorobenzene	ND (0.182)		1	07/13/12 20:21	CVG0087	CG21124
Hexachlorobutadiene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Hexachlorocyclopentadiene	ND (1.82)		1	07/13/12 20:21	CVG0087	CG21124
Hexachloroethane	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Indeno(1,2,3-cd)Pyrene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
 Client Project ID: Building 990  
 Client Sample ID: Composite Till  
 Date Sampled: 07/11/12 14:10  
 Percent Solids: 91  
 Initial Volume: 15.1  
 Final Volume: 0.5  
 Extraction Method: 3546

ESS Laboratory Work Order: 1207138  
 ESS Laboratory Sample ID: 1207138-02  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: IBM  
 Prepared: 7/12/12 16:45

**8270C Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Isophorone	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Naphthalene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Nitrobenzene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
N-Nitrosodimethylamine	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
N-Nitroso-Di-n-Propylamine	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
N-nitrosodiphenylamine	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Pentachlorophenol	ND (1.82)		1	07/13/12 20:21	CVG0087	CG21124
Phenanthrene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Phenol	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Pyrene	ND (0.364)		1	07/13/12 20:21	CVG0087	CG21124
Pyridine	ND (1.82)		1	07/13/12 20:21	CVG0087	CG21124

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	61 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	95 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	70 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	66 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	66 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	62 %		30-130
<i>Surrogate: Phenol-d6</i>	70 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	83 %		30-130





*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990  
Client Sample ID: Composite Till  
Date Sampled: 07/11/12 14:10  
Percent Solids: 91

ESS Laboratory Work Order: 1207138  
ESS Laboratory Sample ID: 1207138-02  
Sample Matrix: Soil

**Classical Chemistry**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
<b>Conductivity</b>	<b>WL 20 (5)</b>	9050A		1	DPS	07/13/12 14:50	umhos/cm	CG21315
Free Liquid	ND (0.3)	9095A		1	DPS	07/13/12 14:40	ml/5 min	CG21312
Reactive Cyanide	ND (2.0)	7.3.3.2		1	DPS	07/14/12 12:30	mg/kg	CG21402
Reactive Sulfide	ND (2.0)	7.3.4.1		1	DPS	07/14/12 12:30	mg/kg	CG21402
<b>Sieve Analysis</b>	<b>See Attached (N/A)</b>							



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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1311/6000/7000 TCLP Metals

**Batch CG21713 - 3005A\_TCLP**

**Blank**

Arsenic	ND	0.050	mg/L							
Barium	ND	0.050	mg/L							
Cadmium	ND	0.0050	mg/L							
Chromium	ND	0.020	mg/L							
Lead	0.026	0.020	mg/L							
Selenium	ND	0.050	mg/L							
Silver	ND	0.010	mg/L							

**LCS**

Arsenic	0.523	0.050	mg/L	0.5000		105	80-120			
Barium	0.540	0.050	mg/L	0.5000		108	80-120			
Cadmium	0.274	0.0050	mg/L	0.2500		110	80-120			
Chromium	0.521	0.020	mg/L	0.5000		104	80-120			
Lead	0.534	0.020	mg/L	0.5000		107	80-120			
Selenium	1.14	0.050	mg/L	1.000		114	80-120			
Silver	0.287	0.010	mg/L	0.2500		115	80-120			

**LCS Dup**

Arsenic	0.516	0.050	mg/L	0.5000		103	80-120	1	20	
Barium	0.538	0.050	mg/L	0.5000		108	80-120	0.2	20	
Cadmium	0.269	0.0050	mg/L	0.2500		108	80-120	2	20	
Chromium	0.521	0.020	mg/L	0.5000		104	80-120	0.08	20	
Lead	0.521	0.020	mg/L	0.5000		104	80-120	2	20	
Selenium	1.11	0.050	mg/L	1.000		111	80-120	2	20	
Silver	0.287	0.010	mg/L	0.2500		115	80-120	0.2	20	

**Batch CG21714 - 245.1/7470A**

**Blank**

Mercury	ND	0.00050	mg/L							
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**LCS**

Mercury	0.00618	0.00050	mg/L	0.006000		103	80-120			
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**LCS Dup**

Mercury	0.00642	0.00050	mg/L	0.006000		107	80-120	4	20	
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3050B/6000/7000 Total Metals

**Batch CG21309 - 7471A**

**Blank**

Mercury	ND	0.033	mg/kg wet							
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**LCS**

Mercury	4.84	0.798	mg/kg wet	3.730		130	80-120			B+
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**LCS Dup**

Mercury	4.17	0.798	mg/kg wet	3.730		112	80-120	15	20	
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**Batch CG21311 - 3050B**

**Blank**



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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3050B/6000/7000 Total Metals

**Batch CG21311 - 3050B**

Antimony	ND	5.0	mg/kg wet							
Arsenic	ND	2.5	mg/kg wet							
Barium	ND	2.5	mg/kg wet							
Beryllium	ND	0.10	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.0	mg/kg wet							
Copper	ND	2.5	mg/kg wet							
Lead	ND	5.0	mg/kg wet							
Nickel	ND	2.5	mg/kg wet							
Selenium	ND	5.0	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	5.0	mg/kg wet							
Zinc	ND	2.5	mg/kg wet							

**LCS**

Antimony	86.1	18.9	mg/kg wet	93.30		92	80-120			
Arsenic	78.9	9.4	mg/kg wet	94.50		83	80-120			
Barium	149	9.4	mg/kg wet	167.0		89	80-120			
Beryllium	50.3	0.40	mg/kg wet	57.60		87	80-120			
Cadmium	52.2	1.90	mg/kg wet	60.50		86	80-120			
Chromium	62.5	3.8	mg/kg wet	70.40		89	80-120			
Copper	72.3	9.4	mg/kg wet	79.60		91	80-120			
Lead	78.0	18.9	mg/kg wet	91.80		85	80-120			
Nickel	51.5	9.4	mg/kg wet	57.60		89	80-120			
Selenium	73.1	18.9	mg/kg wet	86.40		85	80-120			
Silver	30.2	1.90	mg/kg wet	34.40		88	80-120			
Thallium	121	18.9	mg/kg wet	120.0		101	80-120			
Zinc	120	9.4	mg/kg wet	140.0		85	80-120			

**LCS Dup**

Antimony	89.9	18.9	mg/kg wet	93.30		96	80-120	4	20	
Arsenic	85.2	9.4	mg/kg wet	94.50		90	80-120	8	20	
Barium	162	9.4	mg/kg wet	167.0		97	80-120	8	20	
Beryllium	54.4	0.40	mg/kg wet	57.60		94	80-120	8	20	
Cadmium	57.2	1.90	mg/kg wet	60.50		95	80-120	9	20	
Chromium	68.3	3.8	mg/kg wet	70.40		97	80-120	9	20	
Copper	78.5	9.4	mg/kg wet	79.60		99	80-120	8	20	
Lead	83.9	18.9	mg/kg wet	91.80		91	80-120	7	20	
Nickel	56.7	9.4	mg/kg wet	57.60		98	80-120	10	20	
Selenium	82.3	18.9	mg/kg wet	86.40		95	80-120	12	20	
Silver	33.4	1.90	mg/kg wet	34.40		97	80-120	10	20	
Thallium	128	18.9	mg/kg wet	120.0		107	80-120	6	20	
Zinc	130	9.4	mg/kg wet	140.0		93	80-120	9	20	

**Reference**

Cadmium	433	3.05	mg/kg wet	500.0		87	70-130			
Chromium	458	6.0	mg/kg wet	500.0		92	70-130			
Copper	461	15.1	mg/kg wet	500.0		92	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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3050B/6000/7000 Total Metals

**Batch CG21311 - 3050B**

Lead	465	30.3	mg/kg wet	500.0		93	70-130			
Nickel	469	15.1	mg/kg wet	500.0		94	70-130			
Silver	423	3.05	mg/kg wet	500.0		85	70-130			
Zinc	417	15.1	mg/kg wet	500.0		83	70-130			

5035/8260B Volatile Organic Compounds / Methanol

**Batch CG21822 - 5035**

**Blank**

1,1,1,2-Tetrachloroethane	ND	0.100	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0500	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0500	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0500	mg/kg wet							
1,1-Dichloroethane	ND	0.0500	mg/kg wet							
1,1-Dichloroethene	ND	0.0500	mg/kg wet							
1,1-Dichloropropene	ND	0.0500	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0500	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0500	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0500	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0500	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.300	mg/kg wet							
1,2-Dibromoethane	ND	0.0500	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,2-Dichloroethane	ND	0.0500	mg/kg wet							
1,2-Dichloropropane	ND	0.0500	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0500	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,3-Dichloropropane	ND	0.0500	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,4-Dioxane - Screen	ND	5.00	mg/kg wet							
1-Chlorohexane	ND	0.0500	mg/kg wet							
2,2-Dichloropropane	ND	0.100	mg/kg wet							
2-Butanone	ND	1.25	mg/kg wet							
2-Chlorotoluene	ND	0.0500	mg/kg wet							
2-Hexanone	ND	0.500	mg/kg wet							
4-Chlorotoluene	ND	0.0500	mg/kg wet							
4-Isopropyltoluene	ND	0.0500	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.500	mg/kg wet							
Acetone	ND	1.25	mg/kg wet							
Benzene	ND	0.0500	mg/kg wet							
Bromobenzene	ND	0.0500	mg/kg wet							
Bromochloromethane	ND	0.0500	mg/kg wet							
Bromodichloromethane	ND	0.0500	mg/kg wet							
Bromoform	ND	0.0500	mg/kg wet							
Bromomethane	ND	0.100	mg/kg wet							
Carbon Disulfide	ND	0.0500	mg/kg wet							



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

**Batch CG21822 - 5035**

Carbon Tetrachloride	ND	0.0500	mg/kg wet							
Chlorobenzene	ND	0.0500	mg/kg wet							
Chloroethane	ND	0.100	mg/kg wet							
Chloroform	ND	0.0500	mg/kg wet							
Chloromethane	ND	0.100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0500	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0500	mg/kg wet							
Dibromochloromethane	ND	0.0500	mg/kg wet							
Dibromomethane	ND	0.0500	mg/kg wet							
Dichlorodifluoromethane	ND	0.0500	mg/kg wet							
Diethyl Ether	ND	0.0500	mg/kg wet							
Di-isopropyl ether	ND	0.0500	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0500	mg/kg wet							
Ethylbenzene	ND	0.0500	mg/kg wet							
Hexachlorobutadiene	ND	0.0500	mg/kg wet							
Isopropylbenzene	ND	0.0500	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0500	mg/kg wet							
Methylene Chloride	ND	0.250	mg/kg wet							
Naphthalene	ND	0.0500	mg/kg wet							
n-Butylbenzene	ND	0.0500	mg/kg wet							
n-Propylbenzene	ND	0.0500	mg/kg wet							
sec-Butylbenzene	ND	0.0500	mg/kg wet							
Styrene	ND	0.0500	mg/kg wet							
tert-Butylbenzene	ND	0.0500	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0500	mg/kg wet							
Tetrachloroethene	ND	0.0500	mg/kg wet							
Tetrahydrofuran	ND	0.500	mg/kg wet							
Toluene	ND	0.0500	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0500	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0500	mg/kg wet							
Trichloroethene	ND	0.0500	mg/kg wet							
Vinyl Acetate	ND	0.250	mg/kg wet							
Vinyl Chloride	ND	0.0500	mg/kg wet							
Xylene O	ND	0.0500	mg/kg wet							
Xylene P,M	ND	0.100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	2.55		mg/kg wet	2.500		102	70-130			
Surrogate: 4-Bromofluorobenzene	2.42		mg/kg wet	2.500		97	70-130			
Surrogate: Dibromofluoromethane	2.37		mg/kg wet	2.500		95	70-130			
Surrogate: Toluene-d8	2.32		mg/kg wet	2.500		93	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	2.59	0.100	mg/kg wet	2.500		104	70-130			
1,1,1-Trichloroethane	2.68	0.0500	mg/kg wet	2.500		107	70-130			
1,1,2,2-Tetrachloroethane	2.28	0.0500	mg/kg wet	2.500		91	70-130			
1,1,2-Trichloroethane	2.17	0.0500	mg/kg wet	2.500		87	70-130			
1,1-Dichloroethane	2.27	0.0500	mg/kg wet	2.500		91	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

**Batch CG21822 - 5035**

1,1-Dichloroethene	2.62	0.0500	mg/kg wet	2.500		105	70-130			
1,1-Dichloropropene	2.52	0.0500	mg/kg wet	2.500		101	70-130			
1,2,3-Trichlorobenzene	3.02	0.0500	mg/kg wet	2.500		121	70-130			
1,2,3-Trichloropropane	2.42	0.0500	mg/kg wet	2.500		97	70-130			
1,2,4-Trichlorobenzene	2.93	0.0500	mg/kg wet	2.500		117	70-130			
1,2,4-Trimethylbenzene	2.65	0.0500	mg/kg wet	2.500		106	70-130			
1,2-Dibromo-3-Chloropropane	2.58	0.300	mg/kg wet	2.500		103	70-130			
1,2-Dibromoethane	2.49	0.0500	mg/kg wet	2.500		99	70-130			
1,2-Dichlorobenzene	2.33	0.0500	mg/kg wet	2.500		93	70-130			
1,2-Dichloroethane	2.78	0.0500	mg/kg wet	2.500		111	70-130			
1,2-Dichloropropane	2.16	0.0500	mg/kg wet	2.500		87	70-130			
1,3,5-Trimethylbenzene	2.75	0.0500	mg/kg wet	2.500		110	70-130			
1,3-Dichlorobenzene	2.28	0.0500	mg/kg wet	2.500		91	70-130			
1,3-Dichloropropane	2.44	0.0500	mg/kg wet	2.500		98	70-130			
1,4-Dichlorobenzene	2.49	0.0500	mg/kg wet	2.500		100	70-130			
1,4-Dioxane - Screen	48.5	5.00	mg/kg wet	50.00		97	44-241			
1-Chlorohexane	3.12	0.0500	mg/kg wet	2.500		125	70-130			
2,2-Dichloropropane	2.98	0.100	mg/kg wet	2.500		119	70-130			
2-Butanone	13.7	1.25	mg/kg wet	12.50		109	70-130			
2-Chlorotoluene	2.28	0.0500	mg/kg wet	2.500		91	70-130			
2-Hexanone	12.2	0.500	mg/kg wet	12.50		97	70-130			
4-Chlorotoluene	2.32	0.0500	mg/kg wet	2.500		93	70-130			
4-Isopropyltoluene	2.66	0.0500	mg/kg wet	2.500		106	70-130			
4-Methyl-2-Pentanone	11.7	0.500	mg/kg wet	12.50		94	70-130			
Acetone	18.7	1.25	mg/kg wet	12.50		149	70-130			B+
Benzene	2.36	0.0500	mg/kg wet	2.500		95	70-130			
Bromobenzene	2.42	0.0500	mg/kg wet	2.500		97	70-130			
Bromochloromethane	2.28	0.0500	mg/kg wet	2.500		91	70-130			
Bromodichloromethane	2.54	0.0500	mg/kg wet	2.500		102	70-130			
Bromoform	2.73	0.0500	mg/kg wet	2.500		109	70-130			
Bromomethane	2.32	0.100	mg/kg wet	2.500		93	70-130			
Carbon Disulfide	2.43	0.0500	mg/kg wet	2.500		97	70-130			
Carbon Tetrachloride	3.00	0.0500	mg/kg wet	2.500		120	70-130			
Chlorobenzene	2.26	0.0500	mg/kg wet	2.500		90	70-130			
Chloroethane	2.54	0.100	mg/kg wet	2.500		102	70-130			
Chloroform	2.58	0.0500	mg/kg wet	2.500		103	70-130			
Chloromethane	1.81	0.100	mg/kg wet	2.500		72	70-130			
cis-1,2-Dichloroethene	2.57	0.0500	mg/kg wet	2.500		103	70-130			
cis-1,3-Dichloropropene	2.46	0.0500	mg/kg wet	2.500		98	70-130			
Dibromochloromethane	2.73	0.0500	mg/kg wet	2.500		109	70-130			
Dibromomethane	2.35	0.0500	mg/kg wet	2.500		94	70-130			
Dichlorodifluoromethane	2.55	0.0500	mg/kg wet	2.500		102	70-130			
Diethyl Ether	2.29	0.0500	mg/kg wet	2.500		92	70-130			
Di-isopropyl ether	2.24	0.0500	mg/kg wet	2.500		89	70-130			
Ethyl tertiary-butyl ether	2.57	0.0500	mg/kg wet	2.500		103	70-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

**Batch CG21822 - 5035**

Ethylbenzene	2.63	0.0500	mg/kg wet	2.500		105	70-130			
Hexachlorobutadiene	3.02	0.0500	mg/kg wet	2.500		121	70-130			
Isopropylbenzene	2.34	0.0500	mg/kg wet	2.500		94	70-130			
Methyl tert-Butyl Ether	2.52	0.0500	mg/kg wet	2.500		101	70-130			
Methylene Chloride	2.66	0.250	mg/kg wet	2.500		106	70-130			
Naphthalene	2.71	0.0500	mg/kg wet	2.500		108	70-130			
n-Butylbenzene	2.98	0.0500	mg/kg wet	2.500		119	70-130			
n-Propylbenzene	2.49	0.0500	mg/kg wet	2.500		100	70-130			
sec-Butylbenzene	2.56	0.0500	mg/kg wet	2.500		102	70-130			
Styrene	2.47	0.0500	mg/kg wet	2.500		99	70-130			
tert-Butylbenzene	2.74	0.0500	mg/kg wet	2.500		110	70-130			
Tertiary-amyl methyl ether	2.54	0.0500	mg/kg wet	2.500		102	70-130			
Tetrachloroethene	2.16	0.0500	mg/kg wet	2.500		86	70-130			
Tetrahydrofuran	2.13	0.500	mg/kg wet	2.500		85	70-130			
Toluene	2.43	0.0500	mg/kg wet	2.500		97	70-130			
trans-1,2-Dichloroethene	2.53	0.0500	mg/kg wet	2.500		101	70-130			
trans-1,3-Dichloropropene	2.46	0.0500	mg/kg wet	2.500		98	70-130			
Trichloroethene	2.34	0.0500	mg/kg wet	2.500		93	70-130			
Vinyl Acetate	3.43	0.250	mg/kg wet	2.500		137	70-130			B+
Vinyl Chloride	2.63	0.0500	mg/kg wet	2.500		105	70-130			
Xylene O	2.37	0.0500	mg/kg wet	2.500		95	70-130			
Xylene P,M	4.96	0.100	mg/kg wet	5.000		99	70-130			
Surrogate: 1,2-Dichloroethane-d4	2.73		mg/kg wet	2.500		109	70-130			
Surrogate: 4-Bromofluorobenzene	2.52		mg/kg wet	2.500		101	70-130			
Surrogate: Dibromofluoromethane	2.36		mg/kg wet	2.500		94	70-130			
Surrogate: Toluene-d8	2.42		mg/kg wet	2.500		97	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	2.62	0.100	mg/kg wet	2.500		105	70-130	1	25	
1,1,1-Trichloroethane	2.80	0.0500	mg/kg wet	2.500		112	70-130	4	25	
1,1,2,2-Tetrachloroethane	2.25	0.0500	mg/kg wet	2.500		90	70-130	1	25	
1,1,2-Trichloroethane	2.20	0.0500	mg/kg wet	2.500		88	70-130	1	25	
1,1-Dichloroethane	2.38	0.0500	mg/kg wet	2.500		95	70-130	5	25	
1,1-Dichloroethene	2.73	0.0500	mg/kg wet	2.500		109	70-130	4	25	
1,1-Dichloropropene	2.60	0.0500	mg/kg wet	2.500		104	70-130	4	25	
1,2,3-Trichlorobenzene	3.04	0.0500	mg/kg wet	2.500		121	70-130	0.5	25	
1,2,3-Trichloropropane	2.28	0.0500	mg/kg wet	2.500		91	70-130	6	25	
1,2,4-Trichlorobenzene	3.08	0.0500	mg/kg wet	2.500		123	70-130	5	25	
1,2,4-Trimethylbenzene	2.69	0.0500	mg/kg wet	2.500		108	70-130	1	25	
1,2-Dibromo-3-Chloropropane	2.63	0.300	mg/kg wet	2.500		105	70-130	2	25	
1,2-Dibromoethane	2.50	0.0500	mg/kg wet	2.500		100	70-130	0.7	25	
1,2-Dichlorobenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130	2	25	
1,2-Dichloroethane	2.83	0.0500	mg/kg wet	2.500		113	70-130	2	25	
1,2-Dichloropropane	2.28	0.0500	mg/kg wet	2.500		91	70-130	5	25	
1,3,5-Trimethylbenzene	2.77	0.0500	mg/kg wet	2.500		111	70-130	0.8	25	
1,3-Dichlorobenzene	2.33	0.0500	mg/kg wet	2.500		93	70-130	2	25	



*CERTIFICATE OF ANALYSIS*

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**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

**Batch CG21822 - 5035**

1,3-Dichloropropane	2.43	0.0500	mg/kg wet	2.500		97	70-130	0.6	25	
1,4-Dichlorobenzene	2.52	0.0500	mg/kg wet	2.500		101	70-130	1	25	
1,4-Dioxane - Screen	52.5	5.00	mg/kg wet	50.00		105	44-241	8	200	
1-Chlorohexane	3.08	0.0500	mg/kg wet	2.500		123	70-130	1	25	
2,2-Dichloropropane	3.09	0.100	mg/kg wet	2.500		123	70-130	3	25	
2-Butanone	10.3	1.25	mg/kg wet	12.50		82	70-130	28	25	D+
2-Chlorotoluene	2.22	0.0500	mg/kg wet	2.500		89	70-130	3	25	
2-Hexanone	11.3	0.500	mg/kg wet	12.50		90	70-130	8	25	
4-Chlorotoluene	2.36	0.0500	mg/kg wet	2.500		94	70-130	2	25	
4-Isopropyltoluene	2.70	0.0500	mg/kg wet	2.500		108	70-130	1	25	
4-Methyl-2-Pentanone	11.6	0.500	mg/kg wet	12.50		93	70-130	1	25	
Acetone	13.1	1.25	mg/kg wet	12.50		105	70-130	35	25	D+
Benzene	2.43	0.0500	mg/kg wet	2.500		97	70-130	3	25	
Bromobenzene	2.47	0.0500	mg/kg wet	2.500		99	70-130	2	25	
Bromochloromethane	2.40	0.0500	mg/kg wet	2.500		96	70-130	5	25	
Bromodichloromethane	2.66	0.0500	mg/kg wet	2.500		106	70-130	5	25	
Bromoform	2.72	0.0500	mg/kg wet	2.500		109	70-130	0.6	25	
Bromomethane	2.39	0.100	mg/kg wet	2.500		96	70-130	3	25	
Carbon Disulfide	2.49	0.0500	mg/kg wet	2.500		100	70-130	3	25	
Carbon Tetrachloride	3.14	0.0500	mg/kg wet	2.500		126	70-130	4	25	
Chlorobenzene	2.30	0.0500	mg/kg wet	2.500		92	70-130	2	25	
Chloroethane	2.71	0.100	mg/kg wet	2.500		108	70-130	6	25	
Chloroform	2.68	0.0500	mg/kg wet	2.500		107	70-130	4	25	
Chloromethane	1.95	0.100	mg/kg wet	2.500		78	70-130	7	25	
cis-1,2-Dichloroethene	2.63	0.0500	mg/kg wet	2.500		105	70-130	2	25	
cis-1,3-Dichloropropene	2.51	0.0500	mg/kg wet	2.500		100	70-130	2	25	
Dibromochloromethane	2.79	0.0500	mg/kg wet	2.500		112	70-130	2	25	
Dibromomethane	2.35	0.0500	mg/kg wet	2.500		94	70-130	0.09	25	
Dichlorodifluoromethane	2.56	0.0500	mg/kg wet	2.500		102	70-130	0.2	25	
Diethyl Ether	2.23	0.0500	mg/kg wet	2.500		89	70-130	3	25	
Di-isopropyl ether	2.32	0.0500	mg/kg wet	2.500		93	70-130	4	25	
Ethyl tertiary-butyl ether	2.61	0.0500	mg/kg wet	2.500		105	70-130	2	25	
Ethylbenzene	2.71	0.0500	mg/kg wet	2.500		108	70-130	3	25	
Hexachlorobutadiene	2.99	0.0500	mg/kg wet	2.500		120	70-130	0.9	25	
Isopropylbenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130	2	25	
Methyl tert-Butyl Ether	2.54	0.0500	mg/kg wet	2.500		102	70-130	0.6	25	
Methylene Chloride	2.67	0.250	mg/kg wet	2.500		107	70-130	0.4	25	
Naphthalene	2.78	0.0500	mg/kg wet	2.500		111	70-130	2	25	
n-Butylbenzene	2.96	0.0500	mg/kg wet	2.500		118	70-130	0.6	25	
n-Propylbenzene	2.58	0.0500	mg/kg wet	2.500		103	70-130	4	25	
sec-Butylbenzene	2.60	0.0500	mg/kg wet	2.500		104	70-130	1	25	
Styrene	2.53	0.0500	mg/kg wet	2.500		101	70-130	2	25	
tert-Butylbenzene	2.82	0.0500	mg/kg wet	2.500		113	70-130	3	25	
Tertiary-amyl methyl ether	2.56	0.0500	mg/kg wet	2.500		103	70-130	1	25	
Tetrachloroethene	2.19	0.0500	mg/kg wet	2.500		87	70-130	1	25	





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5035/8260B Volatile Organic Compounds / Methanol

**Batch CG21822 - 5035**

Tetrahydrofuran	1.95	0.500	mg/kg wet	2.500		78	70-130	9	25	
Toluene	2.48	0.0500	mg/kg wet	2.500		99	70-130	2	25	
trans-1,2-Dichloroethene	2.56	0.0500	mg/kg wet	2.500		102	70-130	1	25	
trans-1,3-Dichloropropene	2.50	0.0500	mg/kg wet	2.500		100	70-130	2	25	
Trichloroethene	2.45	0.0500	mg/kg wet	2.500		98	70-130	5	25	
Vinyl Acetate	2.87	0.250	mg/kg wet	2.500		115	70-130	18	25	
Vinyl Chloride	2.63	0.0500	mg/kg wet	2.500		105	70-130	0.2	25	
Xylene O	2.41	0.0500	mg/kg wet	2.500		96	70-130	2	25	
Xylene P,M	5.11	0.100	mg/kg wet	5.000		102	70-130	3	25	
Surrogate: 1,2-Dichloroethane-d4	2.77		mg/kg wet	2.500		111	70-130			
Surrogate: 4-Bromofluorobenzene	2.62		mg/kg wet	2.500		105	70-130			
Surrogate: Dibromofluoromethane	2.45		mg/kg wet	2.500		98	70-130			
Surrogate: Toluene-d8	2.46		mg/kg wet	2.500		98	70-130			

8082 Polychlorinated Biphenyls (PCB)

**Batch CG21918 - 3540**

<b>Blank</b>										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							

Surrogate: Decachlorobiphenyl	0.0178		mg/kg wet	0.02500		71	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0206		mg/kg wet	0.02500		82	30-150			
Surrogate: Tetrachloro-m-xylene	0.0235		mg/kg wet	0.02500		94	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0239		mg/kg wet	0.02500		96	30-150			

<b>LCS</b>										
Aroclor 1016	0.508	0.0500	mg/kg wet	0.5000		102	40-140			
Aroclor 1260	0.500	0.0500	mg/kg wet	0.5000		100	40-140			

Surrogate: Decachlorobiphenyl	0.0194		mg/kg wet	0.02500		78	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0226		mg/kg wet	0.02500		90	30-150			
Surrogate: Tetrachloro-m-xylene	0.0243		mg/kg wet	0.02500		97	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0240		mg/kg wet	0.02500		96	30-150			

<b>LCS Dup</b>										
Aroclor 1016	0.525	0.0500	mg/kg wet	0.5000		105	40-140	3	50	
Aroclor 1260	0.509	0.0500	mg/kg wet	0.5000		102	40-140	2	50	

Surrogate: Decachlorobiphenyl	0.0194		mg/kg wet	0.02500		78	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0227		mg/kg wet	0.02500		91	30-150			



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**8082 Polychlorinated Biphenyls (PCB)**

**Batch CG21918 - 3540**

Surrogate: Tetrachloro-m-xylene	0.0246		mg/kg wet	0.02500		99	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0248		mg/kg wet	0.02500		99	30-150			

**8100M Total Petroleum Hydrocarbons**

**Batch CG21118 - 3546**

**Blank**

Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							

Surrogate: O-Terphenyl	5.05		mg/kg wet	5.000		101	40-140			
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**LCS**

Decane (C10)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Docosane (C22)	3.0	0.2	mg/kg wet	2.500		121	40-140			
Dodecane (C12)	2.7	0.2	mg/kg wet	2.500		109	40-140			
Eicosane (C20)	3.0	0.2	mg/kg wet	2.500		119	40-140			
Hexacosane (C26)	3.0	0.2	mg/kg wet	2.500		121	40-140			
Hexadecane (C16)	2.9	0.2	mg/kg wet	2.500		116	40-140			
Nonadecane (C19)	2.7	0.2	mg/kg wet	2.500		110	40-140			
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		81	30-140			
Octacosane (C28)	3.0	0.2	mg/kg wet	2.500		122	40-140			
Octadecane (C18)	3.0	0.2	mg/kg wet	2.500		119	40-140			
Tetracosane (C24)	3.1	0.2	mg/kg wet	2.500		123	40-140			
Tetradecane (C14)	2.8	0.2	mg/kg wet	2.500		112	40-140			
Total Petroleum Hydrocarbons	45.1	37.5	mg/kg wet	35.00		129	40-140			
Triacontane (C30)	3.2	0.2	mg/kg wet	2.500		128	40-140			

Surrogate: O-Terphenyl	6.82		mg/kg wet	5.000		136	40-140			
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**LCS Dup**

Decane (C10)	1.8	0.2	mg/kg wet	2.500		70	40-140	34	50	
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		83	40-140	37	50	
Dodecane (C12)	1.8	0.2	mg/kg wet	2.500		74	40-140	39	50	
Eicosane (C20)	2.0	0.2	mg/kg wet	2.500		81	40-140	38	50	



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<b>8100M Total Petroleum Hydrocarbons</b>										
<b>Batch CG21118 - 3546</b>										
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		86	40-140	34	50	
Hexadecane (C16)	2.0	0.2	mg/kg wet	2.500		79	40-140	38	50	
Nonadecane (C19)	1.7	0.2	mg/kg wet	2.500		69	40-140	46	50	
Nonane (C9)	1.5	0.2	mg/kg wet	2.500		60	30-140	31	50	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		89	40-140	31	50	
Octadecane (C18)	2.0	0.2	mg/kg wet	2.500		81	40-140	39	50	
Tetracosane (C24)	2.1	0.2	mg/kg wet	2.500		85	40-140	36	50	
Tetradecane (C14)	1.9	0.2	mg/kg wet	2.500		78	40-140	36	50	
Total Petroleum Hydrocarbons	36.2	37.5	mg/kg wet	35.00		103	40-140	22	50	
Triacotane (C30)	2.4	0.2	mg/kg wet	2.500		96	40-140	29	50	

Surrogate: *O-Terphenyl* 4.78 mg/kg wet 5.000 96 40-140

**8270C Semi-Volatile Organic Compounds**

**Batch CG21124 - 3546**

<b>Blank</b>										
1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							



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8270C Semi-Volatile Organic Compounds

**Batch CG21124 - 3546**

Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	0.667	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Benzoic Acid	ND	1.67	mg/kg wet							
Benzyl Alcohol	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Carbazole	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.167	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet							
N-nitrosodiphenylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	1.87		mg/kg wet	3.333		56	30-130			



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**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270C Semi-Volatile Organic Compounds

**Batch CG21124 - 3546**

Surrogate: 2,4,6-Tribromophenol	4.08		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	3.19		mg/kg wet	5.000		64	30-130			
Surrogate: 2-Fluorobiphenyl	1.94		mg/kg wet	3.333		58	30-130			
Surrogate: 2-Fluorophenol	3.00		mg/kg wet	5.000		60	30-130			
Surrogate: Nitrobenzene-d5	1.88		mg/kg wet	3.333		56	30-130			
Surrogate: Phenol-d6	3.11		mg/kg wet	5.000		62	30-130			
Surrogate: p-Terphenyl-d14	2.54		mg/kg wet	3.333		76	30-130			

**LCS**

1,1-Biphenyl	1.89	0.333	mg/kg wet	3.333		57	40-140			
1,2,4-Trichlorobenzene	1.78	0.333	mg/kg wet	3.333		53	40-140			
1,2-Dichlorobenzene	1.75	0.333	mg/kg wet	3.333		53	40-140			
1,3-Dichlorobenzene	1.70	0.333	mg/kg wet	3.333		51	40-140			
1,4-Dichlorobenzene	1.70	0.333	mg/kg wet	3.333		51	40-140			
2,3,4,6-Tetrachlorophenol	2.28	1.67	mg/kg wet	3.333		68	30-130			
2,4,5-Trichlorophenol	2.27	0.333	mg/kg wet	3.333		68	30-130			
2,4,6-Trichlorophenol	2.18	0.333	mg/kg wet	3.333		65	30-130			
2,4-Dichlorophenol	2.03	0.333	mg/kg wet	3.333		61	30-130			
2,4-Dimethylphenol	1.96	0.333	mg/kg wet	3.333		59	30-130			
2,4-Dinitrophenol	1.57	1.67	mg/kg wet	3.333		47	30-130			
2,4-Dinitrotoluene	2.06	0.333	mg/kg wet	3.333		62	40-140			
2,6-Dinitrotoluene	2.17	0.333	mg/kg wet	3.333		65	40-140			
2-Chloronaphthalene	1.78	0.333	mg/kg wet	3.333		53	40-140			
2-Chlorophenol	1.79	0.333	mg/kg wet	3.333		54	30-130			
2-Methylnaphthalene	1.84	0.333	mg/kg wet	3.333		55	40-140			
2-Methylphenol	1.80	0.333	mg/kg wet	3.333		54	30-130			
2-Nitroaniline	1.76	0.333	mg/kg wet	3.333		53	40-140			
2-Nitrophenol	1.93	0.333	mg/kg wet	3.333		58	30-130			
3,3'-Dichlorobenzidine	2.06	0.667	mg/kg wet	3.333		62	40-140			
3+4-Methylphenol	3.98	0.667	mg/kg wet	6.667		60	30-130			
3-Nitroaniline	2.09	0.333	mg/kg wet	3.333		63	40-140			
4,6-Dinitro-2-Methylphenol	2.05	1.67	mg/kg wet	3.333		61	30-130			
4-Bromophenyl-phenylether	2.07	0.333	mg/kg wet	3.333		62	40-140			
4-Chloro-3-Methylphenol	2.02	0.333	mg/kg wet	3.333		61	30-130			
4-Chloroaniline	1.67	0.667	mg/kg wet	3.333		50	40-140			
4-Chloro-phenyl-phenyl ether	2.02	0.333	mg/kg wet	3.333		61	40-140			
4-Nitroaniline	2.15	0.333	mg/kg wet	3.333		64	40-140			
4-Nitrophenol	1.88	1.67	mg/kg wet	3.333		56	30-130			
Acenaphthene	1.94	0.333	mg/kg wet	3.333		58	40-140			
Acenaphthylene	1.78	0.333	mg/kg wet	3.333		54	40-140			
Acetophenone	1.77	0.667	mg/kg wet	3.333		53	40-140			
Aniline	1.30	0.667	mg/kg wet	3.333		39	40-140			B-
Anthracene	2.22	0.333	mg/kg wet	3.333		67	40-140			
Azobenzene	1.77	0.333	mg/kg wet	3.333		53	40-140			
Benzo(a)anthracene	2.29	0.333	mg/kg wet	3.333		69	40-140			
Benzo(a)pyrene	2.14	0.167	mg/kg wet	3.333		64	40-140			



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270C Semi-Volatile Organic Compounds

**Batch CG21124 - 3546**

Benzo(b)fluoranthene	2.22	0.333	mg/kg wet	3.333		67	40-140			
Benzo(g,h,i)perylene	2.30	0.333	mg/kg wet	3.333		69	40-140			
Benzo(k)fluoranthene	2.26	0.333	mg/kg wet	3.333		68	40-140			
Benzoic Acid	1.24	1.67	mg/kg wet	3.333		37	40-140			B-
Benzyl Alcohol	1.82	0.333	mg/kg wet	3.333		54	40-140			
bis(2-Chloroethoxy)methane	1.80	0.333	mg/kg wet	3.333		54	40-140			
bis(2-Chloroethyl)ether	1.57	0.333	mg/kg wet	3.333		47	40-140			
bis(2-chloroisopropyl)Ether	1.68	0.333	mg/kg wet	3.333		50	40-140			
bis(2-Ethylhexyl)phthalate	2.20	0.333	mg/kg wet	3.333		66	40-140			
Butylbenzylphthalate	2.09	0.333	mg/kg wet	3.333		63	40-140			
Carbazole	2.13	0.333	mg/kg wet	3.333		64	40-140			
Chrysene	2.24	0.167	mg/kg wet	3.333		67	40-140			
Dibenzo(a,h)Anthracene	2.33	0.167	mg/kg wet	3.333		70	40-140			
Dibenzofuran	1.92	0.333	mg/kg wet	3.333		58	40-140			
Diethylphthalate	2.15	0.333	mg/kg wet	3.333		65	40-140			
Dimethylphthalate	2.05	0.333	mg/kg wet	3.333		62	40-140			
Di-n-butylphthalate	2.12	0.333	mg/kg wet	3.333		64	40-140			
Di-n-octylphthalate	2.22	0.333	mg/kg wet	3.333		67	40-140			
Fluoranthene	2.19	0.333	mg/kg wet	3.333		66	40-140			
Fluorene	2.05	0.333	mg/kg wet	3.333		62	40-140			
Hexachlorobenzene	2.13	0.167	mg/kg wet	3.333		64	40-140			
Hexachlorobutadiene	1.91	0.333	mg/kg wet	3.333		57	40-140			
Hexachlorocyclopentadiene	1.70	1.67	mg/kg wet	3.333		51	40-140			
Hexachloroethane	1.68	0.333	mg/kg wet	3.333		50	40-140			
Indeno(1,2,3-cd)Pyrene	2.31	0.333	mg/kg wet	3.333		69	40-140			
Isophorone	1.77	0.333	mg/kg wet	3.333		53	40-140			
Naphthalene	1.82	0.333	mg/kg wet	3.333		55	40-140			
Nitrobenzene	1.73	0.333	mg/kg wet	3.333		52	40-140			
N-Nitrosodimethylamine	1.43	0.333	mg/kg wet	3.333		43	40-140			
N-Nitroso-Di-n-Propylamine	1.75	0.333	mg/kg wet	3.333		53	40-140			
N-nitrosodiphenylamine	2.12	0.333	mg/kg wet	3.333		63	40-140			
Pentachlorophenol	1.77	1.67	mg/kg wet	3.333		53	30-130			
Phenanthrene	2.15	0.333	mg/kg wet	3.333		64	40-140			
Phenol	1.77	0.333	mg/kg wet	3.333		53	30-130			
Pyrene	2.31	0.333	mg/kg wet	3.333		69	40-140			
Pyridine	1.33	1.67	mg/kg wet	3.333		40	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	1.69		mg/kg wet	3.333		51	30-130			
Surrogate: 2,4,6-Tribromophenol	3.72		mg/kg wet	5.000		74	30-130			
Surrogate: 2-Chlorophenol-d4	2.97		mg/kg wet	5.000		59	30-130			
Surrogate: 2-Fluorobiphenyl	1.73		mg/kg wet	3.333		52	30-130			
Surrogate: 2-Fluorophenol	2.81		mg/kg wet	5.000		56	30-130			
Surrogate: Nitrobenzene-d5	1.69		mg/kg wet	3.333		51	30-130			
Surrogate: Phenol-d6	2.88		mg/kg wet	5.000		58	30-130			
Surrogate: p-Terphenyl-d14	2.14		mg/kg wet	3.333		64	30-130			

**LCS Dup**



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
<b>8270C Semi-Volatile Organic Compounds</b>										
<b>Batch CG21124 - 3546</b>										
1,1-Biphenyl	2.14	0.333	mg/kg wet	3.333		64	40-140	12	30	
1,2,4-Trichlorobenzene	2.01	0.333	mg/kg wet	3.333		60	40-140	12	30	
1,2-Dichlorobenzene	1.86	0.333	mg/kg wet	3.333		56	40-140	6	30	
1,3-Dichlorobenzene	1.85	0.333	mg/kg wet	3.333		56	40-140	8	30	
1,4-Dichlorobenzene	1.85	0.333	mg/kg wet	3.333		56	40-140	9	30	
2,3,4,6-Tetrachlorophenol	2.59	1.67	mg/kg wet	3.333		78	30-130	13	30	
2,4,5-Trichlorophenol	2.58	0.333	mg/kg wet	3.333		77	30-130	13	30	
2,4,6-Trichlorophenol	2.48	0.333	mg/kg wet	3.333		75	30-130	13	30	
2,4-Dichlorophenol	2.28	0.333	mg/kg wet	3.333		68	30-130	12	30	
2,4-Dimethylphenol	2.20	0.333	mg/kg wet	3.333		66	30-130	12	30	
2,4-Dinitrophenol	1.66	1.67	mg/kg wet	3.333		50	30-130	6	30	
2,4-Dinitrotoluene	2.32	0.333	mg/kg wet	3.333		70	40-140	12	30	
2,6-Dinitrotoluene	2.50	0.333	mg/kg wet	3.333		75	40-140	14	30	
2-Chloronaphthalene	2.01	0.333	mg/kg wet	3.333		60	40-140	12	30	
2-Chlorophenol	1.94	0.333	mg/kg wet	3.333		58	30-130	8	30	
2-Methylnaphthalene	2.08	0.333	mg/kg wet	3.333		62	40-140	12	30	
2-Methylphenol	1.95	0.333	mg/kg wet	3.333		59	30-130	8	30	
2-Nitroaniline	2.04	0.333	mg/kg wet	3.333		61	40-140	14	30	
2-Nitrophenol	2.15	0.333	mg/kg wet	3.333		65	30-130	11	30	
3,3'-Dichlorobenzidine	2.29	0.667	mg/kg wet	3.333		69	40-140	11	30	
3+4-Methylphenol	5.01	0.667	mg/kg wet	6.667		75	30-130	23	30	
3-Nitroaniline	2.39	0.333	mg/kg wet	3.333		72	40-140	13	30	
4,6-Dinitro-2-Methylphenol	2.30	1.67	mg/kg wet	3.333		69	30-130	12	30	
4-Bromophenyl-phenylether	2.34	0.333	mg/kg wet	3.333		70	40-140	12	30	
4-Chloro-3-Methylphenol	2.32	0.333	mg/kg wet	3.333		69	30-130	13	30	
4-Chloroaniline	1.85	0.667	mg/kg wet	3.333		56	40-140	10	30	
4-Chloro-phenyl-phenyl ether	2.29	0.333	mg/kg wet	3.333		69	40-140	13	30	
4-Nitroaniline	2.40	0.333	mg/kg wet	3.333		72	40-140	11	30	
4-Nitrophenol	2.08	1.67	mg/kg wet	3.333		62	30-130	10	30	
Acenaphthene	2.20	0.333	mg/kg wet	3.333		66	40-140	13	30	
Acenaphthylene	2.03	0.333	mg/kg wet	3.333		61	40-140	13	30	
Acetophenone	1.92	0.667	mg/kg wet	3.333		58	40-140	8	30	
Aniline	1.40	0.667	mg/kg wet	3.333		42	40-140	8	30	
Anthracene	2.49	0.333	mg/kg wet	3.333		75	40-140	12	30	
Azobenzene	2.02	0.333	mg/kg wet	3.333		61	40-140	13	30	
Benzo(a)anthracene	2.56	0.333	mg/kg wet	3.333		77	40-140	11	30	
Benzo(a)pyrene	2.40	0.167	mg/kg wet	3.333		72	40-140	11	30	
Benzo(b)fluoranthene	2.47	0.333	mg/kg wet	3.333		74	40-140	10	30	
Benzo(g,h,i)perylene	2.59	0.333	mg/kg wet	3.333		78	40-140	12	30	
Benzo(k)fluoranthene	2.53	0.333	mg/kg wet	3.333		76	40-140	11	30	
Benzoic Acid	1.26	1.67	mg/kg wet	3.333		38	40-140	1	30	B-
Benzyl Alcohol	1.81	0.333	mg/kg wet	3.333		54	40-140	0.5	30	
bis(2-Chloroethoxy)methane	2.02	0.333	mg/kg wet	3.333		61	40-140	12	30	
bis(2-Chloroethyl)ether	1.71	0.333	mg/kg wet	3.333		51	40-140	8	30	
bis(2-chloroisopropyl)Ether	1.82	0.333	mg/kg wet	3.333		55	40-140	8	30	



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270C Semi-Volatile Organic Compounds

**Batch CG21124 - 3546**

bis(2-Ethylhexyl)phthalate	2.44	0.333	mg/kg wet	3.333		73	40-140	10	30	
Butylbenzylphthalate	2.33	0.333	mg/kg wet	3.333		70	40-140	11	30	
Carbazole	2.41	0.333	mg/kg wet	3.333		72	40-140	12	30	
Chrysene	2.49	0.167	mg/kg wet	3.333		75	40-140	11	30	
Dibenzo(a,h)Anthracene	2.61	0.167	mg/kg wet	3.333		78	40-140	11	30	
Dibenzofuran	2.19	0.333	mg/kg wet	3.333		66	40-140	13	30	
Diethylphthalate	2.41	0.333	mg/kg wet	3.333		72	40-140	11	30	
Dimethylphthalate	2.32	0.333	mg/kg wet	3.333		70	40-140	12	30	
Di-n-butylphthalate	2.38	0.333	mg/kg wet	3.333		71	40-140	12	30	
Di-n-octylphthalate	2.47	0.333	mg/kg wet	3.333		74	40-140	10	30	
Fluoranthene	2.45	0.333	mg/kg wet	3.333		74	40-140	11	30	
Fluorene	2.34	0.333	mg/kg wet	3.333		70	40-140	13	30	
Hexachlorobenzene	2.44	0.167	mg/kg wet	3.333		73	40-140	13	30	
Hexachlorobutadiene	2.12	0.333	mg/kg wet	3.333		64	40-140	10	30	
Hexachlorocyclopentadiene	1.91	1.67	mg/kg wet	3.333		57	40-140	11	30	
Hexachloroethane	1.83	0.333	mg/kg wet	3.333		55	40-140	9	30	
Indeno(1,2,3-cd)Pyrene	2.61	0.333	mg/kg wet	3.333		78	40-140	12	30	
Isophorone	1.99	0.333	mg/kg wet	3.333		60	40-140	12	30	
Naphthalene	2.03	0.333	mg/kg wet	3.333		61	40-140	11	30	
Nitrobenzene	1.94	0.333	mg/kg wet	3.333		58	40-140	12	30	
N-Nitrosodimethylamine	1.56	0.333	mg/kg wet	3.333		47	40-140	9	30	
N-Nitroso-Di-n-Propylamine	1.89	0.333	mg/kg wet	3.333		57	40-140	8	30	
N-nitrosodiphenylamine	2.41	0.333	mg/kg wet	3.333		72	40-140	13	30	
Pentachlorophenol	2.01	1.67	mg/kg wet	3.333		60	30-130	13	30	
Phenanthrene	2.42	0.333	mg/kg wet	3.333		73	40-140	12	30	
Phenol	1.89	0.333	mg/kg wet	3.333		57	30-130	7	30	
Pyrene	2.60	0.333	mg/kg wet	3.333		78	40-140	12	30	
Pyridine	1.44	1.67	mg/kg wet	3.333		43	40-140	8	30	
Surrogate: 1,2-Dichlorobenzene-d4	1.76		mg/kg wet	3.333		53	30-130			
Surrogate: 2,4,6-Tribromophenol	4.04		mg/kg wet	5.000		81	30-130			
Surrogate: 2-Chlorophenol-d4	3.07		mg/kg wet	5.000		61	30-130			
Surrogate: 2-Fluorobiphenyl	1.88		mg/kg wet	3.333		56	30-130			
Surrogate: 2-Fluorophenol	2.91		mg/kg wet	5.000		58	30-130			
Surrogate: Nitrobenzene-d5	1.81		mg/kg wet	3.333		54	30-130			
Surrogate: Phenol-d6	3.01		mg/kg wet	5.000		60	30-130			
Surrogate: p-Terphenyl-d14	2.30		mg/kg wet	3.333		69	30-130			

Classical Chemistry

**Batch CG21315 - General Preparation**

**Blank**

Conductivity	ND	5	umhos/cm							
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**LCS**

Conductivity	1390		umhos/cm	1412	99	90-110				
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**Batch CG21402 - General Preparation**





*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Classical Chemistry

**Batch CG21402 - General Preparation**

**Blank**

Reactive Cyanide	ND	2.0	mg/kg							
Reactive Sulfide	ND	2.0	mg/kg							

**LCS**

Reactive Cyanide	3.9	2.0	mg/kg	100.3		4	0.68-5.41			
Reactive Sulfide	0.2	2.0	mg/kg	10.00		2	0-44			



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**Notes and Definitions**

- Z-08 See Attached
- WL Results obtained from a deionized water leach of the sample.
- U Analyte included in the analysis, but not detected
- SC Surrogate recovery(ies) outside of criteria. Reextraction/Reanalysis confirms results (SC).
- Q Calibration required quadratic regression (Q).
- J Reported between MDL and MRL; Estimated value.
- D+ Relative percent difference for duplicate is outside of criteria (D+).
- D Diluted.
- C+ Continuing Calibration recovery is above upper control limit (C+).
- C- Continuing Calibration recovery is below lower control limit (C-).
- B+ Blank Spike recovery is above upper control limit (B+).
- B- Blank Spike recovery is below lower control limit (B-).
- B Present in Method Blank (B).
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Building 990

ESS Laboratory Work Order: 1207138

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01  
<http://www.a2la.org/scopepdf/2864-01.pdf>

Rhode Island Potable and Non Potable Water: LAI00179  
<http://www.health.ri.gov/labs/waterlabs-instate.php>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750  
[http://www.ct.gov/dph/lib/dph/environmental\\_health/environmental\\_laboratories/pdf/OutOfStateCommercialLaboratories.pdf](http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf)

Maine Potable and Non Potable Water: RI0002  
[http://www.maine.gov/dep/blwq/topic/vessel/lab\\_list.pdf](http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf)

Massachusetts Potable and Non Potable Water: M-RI002  
<http://public.dep.state.ma.us/labcert/labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424  
<http://www4.egov.nh.gov/des/nhelap/namesearch.asp>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313  
<http://www.wadsworth.org/labcert/elap/comm.html>

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301  
[http://www.mde.state.md.us/assets/document/WSP\\_labs-2009apr20.pdf](http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf)

**CHEMISTRY**

A2LA Accredited: Testing Cert # 2864.01  
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)  
<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141  
Lead Paint, Lead in Children's Metals Jewelry  
<http://www.cpsc.gov/cgi-bin/labapplist.aspx>

**Sample and Cooler Receipt Checklist**

Client: GZA GeoEnvironmental, Inc.  
Client Project ID: \_\_\_\_\_  
Shipped/Delivered Via: Client

ESS Project ID: 12070138  
Date Project Due: 7/19/12  
Days For Project: 5 Day

**Items to be checked upon receipt:**

- 1. Air Bill Manifest Present?  \* No
- Air No.: \_\_\_\_\_
- 2. Were Custody Seals Present?  No
- 3. Were Custody Seals Intact?  N/A
- 4. Is Radiation count < 100 CPM?  Yes
- 5. Is a cooler present?  Yes
- Cooler Temp: 11.4
- Iced With: Ice
- 6. Was COC included with samples?  Yes
- 7. Was COC signed and dated by client?  Yes
- 8. Does the COC match the sample  Yes
- 9. Is COC complete and correct?  Yes
- 10. Are the samples properly preserved?  Yes
- 11. Proper sample containers used?  Yes
- 12. Any air bubbles in the VOA vials?  N/A
- 13. Holding times exceeded?  No
- 14. Sufficient sample volumes?  Yes
- 15. Any Subcontracting needed?  No
- 16. Are ESS labels on correct containers?  Yes  No
- 17. Were samples received intact?  Yes  No
- ESS Sample IDs: \_\_\_\_\_
- Sub Lab: \_\_\_\_\_
- Analysis: \_\_\_\_\_
- TAT: \_\_\_\_\_

18. Was there need to call project manager to discuss status? If yes, please explain.  
\_\_\_\_\_  
\_\_\_\_\_

Who was called?: \_\_\_\_\_ By whom? \_\_\_\_\_

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	40 ml - VOA	1	MeOH
1	Yes	8 oz Soil Jar	2	NP
1	Yes	Plastic Bag	1	NP
2	Yes	40 ml - VOA	1	MeOH
2	Yes	8 oz Soil Jar	2	NP
2	Yes	Plastic Bag	1	NP

Completed By: JK  
Reviewed By: CEO

Date/Time: 7/12/12 1305  
Date/Time: 7/12/12 1445





## **REPORT OF ANALYTICAL RESULTS**

**NETLAB Case Number Y0817-04A**

Prepared for:

Hugo Key and Son Inc.  
PO Box 6  
Newport, RI 02840

Report Date: August 30, 2012

Reviewed by:

Richard Warila  
Laboratory Director

Lab # RI010

**NEW ENGLAND TESTING LABORATORY, INC.**

1254 Douglas Avenue, North Providence, RI 02904

(401) 353-3420

## SAMPLES SUBMITTED and REQUEST FOR ANALYSIS:

The samples listed in Table I were submitted to New England Testing Laboratory on August 17, 2012 and August 28, 2012. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is Y0817-04A.

Custody records are included in this report.

**TABLE I, Samples Submitted**

Sample ID	Date Sampled	Matrix	Analysis Requested
Deerfield Culvert	8/17/12	Soil	Table II
Deerfield Culvert	8/28/12	Soil	Table III

**TABLE II, Analysis and Methods**

ANALYSIS	PREPARATION METHOD	DETERMINATIVE METHOD
Total Petroleum Hydrocarbons	3550C	8100M
PAHs	3550C	8270D
Total Metals		
Antimony	3050B	6010C
Arsenic	3050B	6010C
Beryllium	3050B	6010C
Cadmium	3050B	6010C
Chromium	3050B	6010C
Copper	3050B	6010C
Lead	3050B	6010C
Mercury	NA	7471B
Nickel	3050B	6010C
Selenium	3050B	6010C
Silver	3050B	6010C
Thallium	3050B	7010
Zinc	3050B	6010C
Volatile Organic Compounds	5035	8260B

**TABLE III, Analysis and Methods**

ANALYSIS	PREPARATION METHOD	DETERMINATIVE METHOD
Total Metals		
Arsenic	3050B	6010C

This method is documented in:

*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, USEPA/OSW.*

## **CASE NARRATIVE:**

### **Sample Receipt:**

No trip blank was supplied. No field blank was supplied. (This does not qualify the analytical results but does prevent conducting these SW-846 {Chapter 1, Section 3.4} QA Audits).

The samples were all appropriately preserved/cooled upon receipt.

The samples were received in the appropriate containers.

The chain of custody was adequately completed and corresponded to the samples submitted.

### **Metals:**

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

### **PAHs:**

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

### **Total Petroleum Hydrocarbons:**

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

### **Volatile Organic Compounds:**

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.



<b>Sample: Deerfield Culvert</b>		Analyst's Initials: BJ
<b>Case No. Y0817-04A</b>		
<b>Date Collected: 8/17/12</b>		
<b>Sample Matrix: Soil</b>		
<b>Subject: TPH</b>		
<b>Prep Method: EPA 3550C</b>	Date Extracted	Date Analyzed
<b>Analytical Method: EPA 8100 M</b>	8/20/12	8/20/12
Compound	Concentration, mg/kg* (ppm)	Reporting Limit
Total Petroleum Hydrocarbons	252	42
Surrogates:		
Compound	% Recovery	Limits
Chlorooctadecane	84	62-151

ND = Not Detected

\*Dry Weight Basis

## **METALS RESULTS**

The presence of the NETLAB LOGO in the top right corner of each page in this section indicates:

The Technical Manager of the Metals Analysis Department certifies that the results included in this section have been reviewed and approved. Any exceptions or qualifications of substance have been reported in the case narrative.

New England Testing Laboratory, Inc.

METALS RESULTS



Case Number: Y0817-04A  
 Sample ID: Deerfield Culvert  
 Date collected: 8/17/12  
 Matrix: Soil  
 Solids, %: 91.95  
 Sample Type: Total

Analyst JC/RS

Parameter	CAS Number	Preparative Method	Analytical Method	Result	Reporting Limit	Units	Date of Preparation	Date Analyzed
Antimony	7440-36-0	3050B	6010C	ND	0.72	mg/kg	8/21/12	8/23/12
Beryllium	7440-41-7	3050B	6010C	ND	0.36	mg/kg	8/21/12	8/23/12
Cadmium	7440-43-9	3050B	6010C	1.09	0.36	mg/kg	8/21/12	8/23/12
Chromium	7440-47-3	3050B	6010C	8.18	0.36	mg/kg	8/21/12	8/23/12
Copper	7440-50-8	3050B	6010C	11.9	1.44	mg/kg	8/21/12	8/23/12
Lead	7439-92-1	3050B	6010C	13.1	0.36	mg/kg	8/21/12	8/23/12
Mercury	7439-97-6	NA	7471B	ND	0.089	mg/kg	8/21/12	8/21/12
Nickel	7440-02-0	3050B	6010C	16.0	0.36	mg/kg	8/21/12	8/23/12
Selenium	7782-49-2	3050B	6010C	6.46	0.72	mg/kg	8/21/12	8/23/12
Silver	7440-22-4	3050B	6010C	ND	0.36	mg/kg	8/21/12	8/23/12
Thallium	7440-28-0	3050B	7010	ND	0.36	mg/kg	8/21/12	8/23/12
Zinc	7440-66-6	3050B	6010C	38.5	1.44	mg/kg	8/21/12	8/23/12

ND indicates Not Detected.

All results are reported on a dry weight basis.

METALS RESULTS



Case Number: Y0828-01  
 Sample ID: Deerfield Culvert  
 Date collected: 8/28/12  
 Matrix: Soil  
 Solids, %: 88.93  
 Sample Type: Total

Analyst JC/RS

		Preparative	Analytical		Reporting		Date of	Date
Parameter	CAS Number	Method	Method	Result	Limit	Units	Preparation	Analyzed
Arsenic	7440-38-2	3050B	6010C	3.61	0.63	mg/kg	8/28/12	8/29/12

ND indicates Not Detected.

All results are reported on a dry weight basis.

## **RESULTS: SEMIVOLATILE ORGANIC COMPOUNDS**

The presence of the NETLAB LOGO in the top right corner of each page in this section indicates:

The Technical Manager of the Organics Analysis Department certifies that the samples included in this section have been prepared and analyzed using the procedures cited and that the results have been reviewed and approved. Any exceptions or qualifications of substance have been reported in the case narrative.

## SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0817-04A Client Name: Hugo Key and Son Inc  
 Method: 8270 Lab Sample ID: Deerfield Colvert  
 Matrix: (soil/water/air) SOIL Lab File ID: B082116.D  
 Sample wt/vol: 20.712 (g/ml) G Date Sampled: 8/17/2012  
 Level: (low/med) LOW Date Extracted: 8/20/2012  
 % Moisture: 8.05 Date Analyzed: 8/21/2012  
 Concentrated Extract Volume: 1000 (uL) Dilution Factor: 1.0  
 Injection Volume: 1.0 (uL)  
 Analyst's Initials: JD

CAS NO.	COMPOUND	UNITS:	UG/KG	Q
91-20-3	Naphthalene		100	U
91-57-6	2-Methylnaphthalene		100	U
208-96-8	Acenaphthylene		100	U
83-32-9	Acenaphthene		100	U
132-64-9	Dibenzofuran		100	U
86-73-7	Fluorene		100	U
85-01-8	Phenanthrene		130	
120-12-7	Anthracene		100	U
206-44-0	Fluoranthene		190	
129-00-0	Pyrene		240	
56-55-3	Benzo(a)anthracene		110	
218-01-9	Chrysene		130	
205-99-2	Benzo(b)fluoranthene		150	
207-08-9	Benzo(k)fluoranthene		100	U
50-32-8	Benzo(a)pyrene		110	
193-39-5	Indeno(1,2,3-cd)pyrene		100	U
53-70-3	Dibenz(a,h)anthracene		100	U
191-24-2	Benzo(g,h,i)perylene		100	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

FORM I SV-1

## **RESULTS: VOLATILE ORGANIC COMPOUNDS**

The presence of the NETLAB LOGO in the top right corner of each page in this section indicates:

The Technical Manager of the Organics Analysis Department certifies that the samples included in this section have been prepared and analyzed using the procedures cited and that the results have been reviewed and approved. Any exceptions or qualifications of substance have been reported in the case narrative.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0817-04A Client Name: Hugo Key and Son, Inc.  
 Method: 8260 Lab Sample ID: Deerfield Culvert  
 Matrix: (soil/water) SOIL Lab File ID: C082044.D  
 Sample wt/vol: 12.3 (g/ml) G Date Sampled: 8/17/2012  
 % Moisture 8.05 Date Analyzed: 8/21/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
75-01-4	Vinyl Chloride	44	U
74-83-9	Bromomethane	44	U
75-00-3	Chloroethane	44	U
67-64-1	Acetone	220	U
75-35-4	1,1-Dichloroethene	44	U
75-15-0	Carbon Disulfide	44	U
75-09-2	Methylene Chloride	44	U
1634-04-4	tert-Butyl methyl ether	44	U
156-60-5	trans-1,2 Dichloroethene	44	U
75-34-3	1,1-Dichloroethane	44	U
78-93-3	2-Butanone	220	U
594-20-7	2,2-Dichloropropane	44	U
156-59-2	cis-1,2-Dichloroethene	44	U
67-66-3	Chloroform	44	U
74-97-5	Bromochloromethane	44	U
71-55-6	1,1,1-Trichloroethane	44	U
563-58-6	1,1-Dichloropropene	44	U
56-23-5	Carbon Tetrachloride	44	U
71-43-2	Benzene	44	U
107-06-2	1,2-Dichloroethane	44	U
79-01-6	Trichloroethene	44	U
78-87-5	1,2-Dichloropropane	44	U
75-27-4	Bromodichloromethane	44	U
74-95-3	Dibromomethane	44	U
108-10-1	4-Methyl-2-pentanone	220	U
106-93-4	Ethylene Dibromide	44	U
10061-01-5	cis-1,3-Dichloropropene	44	U
108-88-3	Toluene	44	U
10061-02-6	Trans-1,3-Dichloropropene	44	U
79-00-5	1,1,2-Trichloroethane	44	U
591-78-6	2-Hexanone	220	U
127-18-4	Tetrachloroethene	44	U
124-48-1	Chlorodibromomethane	44	U
108-90-7	Chlorobenzene	44	U
630-20-6	1,1,1,2-Tetrachloroethane	44	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.



VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0817-04A Client Name: Hugo Key and Son, Inc.  
 Method: 8260 Lab Sample ID: Deerfield Culvert  
 Matrix: (soil/water) SOIL Lab File ID: C082044.D  
 Sample wt/vol: 12.3 (g/ml) G Date Sampled: 8/17/2012  
 % Moisture 8.05 Date Analyzed: 8/21/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
100-41-4	Ethylbenzene	44	U
1330-20-7	m & p-Xylene	88	U
95-47-6	o-Xylene	44	U
100-42-5	Styrene	44	U
75-25-2	Bromoform	44	U
98-82-8	Isopropylbenzene	44	U
79-34-5	1,1,2,2-Tetrachloroethane	44	U
108-86-1	Bromobenzene	44	U
96-18-4	1,2,3-Trichloropropane	44	U
95-49-8	2-Chlorotoluene	44	U
103-65-1	n-Propylbenzene	44	U
108-67-8	1,3,5-Trimethylbenzene	44	U
106-43-4	4-Chlorotoluene	44	U
98-06-6	tert-Butylbenzene	44	U
95-63-6	1,2,4-Trimethylbenzene	44	U
135-98-8	sec-Butylbenzene	44	U
99-87-6	p-Isopropyltoluene	44	U
75-87-3	Chloromethane	44	U
75-65-0	tert butyl alcohol	44	U
541-73-1	1,3-Dichlorobenzene	44	U
109-99-9	Tetrahydrofuran	44	U
106-46-7	1,4-Dichlorobenzene	44	U
60-29-7	Diethyl Ether	44	U
104-51-8	n-Butylbenzene	44	U
95-50-1	1,2-Dichlorobenzene	44	U
96-12-8	1,2-Dibromo-3-chloropropane	44	U
120-82-1	1,2,4-Trichlorobenzene	44	U
87-68-3	Hexachlorobutadiene	44	U
91-20-3	Naphthalene	44	U
87-61-6	1,2,3-Trichlorobenzene	44	U
994-05-8	Tert-amyl Methyl Ether	44	U
75-71-8	Dichlorodifluoromethane	44	U
142-28-9	1,3-Dichloropropane	44	U
75-69-4	Trichlorofluoromethane	44	U
637-92-3	Ethyl Tert-butyl ether	44	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0817-04A Client Name: Hugo Key and Son, Inc.  
 Method: 8260 Lab Sample ID: Deerfield Culvert  
 Matrix: (soil/water) SOIL Lab File ID: C082044.D  
 Sample wt/vol: 12.3 (g/ml) G Date Sampled: 8/17/2012  
 % Moisture 8.05 Date Analyzed: 8/21/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
108-20-3	Diisopropyl Ether	44	U
123-91-1	1,4-Dioxane	11000	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.







**REPORT OF ANALYTICAL RESULTS**

**NETLAB Case Number Y0726-21**

Prepared for:

Attn: Jacob Butterworth  
Alliance Environmental Group  
100 Jefferson Blvd., Suite 220  
Warwick, RI 02888

Report Date: August 3, 2012

Reviewed by:

Richard Warila  
Laboratory Director

Lab # RI010

NEW ENGLAND TESTING LABORATORY, INC.

1254 Douglas Avenue, North Providence, RI 02904

(401) 353-3420

**SAMPLES SUBMITTED and REQUEST FOR ANALYSIS:**

The samples listed in Table I were submitted to New England Testing Laboratory on July 26, 2012. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. The report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is Y0726-21.

Custody records are included in this report.

**Site: Wall Street**

**TABLE I, Samples Submitted**

Sample ID	Date Sampled	Matrix	Analysis Requested
Disposal 101	7/25/12	Soil	Table II

**TABLE II, Analysis and Methods**

<b>ANALYSIS</b>	<b>PREPARATION METHOD</b>	<b>DETERMINATIVE METHOD</b>
Volatile Organic Compounds	5035	8260B
PAHs	3550C	8270D
Total Petroleum Hydrocarbons	3550C	8100M
Total Metals		
Antimony	3050B	6010C
Arsenic	3050B	6010C
Beryllium	3050B	6010C
Cadmium	3050B	6010C
Chromium	3050B	6010C
Copper	3050B	6010C
Lead	3050B	6010C
Mercury	NA	7471B
Nickel	3050B	6010C
Selenium	3050B	6010C
Silver	3050B	6010C
Thallium	3050B	7010
Zinc	3050B	6010C

This method is documented in:

*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, USEPA/OSW.*

## **CASE NARRATIVE:**

### **Sample Receipt:**

No field blank was supplied. (This does not qualify the analytical results but does prevent conducting these SW-846 {Chapter 1, Section 3.4} QA Audits.)

The samples were all appropriately preserved/cooled upon receipt.

The samples were received in the appropriate containers.

The chain of custody was adequately completed and corresponded to the samples submitted.

### **Metals:**

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

### **PAHs:**

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

### **Total Petroleum Hydrocarbons:**

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

### **Volatile Organic Compounds:**

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

<b>Sample: Disposal 101</b>		Analyst's Initials: BJ
<b>Case No. Y0726-21</b>		
<b>Date Collected: 7/25/12</b>		
<b>Sample Matrix: Soil</b>		
<b>Subject: TPH</b>		
<b>Prep Method: EPA 3550C</b>	Date Extracted	Date Analyzed
<b>Analytical Method: EPA 8100 M</b>	7/27/12	7/27/12
Compound	Concentration, mg/kg* (ppm)	Reporting Limit
Total Petroleum Hydrocarbons	1,020	106
Surrogates:		
Compound	% Recovery	Limits
Chlorooctadecane	86	62-151

ND = Not Detected

\*Dry Weight Basis



## **METALS RESULTS**

The presence of the NETLAB LOGO in the top right corner of each page in this section indicates:

The Technical Manager of the Metals Analysis Department certifies that the results included in this section have been reviewed and approved. Any exceptions or qualifications of substance have been reported in the case narrative.

New England Testing Laboratory, Inc.

METALS RESULTS



Case Number: Y0726-21  
 Sample ID: Disposal 101  
 Date collected: 7/25/12  
 Matrix: Soil  
 Solids, %: 90.04  
 Sample Type: Total

Analyst JC/RS

Parameter	CAS Number	Preparative Method	Analytical Method	Result	Reporting Limit	Units	Date of Preparation	Date Analyzed
Antimony	7440-36-0	3050B	6010C	1.98	0.68	mg/kg	7/31/12	7/31/12
Arsenic	7440-38-2	3050B	6010C	2.61	0.68	mg/kg	7/31/12	7/31/12
Beryllium	7440-41-7	3050B	6010C	ND	0.34	mg/kg	7/31/12	7/31/12
Cadmium	7440-43-9	3050B	6010C	0.47	0.34	mg/kg	7/31/12	7/31/12
Chromium	7440-47-3	3050B	6010C	8.90	0.34	mg/kg	7/31/12	7/31/12
Copper	7440-50-8	3050B	6010C	15.6	1.35	mg/kg	7/31/12	7/31/12
Lead	7439-92-1	3050B	6010C	94.8	0.34	mg/kg	7/31/12	7/31/12
Mercury	7439-97-6	NA	7471B	0.583	0.085	mg/kg	7/31/12	7/31/12
Nickel	7440-02-0	3050B	6010C	7.94	0.34	mg/kg	7/31/12	7/31/12
Selenium	7782-49-2	3050B	6010C	3.49	0.68	mg/kg	7/31/12	7/31/12
Silver	7440-22-4	3050B	6010C	ND	0.34	mg/kg	7/31/12	7/31/12
Thallium	7440-28-0	3050B	7010	ND	0.27	mg/kg	8/2/12	8/2/12
Zinc	7440-66-6	3050B	6010C	115	1.35	mg/kg	7/31/12	7/31/12

ND indicates Not Detected.

All results are reported on a dry weight basis.

METALS RESULTS



Sample ID: Preparation Blank  
 Matrix: SOIL  
 Solids, %: 100  
 Sample Type: Total

Analyst JC/RS

Parameter	CAS Number	Preparative Method	Analytical Method	Result	Reporting Limit	Units	Date of Preparation	Date Analyzed
Antimony	7440-36-0	3050B	6010C	ND	0.67	mg/kg	7/31/12	7/31/12
Arsenic	7440-38-2	3050B	6010C	ND	0.67	mg/kg	7/31/12	7/31/12
Beryllium	7440-41-7	3050B	6010C	ND	0.33	mg/kg	7/31/12	7/31/12
Cadmium	7440-43-9	3050B	6010C	ND	0.33	mg/kg	7/31/12	7/31/12
Chromium	7440-47-3	3050B	6010C	ND	0.33	mg/kg	7/31/12	7/31/12
Copper	7440-50-8	3050B	6010C	ND	1.33	mg/kg	7/31/12	7/31/12
Lead	7439-92-1	3050B	6010C	ND	0.33	mg/kg	7/31/12	7/31/12
Mercury	7439-97-6	NA	7471B	ND	0.067	mg/kg	7/31/12	7/31/12
Nickel	7440-02-0	3050B	6010C	ND	0.33	mg/kg	7/31/12	7/31/12
Selenium	7782-49-2	3050B	6010C	ND	0.67	mg/kg	7/31/12	7/31/12
Silver	7440-22-4	3050B	6010C	ND	0.33	mg/kg	7/31/12	7/31/12
Thallium	7440-28-0	3050B	7010	ND	0.13	mg/kg	8/2/12	8/2/12
Zinc	7440-66-6	3050B	6010C	ND	1.33	mg/kg	7/31/12	7/31/12

ND indicates Not Detected.

All results are reported on a dry weight basis.

## LABORATORY CONTROL SAMPLE RECOVERY

Parameter	True Value	Result	Units	Recovery, %	Internal		Date Analyzed
					LCL, %	UCL, %	
Antimony	66.7	65.3	mg/kg	98	80	120	7/31/12
Arsenic	13.3	13.1	mg/kg	98	80	120	7/31/12
Beryllium	13.3	14.2	mg/kg	107	80	120	7/31/12
Cadmium	66.7	59.7	mg/kg	90	80	113	7/31/12
Chromium	66.7	66.1	mg/kg	99	80	115	7/31/12
Copper	66.7	63.5	mg/kg	95	80	120	7/31/12
Lead	66.7	70.7	mg/kg	106	80	114	7/31/12
Mercury	0.133	0.127	mg/kg	95	80	120	7/31/12
Nickel	66.7	62.8	mg/kg	94	80	107	7/31/12
Selenium	13.3	12.6	mg/kg	95	80	120	7/31/12
Silver	33.3	30.6	mg/kg	92	80	120	7/31/12
Thallium	1.33	1.33	mg/kg	100	82	120	8/2/12
Zinc	66.7	65.3	mg/kg	98	80	119	7/31/12

## **RESULTS: SEMIVOLATILE ORGANIC COMPOUNDS**

The presence of the NETLAB LOGO in the top right corner of each page in this section indicates:

The Technical Manager of the Organics Analysis Department certifies that the samples included in this section have been prepared and analyzed using the procedures cited and that the results have been reviewed and approved. Any exceptions or qualifications of substance have been reported in the case narrative.

## SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0726-21 Client Name: Alliance Environmental Group  
 Method: 8270 Lab Sample ID: Disposal 101  
 Matrix: (soil/water/air) SOIL Lab File ID: B073108.D  
 Sample wt/vol: 20.966 (g/ml) G Date Sampled: 7/25/2012  
 Level: (low/med) LOW Date Extracted: 7/30/2012  
 % Moisture: 9.96 Date Analyzed: 7/31/2012  
 Concentrated Extract Volume: 1000 (uL) Dilution Factor: 1.0,5  
 Injection Volume: 1.0 (uL)  
 Analyst's Initials: JD

CAS NO.	COMPOUND	UNITS:	UG/KG	Q
91-20-3	Naphthalene		17000	
91-57-6	2-Methylnaphthalene		24000	
208-96-8	Acenaphthylene		110	U
83-32-9	Acenaphthene		110	U
132-64-9	Dibenzofuran		110	U
86-73-7	Fluorene		110	U
85-01-8	Phenanthrene		140	
120-12-7	Anthracene		110	U
206-44-0	Fluoranthene		110	U
129-00-0	Pyrene		110	U
56-55-3	Benzo(a)anthracene		110	U
218-01-9	Chrysene		110	U
205-99-2	Benzo(b)fluoranthene		110	U
207-08-9	Benzo(k)fluoranthene		110	U
50-32-8	Benzo(a)pyrene		110	U
193-39-5	Indeno(1,2,3-cd)pyrene		110	U
53-70-3	Dibenz(a,h)anthracene		110	U
191-24-2	Benzo(g,h,i)perylene		110	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

FORM I SV-1

## SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0726-21 Client Name: Alliance Environmental Group  
 Method: 8270 Lab Sample ID: BSS073012  
 Matrix: (soil/water/air) SOIL Lab File ID: B073103.D  
 Sample wt/vol: 20 (g/ml) G Date Sampled: 7/25/2012  
 Level: (low/med) LOW Date Extracted: 7/30/2012  
 % Moisture: 0 Date Analyzed: 7/31/2012  
 Concentrated Extract Volume: 1000 (uL) Dilution Factor: 1.0  
 Injection Volume: 1.0 (uL)  
 Analyst's Initials: JD

CAS NO.	COMPOUND	UNITS:	UG/KG	Q
91-20-3	Naphthalene		100	U
91-57-6	2-Methylnaphthalene		100	U
208-96-8	Acenaphthylene		100	U
83-32-9	Acenaphthene		100	U
132-64-9	Dibenzofuran		100	U
86-73-7	Fluorene		100	U
85-01-8	Phenanthrene		100	U
120-12-7	Anthracene		100	U
206-44-0	Fluoranthene		100	U
129-00-0	Pyrene		100	U
56-55-3	Benzo(a)anthracene		100	U
218-01-9	Chrysene		100	U
205-99-2	Benzo(b)fluoranthene		100	U
207-08-9	Benzo(k)fluoranthene		100	U
50-32-8	Benzo(a)pyrene		100	U
193-39-5	Indeno(1,2,3-cd)pyrene		100	U
53-70-3	Dibenz(a,h)anthracene		100	U
191-24-2	Benzo(g,h,i)perylene		100	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

FORM I SV-1



2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: New England Testing Laboratory Case No.: Y0726-21  
 Lab Code: RI010 Client Name: Alliance Environmental Group  
 Level: (low/med) LOW

	Sample ID	S1 #	S2 #	S3 #	TOT OUT
01	BSS073012	81	77	86	0
02	LSS073012	69	63	68	0
03	DISPOSAL 101	72	84	105	0

QC LIMITS

S1 = Nitrobenzene-d5 (12-110)  
 S2 = 2-Fluorobiphenyl (17-122)  
 S3 = Terphenyl-d14 (10-139)

# Column to be used to flag recovery values  
 \* Values outside of contract required QC limits  
 D Surrogate diluted out

New England Testing Laboratory, Inc.



## Semivolatile Soil Laboratory Control Spike

Date Extracted: 7/30/2012

Date Analyzed: 7/31/2012

	Amount Spiked	Result,	Recovery	Lower Recovery	Upper Recovery
	ug/Kg	ug/Kg	%	Limit	Limit
Naphthalene	2500	1675	67	27	100
2-Methylnaphthalene	2500	1453	58	28	100
Acenaphthylene	2500	1479	59	35	109
Acenaphthene	2500	1529	61	32	108
Dibenzofuran	2500	1983	79	32	111
Fluorene	2500	1562	62	31	116
Phenanthrene	2500	1593	64	41	118
Anthracene	2500	1510	60	30	119
Fluoranthene	2500	1508	60	35	120
Pyrene	2500	1553	62	46	112
Benzo(a)anthracene	2500	1625	65	45	114
Chrysene	2500	1574	63	33	123
Benzo(b)fluoranthene	2500	1625	65	33	122
Benzo(k)fluoranthene	2500	1592	64	34	130
Benzo(a)pyrene	2500	1542	62	37	115
Indeno(1,2,3-cd)pyrene	2500	1547	62	27	143
Dibenz(a,h)anthracene	2500	1592	64	33	137
Benzo(g,h,i)perylene	2500	1525	61	16	152

## **RESULTS: VOLATILE ORGANIC COMPOUNDS**

The presence of the NETLAB LOGO in the top right corner of each page in this section indicates:

The Technical Manager of the Organics Analysis Department certifies that the samples included in this section have been prepared and analyzed using the procedures cited and that the results have been reviewed and approved. Any exceptions or qualifications of substance have been reported in the case narrative.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0726-21 Client Name: Alliance Environmental G  
 Method: 8260 Lab Sample ID: Disposal 101  
 Matrix: (soil/water) SOIL Lab File ID: C080109.D  
 Sample wt/vol: 22.0 (g/ml) G Date Sampled: 7/25/2012  
 % Moisture 9.96 Date Analyzed: 8/1/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1,20,40  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
75-01-4	Vinyl Chloride	25	U
74-83-9	Bromomethane	25	U
75-00-3	Chloroethane	25	U
67-64-1	Acetone	130	U
75-35-4	1,1-Dichloroethene	25	U
75-15-0	Carbon Disulfide	25	U
75-09-2	Methylene Chloride	25	U
1634-04-4	tert-Butyl methyl ether	25	U
156-60-5	trans-1,2 Dichloroethene	25	U
75-34-3	1,1-Dichloroethane	25	U
78-93-3	2-Butanone	130	U
594-20-7	2,2-Dichloropropane	25	U
156-59-2	cis-1,2-Dichloroethene	25	U
67-66-3	Chloroform	25	U
74-97-5	Bromochloromethane	25	U
71-55-6	1,1,1-Trichloroethane	25	U
563-58-6	1,1-Dichloropropene	25	U
56-23-5	Carbon Tetrachloride	25	U
71-43-2	Benzene	3400	
107-06-2	1,2-Dichloroethane	25	U
79-01-6	Trichloroethene	25	U
78-87-5	1,2-Dichloropropane	25	U
75-27-4	Bromodichloromethane	25	U
74-95-3	Dibromomethane	25	U
108-10-1	4-Methyl-2-pentanone	130	U
106-93-4	Ethylene Dibromide	25	U
10061-01-5	cis-1,3-Dichloropropene	25	U
108-88-3	Toluene	53000	
10061-02-6	Trans-1,3-Dichloropropene	25	U
79-00-5	1,1,2-Trichloroethane	25	U
591-78-6	2-Hexanone	130	U
127-18-4	Tetrachloroethene	25	U
124-48-1	Chlorodibromomethane	25	U
108-90-7	Chlorobenzene	25	U
630-20-6	1,1,1,2-Tetrachloroethane	25	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0726-21 Client Name: Alliance Environmental G  
 Method: 8260 Lab Sample ID: Disposal 101  
 Matrix: (soil/water) SOIL Lab File ID: C080109.D  
 Sample wt/vol: 22.0 (g/ml) G Date Sampled: 7/25/2012  
 % Moisture 9.96 Date Analyzed: 8/1/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1,20,40  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
100-41-4	Ethylbenzene	30000	
1330-20-7	m & p-Xylene	170000	
95-47-6	o-Xylene	62000	
100-42-5	Styrene	25	U
75-25-2	Bromoform	25	U
98-82-8	Isopropylbenzene	3800	
79-34-5	1,1,2,2-Tetrachloroethane	25	U
108-86-1	Bromobenzene	25	U
96-18-4	1,2,3-Trichloropropane	25	U
95-49-8	2-Chlorotoluene	25	U
103-65-1	n-Propylbenzene	16000	
108-67-8	1,3,5-Trimethylbenzene	52000	
106-43-4	4-Chlorotoluene	25	U
98-06-6	tert-Butylbenzene	510	
95-63-6	1,2,4-Trimethylbenzene	160000	
135-98-8	sec-Butylbenzene	3300	
99-87-6	p-Isopropyltoluene	7300	
75-87-3	Chloromethane	25	U
75-65-0	tert butyl alcohol	25	U
541-73-1	1,3-Dichlorobenzene	25	U
109-99-9	Tetrahydrofuran	25	U
106-46-7	1,4-Dichlorobenzene	25	U
60-29-7	Diethyl Ether	25	U
104-51-8	n-Butylbenzene	18000	
95-50-1	1,2-Dichlorobenzene	25	U
96-12-8	1,2-Dibromo-3-chloropropane	25	U
120-82-1	1,2,4-Trichlorobenzene	25	U
87-68-3	Hexachlorobutadiene	25	U
91-20-3	Naphthalene	56000	
87-61-6	1,2,3-Trichlorobenzene	25	U
994-05-8	Tert-amyl Methyl Ether	25	U
75-71-8	Dichlorodifluoromethane	25	U
142-28-9	1,3-Dichloropropane	25	U
75-69-4	Trichlorofluoromethane	25	U
637-92-3	Ethyl Tert-butyl ether	25	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0726-21 Client Name: Alliance Environmental G  
 Method: 8260 Lab Sample ID: Disposal 101  
 Matrix: (soil/water) SOIL Lab File ID: C080109.D  
 Sample wt/vol: 22.0 (g/ml) G Date Sampled: 7/25/2012  
 % Moisture 9.96 Date Analyzed: 8/1/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1,20,40  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
108-20-3	Diisopropyl Ether	25	U
123-91-1	1,4-Dioxane	6300	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0726-21 Client Name: Alliance Environmental G  
 Method: 8260 Lab Sample ID: VBLK080112  
 Matrix: (soil/water) SOIL Lab File ID: C080108.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/25/2012  
 % Moisture 0 Date Analyzed: 8/1/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
75-01-4	Vinyl Chloride	50	U
74-83-9	Bromomethane	50	U
75-00-3	Chloroethane	50	U
67-64-1	Acetone	250	U
75-35-4	1,1-Dichloroethene	50	U
75-15-0	Carbon Disulfide	50	U
75-09-2	Methylene Chloride	50	U
1634-04-4	tert-Butyl methyl ether	50	U
156-60-5	trans-1,2 Dichloroethene	50	U
75-34-3	1,1-Dichloroethane	50	U
78-93-3	2-Butanone	250	U
594-20-7	2,2-Dichloropropane	50	U
156-59-2	cis-1,2-Dichloroethene	50	U
67-66-3	Chloroform	50	U
74-97-5	Bromochloromethane	50	U
71-55-6	1,1,1-Trichloroethane	50	U
563-58-6	1,1-Dichloropropene	50	U
56-23-5	Carbon Tetrachloride	50	U
71-43-2	Benzene	50	U
107-06-2	1,2-Dichloroethane	50	U
79-01-6	Trichloroethene	50	U
78-87-5	1,2-Dichloropropane	50	U
75-27-4	Bromodichloromethane	50	U
74-95-3	Dibromomethane	50	U
108-10-1	4-Methyl-2-pentanone	250	U
106-93-4	Ethylene Dibromide	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
108-88-3	Toluene	50	U
10061-02-6	Trans-1,3-Dichloropropene	50	U
79-00-5	1,1,2-Trichloroethane	50	U
591-78-6	2-Hexanone	250	U
127-18-4	Tetrachloroethene	50	U
124-48-1	Chlorodibromomethane	50	U
108-90-7	Chlorobenzene	50	U
630-20-6	1,1,1,2-Tetrachloroethane	50	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0726-21 Client Name: Alliance Environmental G  
 Method: 8260 Lab Sample ID: VBLK080112  
 Matrix: (soil/water) SOIL Lab File ID: C080108.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/25/2012  
 % Moisture 0 Date Analyzed: 8/1/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
100-41-4	Ethylbenzene	50	U
1330-20-7	m & p-Xylene	100	U
95-47-6	o-Xylene	50	U
100-42-5	Styrene	50	U
75-25-2	Bromoform	50	U
98-82-8	Isopropylbenzene	50	U
79-34-5	1,1,2,2-Tetrachloroethane	50	U
108-86-1	Bromobenzene	50	U
96-18-4	1,2,3-Trichloropropane	50	U
95-49-8	2-Chlorotoluene	50	U
103-65-1	n-Propylbenzene	50	U
108-67-8	1,3,5-Trimethylbenzene	50	U
106-43-4	4-Chlorotoluene	50	U
98-06-6	tert-Butylbenzene	50	U
95-63-6	1,2,4-Trimethylbenzene	50	U
135-98-8	sec-Butylbenzene	50	U
99-87-6	p-Isopropyltoluene	50	U
75-87-3	Chloromethane	50	U
75-65-0	tert butyl alcohol	50	U
541-73-1	1,3-Dichlorobenzene	50	U
109-99-9	Tetrahydrofuran	50	U
106-46-7	1,4-Dichlorobenzene	50	U
60-29-7	Diethyl Ether	50	U
104-51-8	n-Butylbenzene	50	U
95-50-1	1,2-Dichlorobenzene	50	U
96-12-8	1,2-Dibromo-3-chloropropane	50	U
120-82-1	1,2,4-Trichlorobenzene	50	U
87-68-3	Hexachlorobutadiene	50	U
91-20-3	Naphthalene	50	U
87-61-6	1,2,3-Trichlorobenzene	50	U
994-05-8	Tert-amyl Methyl Ether	50	U
75-71-8	Dichlorodifluoromethane	50	U
142-28-9	1,3-Dichloropropane	50	U
75-69-4	Trichlorofluoromethane	50	U
637-92-3	Ethyl Tert-butyl ether	50	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: Y0726-21 Client Name: Alliance Environmental G  
 Method: 8260 Lab Sample ID: VBLK080112  
 Matrix: (soil/water) SOIL Lab File ID: C080108.D  
 Sample wt/vol: 10.0 (g/ml) G Date Sampled: 7/25/2012  
 % Moisture 0 Date Analyzed: 8/1/2012  
 Soil Extract Volume: \_\_\_\_\_ (uL) Dilution Factor: 1.0  
 Analyst's Initials: AM Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	UNITS: <u>UG/KG</u>	Q
108-20-3	Diisopropyl Ether	50	U
123-91-1	1,4-Dioxane	12000	U

U=not detected, D=diluted, E=over range (another data sheet is included), J=below limit, B=found in blank

New England Testing Laboratory, Inc.





2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: New England Testing Laboratory Contract: Wall Street

Lab Code: RI010 Case No.: Y0726-21 SAS No.: Allianc SDG No.: Alliance E

Level: (low/med) MED

	EPA SAMPLE NO.	SMC1 #	SMC2 #	SMC3 #	TOT OUT
01	VLCS080112	102	100	99	0
02	VBLK080112	91	96	93	0
03	DISPOSAL 101	102	95	90	0

QC LIMITS

SMC1 = 4-Bromofluorobenzene (70-130)  
 SMC2 = Toluene-D8 (70-130)  
 SMC3 = 1,2-Dichloroethane-D4 (70-130)

# Column to be used to flag recovery values  
 \* Values outside of contract required QC limits  
 D System Monitoring Compound diluted out

New England Testing Laboratory, Inc.

### Volatile Organics Laboratory Control Spike

Date Analyzed:08/01/2012

Sample ID: VLCS080112

<b>Compound</b>	<b>Spike Added</b>	<b>Spike Result</b>	<b>Recovery, %</b>	<b>Lower Control Limit, %</b>	<b>Upper Control Limit, %</b>
1,1-Dichloroethene	50.0	49.0	98	70	129
Benzene	50.0	52.1	104	73	129
Trichloroethene	50.0	46.3	93	77	122
Toluene	50.0	52.3	105	75	123
Chlorobenzene	50.0	53.1	106	73	125



January 22, 2013

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 4th Quarter 2012  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and renewed on September 17, 2012.

This report covers activities conducted during the period of October 1, 2012 to December 31, 2012.

### **Construction Activities**

Construction activities during this reporting period included the delivery and management of three classifications of soil:

- Elevated Arsenic soils;
- Industrial soils; and
- Soil that is compliant with all RIDEM criteria.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. Laboratory analysis data for projects at 20 Fields Point Road in Providence, 291 Branch Avenue

124 Olney Avenue  
North Providence, RI 02911  
401.578.3889  
tim@toconnorconsulting.com  
www.toconnorconsulting.com

in Providence, and Navy Building 990 were submitted previously. The laboratory analysis data for the new projects listed in the table are provided in Appendix B.

**Complaints**

To our knowledge RIDEM received no complaints during this reporting period.

No complaints were received directly by APE during this reporting period.

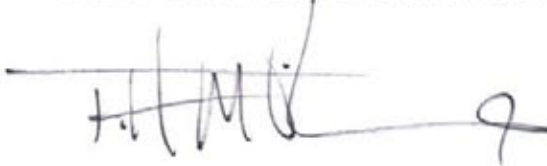
**Schedule**

APE is relieved to see progress being made on the Sakonnet River Bridge and is actively competing with other landfills for available cover material including properly characterized soil from outside of our local area.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC

A handwritten signature in black ink, appearing to read 'T.M. O'Connor', written over a horizontal line.

Timothy M. O'Connor, PE, LEED-AP  
Principal

**Former Portsmouth Landfill  
Shaping and Grading Soils Accepted  
4th Quarter 2012**

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
October 10, 2012	291 Branch Avenue, Providence, RI	VHB	333.00	residential
October 11, 2012	US Navy Perry Hall	Watermark Environmental	264.00	arsenic
October 12 - December 20, 2012	Navy Bldg 990, Newport, RI	GZA GeoEnvironmental	2,091.17	arsenic
October 15, 2012	1065 Anthony Road, Portsmouth, RI	Alliance Environmental Group	61.50	industrial
October 25 - 31, 2012	20 Fields Point Road	Alliance Environmental Group	27.42	industrial
December 17 - 28, 2012	Navy Steam Lines Project	GZA GeoEnvironmental	1,917.00	arsenic

**Total**            4,694.09

# Appendix A – Photographs



**Photo 1 – Looking North Along Park Avenue**



**Photo 2 – Eastern Portion of Site**





**Photo 3 – North Eastern Portion of Site**



**Photo 4 – Along Western Property Fence Line**

# Appendix B – Analytical Data

(data provided on disc)

**Tim O'Connor & Company, LLC**  
environmental consultation

April 18, 2013

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report - 1st Quarter 2013  
Former Portsmouth Landfill

Dear Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and renewed on September 17, 2012.

This report covers activities conducted during the period of January 1, 2013 to March 31, 2013.

**Construction Activities**

Construction activities during this reporting period included the delivery and management of three classifications of soil:

- Elevated Arsenic soils;
- Industrial soils; and
- Soil that is compliant with all RIDEM criteria.

Photos of the Property are attached as Appendix A.

**Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. Laboratory analysis data for Navy Building 990 and the Navy steam lines projects were submitted previously. Also due to the size of the data packages, Site Restoration Technologies LLC has separately provided the data packages for the projects at: Sam's Club - 941 Grinnell

124 Olney Avenue  
North Providence, RI 02911  
401.578.3889  
tim@toconnorconsulting.com  
www.toconnorconsulting.com

Street, Fall River, MA; 1325 Boylston Street, Boston, MA; and BC Saint Mary's Hall Boston, MA. The laboratory analysis data for the remaining new projects listed in the table are provided in Appendix B.

### Complaints

On March 21, 2013 RIDEM received a complaint regarding mud being tracked from the Property on to Park Avenue and Boyd's Lane. On March 22, 2013, RIDEM inspected the Property. The RIDEM representative noted two concerns: (1) "a significant amount of mud on the road" and (2) "the street sweeper was creating a dust issue when cleaning the road by not applying enough water during the process." The RIDEM representative spoke with the site operator and agreed to the following measures:

- Installing a power wash for vehicle cleaning prior to exiting the Property
- Improving the street sweeping operation
- Replacement of stone at the entrance.

RIDEM re-inspected the Property on March 26, 2013 and confirmed that the remedial measures that were previously discussed had been implemented and that no mud or dust concerns were observed.

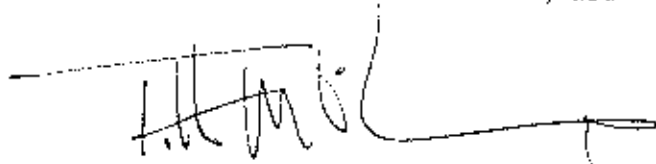
### Schedule

APE is relieved to see progress being made on the Sakonnet River Bridge and is actively competing with other landfills for available cover material including properly characterized soil from outside of our local area.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC



Timothy M. O'Connor, PE, LEED-AP  
Principal

2013 APR 22 2 21 PM

APR 22 2013

**Former Portsmouth Landfill  
Soils Accepted  
1st Quarter 2013**

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
January 4, 2013	Navy Steam Lines Project, Newport, RI	GZA GeoEnvironmental	108.00	arsenic
January 7 - 8, 2013	Navy Big 990, Newport, RI	GZA GeoEnvironmental	99.87	arsenic
January 10, 2013	102 Defense Highway Newport	Proulx Environmental	12.00	arsenic
January 10 - 11, 2013	Navy B.g. 1-71, Newport, RI	Alliance Environmental Group	300.40	residential
January 23 - February 7, 2013	Beechwood Museum, Newport, RI	Woodard & Curran	7,422.21	arsenic
January 25, 2013	661 - 663 Killingly St. Johnston, RI	Alliance Environmental Group	9.81	industrial
March 6 - 25, 2013	Sam's Club 941 Grinnell Street, Fall River, MA	Environ	4,919.39	residential
March 11 - 13, 2013	1325 Boylston Street, Boston, MA	McPhail Associates	2,746.01	industrial
March 18 - 29, 2013	BC Saint Mary's Hall Boston, MA	Haley & Aldrich	6,382.45	industrial
March 21, 2013	1035 Baid Hill Road, Warwick, RI	Alliance Environmental Group	22.50	residential
		<b>Total</b>	<b>21,502.37</b>	

2013 APR 22 9 21 AM

2013 APR 22 9 21 AM

# Appendix A – Photographs





**Photo 3 – Central Portion of Site**



**Photo 4 –Western Portion of Site**



# Appendix B – Analytical Data

(data provided on disc)

November 1, 2013

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 3rd Quarter 2013  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and renewed on September 16, 2013.

This report covers activities conducted during the period of July 1, 2013 to September 30, 2013.

### **Construction Activities**

Construction activities during this reporting period included the delivery and management of two classifications of soil:

- Elevated Arsenic soils; and
- Soil that is compliant with all RIDEM criteria.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. Laboratory analysis data for projects that were submitted previously are: Bellevue Avenue, Navy EMS Facility, Navy Steam Lines Project, Newport Met School, and Navy Buildings 668 & 669. The laboratory analysis data for the remaining new projects listed in the table are provided in Appendix B.

**Complaints**

To our knowledge RIDEM received no complaints during this reporting period.

No complaints were received directly by APE during this reporting period.

RIDEM issued a Letter of Compliance to close out the Letter of Non-Compliance issued July 17, 2013 which related to observations made on May 2, 2013.

**Schedule**

The project team estimates that we are approximately 85% completed with the capping project covered by the existing RIDEM approvals.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC

A handwritten signature in blue ink, appearing to read "T.M. O'Connor", with a long horizontal line extending to the left and a flourish at the end.

Timothy M. O'Connor, PE, LEED-AP  
Principal

**Former Portsmouth Landfill Soils Accepted 3rd Quarter 2013**

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
July 8 - 10, 2013	Bellevue Avenue, Newport, RI	Woodard & Curran	2,619.56	arsenic
July 2, 2013	Newport Federal Credit Union, Peary Drive, Newport, RI	Alliance Environmental Group	234.00	residential
July 1- 12, 2013	Navy Base EMS Facility	GZA	9,069.00	arsenic
July 15-16, 2013	Navy Bldg 1246 addition - NUWC	GZA	271.00	arsenic
August 13-28, 2013	Navy Steam Lines Project, Newport, RI	GZA	3,158.00	arsenic
August 1-14, 2013	Pell School	McPhail Associates	6,019.00	arsenic
September 10, 2013	75 Brainerd Road, Allston, MA	McPhail Associates	125.26	residential
September 24 - 26, 2013	Newport Met School	GZA	486.00	residential
September 23, 2013	343 Dillingham Avenue, Falmouth, MA	Alliance Environmental Group	37.50	residential
September 27, 2013	Navy Base Bldgs 668 & 669	Alliance Environmental Group	81.00	arsenic
<b>Total</b>			<b>22,100.32</b>	

**Notes**

none

# Appendix A – Photographs



**Photo 1 – At Park Avenue Gate**



**Photo 2 – Along Mason Avenue**



**Photo 3 – Along North Western Limit of Disturbance**



**Photo 4 –Looking West From Center of Site**

# **Appendix B – Analytical Data**

(data provided on disc)



**Tim O'Connor & Company, LLC**  
environmental consultation

April 18, 2013

RECEIVED  
D. E. M. / O. M. /  
2013 APR 22 P 2:14

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 1st Quarter 2013  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and renewed on September 17, 2012.

This report covers activities conducted during the period of January 1, 2013 to March 31, 2013.

**Construction Activities**

Construction activities during this reporting period included the delivery and management of three classifications of soil:

- Elevated Arsenic soils;
- Industrial soils; and
- Soil that is compliant with all RIDEM criteria.

Photos of the Property are attached as Appendix A.

**Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. Laboratory analysis data for Navy Building 990 and the Navy steam lines projects were submitted previously. Also due to the size of the data packages, Site Restoration Technologies LLC has separately provided the data packages for the projects at: Sam's Club - 941 Grinnell

124 Olney Avenue  
North Providence, RI 02911  
401.578.3889  
tim@toconnorconsulting.com  
www.toconnorconsulting.com

Street, Fall River, MA; 1325 Boylston Street, Boston, MA; and BC Saint Mary's Hall Boston, MA. The laboratory analysis data for the remaining new projects listed in the table are provided in Appendix B.

### Complaints

On March 21, 2013 RIDEM received a complaint regarding mud being tracked from the Property on to Park Avenue and Boyd's Lane. On March 22, 2013, RIDEM inspected the Property. The RIDEM representative noted two concerns: (1) "a significant amount of mud on the road" and (2) "the street sweeper was creating a dust issue when cleaning the road by not applying enough water during the process." The RIDEM representative spoke with the site operator and agreed to the following measures:

- Installing a power wash for vehicle cleaning prior to exiting the Property
- Improving the street sweeping operation
- Replacement of stone at the entrance.

RIDEM re-inspected the Property on March 26, 2013 and confirmed that the remedial measures that were previously discussed had been implemented and that no mud or dust concerns were observed.

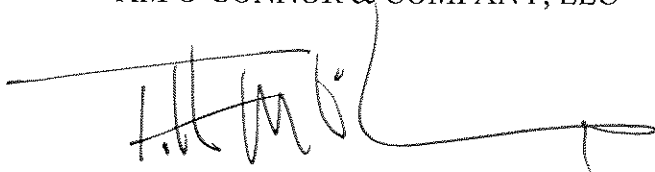
### Schedule

APE is relieved to see progress being made on the Sakonnet River Bridge and is actively competing with other landfills for available cover material including properly characterized soil from outside of our local area.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC



Timothy M. O'Connor, PE, LEED-AP  
Principal

RECEIVED  
D. ENR / 04/22/13  
2013 APR 22 P 2:15

**Former Portsmouth Landfill  
Soils Accepted  
1st Quarter 2013**

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
January 4, 2013	Navy Steam Lines Project, Newport, RI	GZA GeoEnvironmental	108.00	arsenic
January 7 - 8, 2013	Navy Big 990, Newport, RI	GZA GeoEnvironmental	99.87	arsenic
January 10, 2013	102 Defense Highway Newport	Proulx Environmental	12.00	arsenic
January 10 - 11, 2013	Navy Big. 1171, Newport, RI	Alliance Environmental Group	300.40	residential
January 23 - February 7, 2013	Beechwood Museum, Newport, RI	Woodard & Curran	7,422.21	arsenic
January 25, 2013	661 - 663 Killingly St. Johnston, RI	Alliance Environmental Group	9.81	industrial
March 6 - 25, 2013	Sam's Club 941 Grinnell Street, Fall River, MA	Environ	4,919.39	residential
March 11 - 13, 2013	1325 Boylston Street, Boston, MA	McPhail Associates	2,746.01	industrial
March 18 - 29, 2013	BC Saint Mary's Hall Boston, MA	Haley & Aldrich	6,382.45	industrial
March 21, 2013	1035 Bald Hill Road, Warwick, RI	Alliance Environmental Group	22.50	residential
		<b>Total</b>	<b>21,502.37</b>	

2013 APR 22 P 2:15

RECEIVED  
D.E.M. / CHINA

# Appendix A – Photographs



**Photo 1 – Looking North Along Park Avenue**



**Photo 2 – Along Northern Property Line**



**Photo 3 – Central Portion of Site**



**Photo 4 –Western Portion of Site**

# Appendix B – Analytical Data

(data provided on disc)

July 19, 2013

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 2nd Quarter 2013  
Former Portsmouth Landfill

Dear Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and renewed on September 17, 2012.

This report covers activities conducted during the period of April 1, 2013 to June 30, 2013.

### **Construction Activities**

Construction activities during this reporting period included the delivery and management of three classifications of soil:

- Elevated Arsenic soils;
- Industrial soils; and
- Soil that is compliant with all RIDEM criteria.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. Laboratory analysis data for 1325 Boylston Street, Sam's - Club 941 Grinnell Street, the Pell School, and the Pawtucket Bridge projects were submitted previously. Also due to the size of the data packages, Site Restoration Technologies LLC has separately provided the data packages for

124 Olney Avenue  
North Providence, RI 02911  
401.578.3889

tim@toconnorconsulting.com  
www.toconnorconsulting.com



the projects at: Pier 4 Lot 1 Development in Boston. The laboratory analysis data for the remaining new projects listed in the table are provided in Appendix B.

**Complaints**

On or about May 2, 2013 RIDEM received an odor complaint and visited the Property shortly thereafter. The RIDEM representative did not notice any overt indications of odors. However upon breaking apart clods of soil, the RIDEM representative did notice a "definite hydrogen sulfide odor." No further action was taken relative to the complaint. The RIDEM representative also collected soil samples at that time and those results were pending at the end of the quarter.

**Schedule**

The project team estimates that we are approximately 75% completed.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely  
TIM O'CONNOR & COMPANY, LLC

A handwritten signature in blue ink, appearing to read "Tim O'Connor", with a long horizontal line extending from the end of the signature.

Timothy M. O'Connor, PE, LEED-AP  
Principal

**Former Portsmouth Landfill  
Soils Accepted  
2nd Quarter 2013**

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
March 25 - 29, 2013 *	1325 Boylston Street, Boston, MA	McPhail Associates	3,154.97	industrial
April 1 - May 2, 2013	1325 Boylston Street, Boston, MA	McPhail Associates	4,966.70	industrial
April 2 - 29, 2013	Pier 4 Lot 1 Boston	Haley & Aldrich	12,644.80	industrial
April 1 - 5, 2013	WWTF Marlborough, MA	D'Amore Associates	2,853.50	industrial
April 9, 2013	Sam's Club 941 Grinnell Street, Fall River, MA	Environ	252.62	residential
April 29, 2013	1250 Hacker Street, Newport (Naval Exchange Store)	GZA	58.84	residential
April 11 - 12, 2013	509 Metacom Avenue, Bristol, RI	Alliance Environmental Group	240.00	arsenic
May 9, 2013	Fore River Bridge, Weymouth/Quincy, MA	McPhail Associates	95.24	residential
May 15- 31, 2013	Pawtucket Bridge	GZA	4,267.86	industrial
May 29 - June 28, 2013	Pell School	McPhail Associates	4,889.19	arsenic
June 3 - 5, 2013	Navy Base Bigs 668 & 669	Alliance Environmental Group	459.00	arsenic
June 21, 2013	Navy Base Big 22	Alliance Environmental Group	104.62	arsenic
June 24 - 28, 2013	Navy Base EMS Facility	GZA	4,778.90	arsenic
June 26 - 27, 2013	Newport Met School	GZA	2,253.00	residential
<b>Total</b>			<b>41,019.24</b>	

# Appendix A – Photographs



**Photo 1 –At Park Avenue Gate**



**Photo 2 – Central Portion of Site**



**Photo 3 – Along Northern Limit of Disturbance**



**Photo 4 –Looking East From Top of Stock Pile**

# Appendix B – Analytical Data

(data provided on disc)

February 3, 2014

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 4th Quarter 2013  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and renewed on September 16, 2013.

This report covers activities conducted during the period of October 1, 2013 to December 31, 2013.

### **Construction Activities**

Construction activities during this reporting period included the delivery and management of two classifications of soil:

- Industrial soils
- Elevated arsenic soils; and
- Soil that is compliant with all RIDEM criteria.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. Laboratory analysis data for projects that were submitted previously is: Newport Met School. The laboratory analysis data for the remaining new projects listed in the table are provided in Appendix B.

**Complaints**

To our knowledge RIDEM received no complaints during this reporting period.

No complaints were received directly by APE during this reporting period.

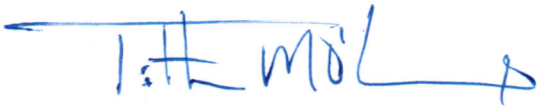
**Schedule**

The project team estimates that we are approximately 90% completed with the capping project covered by the existing RIDEM approvals. However we recently discovered additional areas where the landfill extends towards the coastal marsh along the western portion of the property. This area is not covered by the existing RIDEM approvals and consequently in December 2013, DiPrete Engineering, on behalf of APE, submitted a request to extend the capping project to cover this area. RIDEM has yet to respond to that request.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC

A handwritten signature in blue ink, appearing to read "Tim O'Connor", with a long horizontal line extending to the left.

Timothy M. O'Connor, PE, LEED-AP  
Principal



**Former Portsmouth Landfill Soils Accepted 4th Quarter 2013**

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
September 30 to December 11, 2013	Newport Met School	GZA	3,240.00	residential
October 7 & 8, 2013	Nimitz Field - Newport Navy Base	Proulx Environmental	18.00	residential
October 25 & 28, 2013	831 North Main Road, Jamestown, RI	Alliance Environmental Group	87.00	industrial
December 3 & 4, 2013	10 Coddington Hwy, Middletown, RI	Lakeshore Environmental	911.00	arsenic
December 16 - 27, 2013	Massachusetts Coastal Railroad, Fall River, MA	Millenium Environmental	2,981.00	residential
December 23 & 27, 2013	Massachusetts Coastal Railroad, Fall River, MA	Millenium Environmental	1,059.00	arsenic
		<b>Total</b>	4,951.00	

**Notes**  
none

# Appendix A – Photographs



**Photo 1 – Along Western Extent of Currently Approved Disturbed Area**



**Photo 2 – At Park Avenue Gate**



**Photo 3 –Northern Limit of Disturbance**



**Photo 4 –Looking East From Center of Site**

# **Appendix B – Analytical Data**

(data provided on disc)

April 21, 2014

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 1st Quarter 2014  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and March 18, 2014 and most recently renewed on September 16, 2013.

This report covers activities conducted during the period of January 1, 2014 to March 31, 2014.

### **Construction Activities**

Construction activities during this reporting period included the delivery and management of one classification of soil:

- Soil that is compliant with all RIDEM criteria.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. Laboratory analysis data for projects that were submitted previously is as follows: Massachusetts Coastal Railroad in Fall River. The laboratory analysis data for the remaining new projects listed in the table are provided in Appendix B.

**Complaints**

To our knowledge RIDEM received no complaints during this reporting period.

No complaints were received directly by APE during this reporting period.

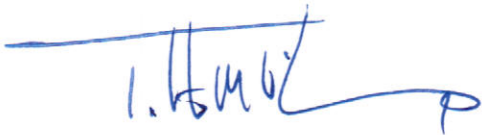
**Schedule**

The project team estimates that we are approximately 90% completed with the capping project covered by the existing State approvals. On March 18, 2014, RIDEM approved a plan to cap additional areas where the landfill extends towards the coastal marsh along the western portion of the property. However the Coastal Resources Management Council (CRMC) has yet to rule on our application. Consequently only a small volume of soil was brought to the landfill during this reporting period and very little progress was made towards completing the project. Given the lack of a CRMC ruling and the weak economy it is not possible for APE to forecast the project completion date.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC

A handwritten signature in blue ink, appearing to read "T. O'Connor", with a long horizontal line extending to the left.

Timothy M. O'Connor, PE, LEED-AP  
Principal

**Former Portsmouth Landfill Soils Accepted 1st Quarter 2014**

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
January 7 to February 10, 2014	Boston Fan Pier	McPhail Associates	1,265.15	residential
January 13 to February 6, 2014	Massachusetts Coastal Railroad, Fall River, MA	Millenium Environmental	3,580.39	residential
		<b>Total</b>	<b>4,845.54</b>	

**Notes**  
none



# Appendix A – Photographs



**Photo 1 –Along Park Avenue**



**Photo 2 – Along Northwestern Limit of Disturbance**



**Photo 3 –The Central Portion of the Site**



**Photo 4 –Along Western Current Limit of Disturbance**

# **Appendix B – Analytical Data**

(data provided on disc)

July 11, 2014

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 2nd Quarter 2014  
Former Portsmouth Landfill

Dear Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and March 18, 2014 and most recently renewed on September 16, 2013.

This report covers activities conducted during the period of April 1, 2014 to June 30, 2014.

### **Construction Activities**

Construction activities during this reporting period included the delivery and management of one classification of soil:

- Soil that is compliant with all RIDEM criteria.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. The laboratory analysis data for the new project listed in the table are provided in Appendix B.

**Complaints**

To our knowledge RIDEM received no complaints during this reporting period.

No complaints were received directly by APE during this reporting period.

**Schedule**

The project team estimates that we are approximately 80% completed with the capping project (inclusive of the newly identified areas). On July 8, 2014, APE applied for renewal of our BUDA. The basis for that request is explained in the letter. One reason for the delay is the continued weakness of the economy, which also makes it impractical to attempt to forecast the project completion date.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC

A handwritten signature in blue ink, appearing to read "T.M. O'Connor", with a long horizontal flourish extending to the left and right.

Timothy M. O'Connor, PE, LEED-AP  
Principal

# Appendix A – Photographs



**Photo 1 – Along the Southern Limit of Disturbance**



**Photo 2 – Along Northern Limit of Disturbance**





**Photo 3 –The Southwestern Portion of the Landfill**



**Photo 4 –Along Northeastern Limit of Disturbance**

# Appendix B – Analytical Data



*CERTIFICATE OF ANALYSIS*

Gary Buckman  
 Brighter Horizons  
 P.O. Box 219  
 Chelmsford, MA 01824

**RE: Jamestown (N/A)**  
**ESS Laboratory Work Order Number: 1405288**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard  
 Laboratory Director

**REVIEWED**  
 By ESS Laboratory at 1:12 pm, May 21, 2014

**Analytical Summary**

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



**ESS Laboratory**  
*Division of Thielsch Engineering, Inc.*

**BAL Laboratory**

*The Microbiology Division  
of Thielsch Engineering, Inc.*



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**SAMPLE RECEIPT**

The following samples were received on May 14, 2014 for the analyses specified on the enclosed Chain of Custody Record.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1405288-01	Sediments SED-1	Soil	6010B, 7010, 7471A, 8082A, 8100M, 8260B, 8270D



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**PROJECT NARRATIVE**

**5035/8260B Volatile Organic Compounds / Methanol**

1405288-01 Present in Method Blank (B).

Chloroform

CXE0213-CCV1 Continuing Calibration recovery is above upper control limit (C+).

1,4-Dioxane - Screen (164% @ 70-130%)

**8100M Total Petroleum Hydrocarbons**

CE41330-BS1 Blank Spike recovery is above upper control limit (B+).

Decane (C10) (160% @ 40-140%)

CE41330-BSD1 Blank Spike recovery is above upper control limit (B+).

Decane (C10) (171% @ 40-140%)

**8270C Semi-Volatile Organic Compounds**

CE41339-BS1 Blank Spike recovery is below lower control limit (B-).

Hexachlorocyclopentadiene (39% @ 40-140%)

CE41339-BSD1 Blank Spike recovery is below lower control limit (B-).

Hexachlorocyclopentadiene (38% @ 40-140%)

CE41339-BSD1 Relative percent difference for duplicate is outside of criteria (D+).

N-Nitrosodimethylamine (38%)

CXE0209-CCV1 Calibration required quadratic regression (Q).

2,4-Dinitrophenol (71% @ 80-120%), Pentachlorophenol (108% @ 80-120%)

CXE0209-CCV1 Continuing Calibration recovery is above upper control limit (C+).

Di-n-octylphthalate (122% @ 80-120%)

CXE0209-CCV1 Continuing Calibration recovery is below lower control limit (C-).

2,4-Dinitrophenol (71% @ 80-120%), Benzoic Acid (67% @ 80-120%), Hexachlorocyclopentadiene (69% @ 80-120%)

CXE0209-CCV1 Initial Calibration Verification recovery is outside of control limit (ICV).

4-Chloroaniline, Hexachlorocyclopentadiene

**Total Metals Solid**

CE41409-BS1 Blank Spike recovery is below lower control limit (B-).

Cadmium (78% @ 80-120%), Selenium (75% @ 77-122%), Zinc (79% @ 80-120%)

No other observations noted.

End of Project Narrative.



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**DATA USABILITY LINKS**

- Definitions of Quality Control Parameters
- Semivolatile Organics Internal Standard Information
- Semivolatile Organics Surrogate Information
- Volatile Organics Internal Standard Information
- Volatile Organics Surrogate Information
- EPH and VPH Alkane Lists

**CURRENT SW-846 METHODOLOGY VERSIONS**

**Analytical Methods**

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

**Prep Methods**

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown  
Client Sample ID: Sediments SED-1  
Date Sampled: 05/14/14 09:00  
Percent Solids: 86

ESS Laboratory Work Order: 1405288  
ESS Laboratory Sample ID: 1405288-01  
Sample Matrix: Soil  
Units: mg/kg dry

Extraction Method: 3050B

**Total Metals Solid**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (5.3)		6010B		1	KJK	05/15/14 16:40	2.2	100	CE41409
Arsenic	6.3 (2.6)		6010B		1	KJK	05/15/14 16:40	2.2	100	CE41409
Barium	24.7 (2.6)		6010B		1	KJK	05/15/14 16:40	2.2	100	CE41409
Beryllium	0.34 (0.11)		6010B		1	KJK	05/15/14 16:40	2.2	100	CE41409
Cadmium	ND (0.53)		6010B		1	KJK	05/15/14 16:40	2.2	100	CE41409
Chromium	22.7 (1.1)		6010B		1	KJK	05/15/14 16:40	2.2	100	CE41409
Copper	19.9 (2.6)		6010B		1	KJK	05/15/14 16:40	2.2	100	CE41409
Lead	42.5 (5.3)		6010B		1	KJK	05/15/14 16:40	2.2	100	CE41409
Mercury	ND (0.031)		7471A		1	NAR	05/14/14 16:53	0.73	40	CE41428
Nickel	5.7 (2.6)		6010B		1	KJK	05/15/14 16:40	2.2	100	CE41409
Selenium	ND (15.8)		6010B		3	KJK	05/16/14 13:14	2.2	100	CE41409
Silver	ND (0.53)		6010B		1	KJK	05/15/14 16:40	2.2	100	CE41409
Thallium	ND (1.30)		7010		5	NAR	05/16/14 14:51	2.2	100	CE41409
Zinc	74.2 (2.6)		6010B		1	KJK	05/15/14 16:40	2.2	100	CE41409



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown  
Client Sample ID: Sediments SED-1  
Date Sampled: 05/14/14 09:00  
Percent Solids: 86  
Initial Volume: 9.1  
Final Volume: 15  
Extraction Method: 5035

ESS Laboratory Work Order: 1405288  
ESS Laboratory Sample ID: 1405288-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Methanol**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.207)	0.0180	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,1,1-Trichloroethane	ND (0.103)	0.0182	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,1,2,2-Tetrachloroethane	ND (0.103)	0.0281	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,1,2-Trichloroethane	ND (0.103)	0.0258	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,1-Dichloroethane	ND (0.103)	0.0165	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,1-Dichloroethene	ND (0.103)	0.0254	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,1-Dichloropropene	ND (0.103)	0.0159	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,2,3-Trichlorobenzene	ND (0.103)	0.0345	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,2,3-Trichloropropane	ND (0.103)	0.0256	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,2,4-Trichlorobenzene	ND (0.103)	0.0227	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,2,4-Trimethylbenzene	ND (0.103)	0.0199	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,2-Dibromo-3-Chloropropane	ND (0.620)	0.207	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,2-Dibromoethane	ND (0.103)	0.0263	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,2-Dichlorobenzene	ND (0.103)	0.0147	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,2-Dichloroethane	ND (0.103)	0.0277	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,2-Dichloropropane	ND (0.103)	0.0271	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,3,5-Trimethylbenzene	ND (0.103)	0.0182	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,3-Dichlorobenzene	ND (0.103)	0.0130	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,3-Dichloropropane	ND (0.103)	0.0232	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,4-Dichlorobenzene	ND (0.103)	0.0275	8260B		1	05/14/14 14:56	CXE0213	CE41424
1,4-Dioxane - Screen	ND (10.3)	3.45	8260B		1	05/14/14 14:56	CXE0213	CE41424
1-Chlorohexane	ND (0.103)	0.0196	8260B		1	05/14/14 14:56	CXE0213	CE41424
2,2-Dichloropropane	ND (0.207)	0.0354	8260B		1	05/14/14 14:56	CXE0213	CE41424
2-Butanone	ND (2.58)	0.598	8260B		1	05/14/14 14:56	CXE0213	CE41424
2-Chlorotoluene	ND (0.103)	0.0292	8260B		1	05/14/14 14:56	CXE0213	CE41424
2-Hexanone	ND (1.03)	0.178	8260B		1	05/14/14 14:56	CXE0213	CE41424
4-Chlorotoluene	ND (0.103)	0.0134	8260B		1	05/14/14 14:56	CXE0213	CE41424
4-Isopropyltoluene	ND (0.103)	0.0184	8260B		1	05/14/14 14:56	CXE0213	CE41424
4-Methyl-2-Pentanone	ND (1.03)	0.124	8260B		1	05/14/14 14:56	CXE0213	CE41424
Acetone	ND (2.58)	0.765	8260B		1	05/14/14 14:56	CXE0213	CE41424
Benzene	ND (0.103)	0.0167	8260B		1	05/14/14 14:56	CXE0213	CE41424
Bromobenzene	ND (0.103)	0.0283	8260B		1	05/14/14 14:56	CXE0213	CE41424





*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown  
Client Sample ID: Sediments SED-1  
Date Sampled: 05/14/14 09:00  
Percent Solids: 86  
Initial Volume: 9.1  
Final Volume: 15  
Extraction Method: 5035

ESS Laboratory Work Order: 1405288  
ESS Laboratory Sample ID: 1405288-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Methanol**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.103)	0.0335	8260B		1	05/14/14 14:56	CXE0213	CE41424
Bromodichloromethane	ND (0.103)	0.0143	8260B		1	05/14/14 14:56	CXE0213	CE41424
Bromoform	ND (0.103)	0.0298	8260B		1	05/14/14 14:56	CXE0213	CE41424
Bromomethane	ND (0.207)	0.0691	8260B		1	05/14/14 14:56	CXE0213	CE41424
Carbon Disulfide	ND (0.103)	0.0153	8260B		1	05/14/14 14:56	CXE0213	CE41424
Carbon Tetrachloride	ND (0.103)	0.0180	8260B		1	05/14/14 14:56	CXE0213	CE41424
Chlorobenzene	ND (0.103)	0.0163	8260B		1	05/14/14 14:56	CXE0213	CE41424
Chloroethane	ND (0.207)	0.0689	8260B		1	05/14/14 14:56	CXE0213	CE41424
<b>Chloroform</b>	<b>B, J 0.0393 (0.103)</b>	0.0213	8260B		1	05/14/14 14:56	CXE0213	CE41424
Chloromethane	ND (0.207)	0.0263	8260B		1	05/14/14 14:56	CXE0213	CE41424
cis-1,2-Dichloroethene	ND (0.103)	0.0256	8260B		1	05/14/14 14:56	CXE0213	CE41424
cis-1,3-Dichloropropene	ND (0.103)	0.0234	8260B		1	05/14/14 14:56	CXE0213	CE41424
Dibromochloromethane	ND (0.103)	0.0261	8260B		1	05/14/14 14:56	CXE0213	CE41424
Dibromomethane	ND (0.103)	0.0327	8260B		1	05/14/14 14:56	CXE0213	CE41424
Dichlorodifluoromethane	ND (0.103)	0.0180	8260B		1	05/14/14 14:56	CXE0213	CE41424
Diethyl Ether	ND (0.103)	0.0263	8260B		1	05/14/14 14:56	CXE0213	CE41424
Di-isopropyl ether	ND (0.103)	0.0194	8260B		1	05/14/14 14:56	CXE0213	CE41424
Ethyl tertiary-butyl ether	ND (0.103)	0.0261	8260B		1	05/14/14 14:56	CXE0213	CE41424
<b>Ethylbenzene</b>	<b>J 0.0538 (0.103)</b>	0.0134	8260B		1	05/14/14 14:56	CXE0213	CE41424
Hexachlorobutadiene	ND (0.103)	0.0345	8260B		1	05/14/14 14:56	CXE0213	CE41424
Isopropylbenzene	ND (0.103)	0.0182	8260B		1	05/14/14 14:56	CXE0213	CE41424
Methyl tert-Butyl Ether	ND (0.103)	0.0165	8260B		1	05/14/14 14:56	CXE0213	CE41424
Methylene Chloride	ND (0.517)	0.0271	8260B		1	05/14/14 14:56	CXE0213	CE41424
Naphthalene	ND (0.103)	0.0271	8260B		1	05/14/14 14:56	CXE0213	CE41424
n-Butylbenzene	ND (0.103)	0.0254	8260B		1	05/14/14 14:56	CXE0213	CE41424
n-Propylbenzene	ND (0.103)	0.0252	8260B		1	05/14/14 14:56	CXE0213	CE41424
sec-Butylbenzene	ND (0.103)	0.0139	8260B		1	05/14/14 14:56	CXE0213	CE41424
Styrene	ND (0.103)	0.0136	8260B		1	05/14/14 14:56	CXE0213	CE41424
tert-Butylbenzene	ND (0.103)	0.0242	8260B		1	05/14/14 14:56	CXE0213	CE41424
Tertiary-amyl methyl ether	ND (0.103)	0.0149	8260B		1	05/14/14 14:56	CXE0213	CE41424
Tetrachloroethene	ND (0.103)	0.0345	8260B		1	05/14/14 14:56	CXE0213	CE41424
Tetrahydrofuran	ND (1.03)	0.267	8260B		1	05/14/14 14:56	CXE0213	CE41424



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
 Client Project ID: Jamestown  
 Client Sample ID: Sediments SED-1  
 Date Sampled: 05/14/14 09:00  
 Percent Solids: 86  
 Initial Volume: 9.1  
 Final Volume: 15  
 Extraction Method: 5035

ESS Laboratory Work Order: 1405288  
 ESS Laboratory Sample ID: 1405288-01  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: MD

**5035/8260B Volatile Organic Compounds / Methanol**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
<b>Toluene</b>	<b>J 0.0455</b> (0.103)	0.0263	8260B		1	05/14/14 14:56	CXE0213	CE41424
trans-1,2-Dichloroethene	ND (0.103)	0.0339	8260B		1	05/14/14 14:56	CXE0213	CE41424
trans-1,3-Dichloropropene	ND (0.103)	0.0318	8260B		1	05/14/14 14:56	CXE0213	CE41424
Trichloroethene	ND (0.103)	0.0213	8260B		1	05/14/14 14:56	CXE0213	CE41424
Trichlorofluoromethane	ND (0.103)	0.0273	8260B		1	05/14/14 14:56	CXE0213	CE41424
Vinyl Acetate	ND (0.517)	0.0213	8260B		1	05/14/14 14:56	CXE0213	CE41424
Vinyl Chloride	ND (0.103)	0.0341	8260B		1	05/14/14 14:56	CXE0213	CE41424
<b>Xylene O</b>	<b>J 0.0455</b> (0.103)	0.0199	8260B		1	05/14/14 14:56	CXE0213	CE41424
<b>Xylene P,M</b>	<b>J 0.188</b> (0.207)	0.0401	8260B		1	05/14/14 14:56	CXE0213	CE41424
<b>Xylenes (Total)</b>	<b>0.234</b> (0.207)		8260B		1	05/14/14 14:56		[CALC]

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	94 %		70-130
Surrogate: 4-Bromofluorobenzene	92 %		70-130
Surrogate: Dibromofluoromethane	96 %		70-130
Surrogate: Toluene-d8	88 %		70-130



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown  
Client Sample ID: Sediments SED-1  
Date Sampled: 05/14/14 09:00  
Percent Solids: 86  
Initial Volume: 19.3  
Final Volume: 10  
Extraction Method: 3540

ESS Laboratory Work Order: 1405288  
ESS Laboratory Sample ID: 1405288-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TAJ  
Prepared: 5/14/14 18:46

**8082 Polychlorinated Biphenyls (PCB)**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0600)		8082A		1	05/16/14 21:07		CE42125
Aroclor 1221	ND (0.0600)		8082A		1	05/16/14 21:07		CE42125
Aroclor 1232	ND (0.0600)		8082A		1	05/16/14 21:07		CE42125
Aroclor 1242	ND (0.0600)		8082A		1	05/16/14 21:07		CE42125
Aroclor 1248	ND (0.0600)		8082A		1	05/16/14 21:07		CE42125
Aroclor 1254	ND (0.0600)		8082A		1	05/16/14 21:07		CE42125
Aroclor 1260	ND (0.0600)		8082A		1	05/16/14 21:07		CE42125
Aroclor 1262	ND (0.0600)		8082A		1	05/16/14 21:07		CE42125
Aroclor 1268	ND (0.0600)		8082A		1	05/16/14 21:07		CE42125

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
<i>Surrogate: Decachlorobiphenyl</i>	83 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	84 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	92 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	89 %		30-150



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
 Client Project ID: Jamestown  
 Client Sample ID: Sediments SED-1  
 Date Sampled: 05/14/14 09:00  
 Percent Solids: 86  
 Initial Volume: 19.6  
 Final Volume: 1  
 Extraction Method: 3546

ESS Laboratory Work Order: 1405288  
 ESS Laboratory Sample ID: 1405288-01  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: DPS  
 Prepared: 5/14/14 10:56

**8100M Total Petroleum Hydrocarbons**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	278 (44.3)		8100M		1	05/14/14 20:30	CXE0221	CE41330
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		94 %		40-140				



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown  
Client Sample ID: Sediments SED-1  
Date Sampled: 05/14/14 09:00  
Percent Solids: 86  
Initial Volume: 14.4  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1405288  
ESS Laboratory Sample ID: 1405288-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: IBM  
Prepared: 5/14/14 10:56

**8270C Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
1,2,4-Trichlorobenzene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
1,2-Dichlorobenzene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
1,3-Dichlorobenzene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
1,4-Dichlorobenzene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
2,3,4,6-Tetrachlorophenol	ND (2.02)		8270D		1	05/14/14 16:56	CXE0209	CE41339
2,4,5-Trichlorophenol	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
2,4,6-Trichlorophenol	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
2,4-Dichlorophenol	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
2,4-Dimethylphenol	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
2,4-Dinitrophenol	ND (2.02)		8270D		1	05/14/14 16:56	CXE0209	CE41339
2,4-Dinitrotoluene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
2,6-Dinitrotoluene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
2-Chloronaphthalene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
2-Chlorophenol	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
2-Methylnaphthalene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
2-Methylphenol	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
2-Nitroaniline	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
2-Nitrophenol	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
3,3'-Dichlorobenzidine	ND (0.805)		8270D		1	05/14/14 16:56	CXE0209	CE41339
3+4-Methylphenol	ND (0.805)		8270D		1	05/14/14 16:56	CXE0209	CE41339
3-Nitroaniline	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
4,6-Dinitro-2-Methylphenol	ND (2.02)		8270D		1	05/14/14 16:56	CXE0209	CE41339
4-Bromophenyl-phenylether	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
4-Chloro-3-Methylphenol	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
4-Chloroaniline	ND (0.805)		8270D		1	05/14/14 16:56	CXE0209	CE41339
4-Chloro-phenyl-phenyl ether	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
4-Nitroaniline	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
4-Nitrophenol	ND (2.02)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Acenaphthene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Acenaphthylene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Acetophenone	ND (0.805)		8270D		1	05/14/14 16:56	CXE0209	CE41339



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown  
Client Sample ID: Sediments SED-1  
Date Sampled: 05/14/14 09:00  
Percent Solids: 86  
Initial Volume: 14.4  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1405288  
ESS Laboratory Sample ID: 1405288-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: IBM  
Prepared: 5/14/14 10:56

**8270C Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aniline	ND (0.805)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Anthracene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Azobenzene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Benzo(a)anthracene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Benzo(a)pyrene	ND (0.202)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Benzo(b)fluoranthene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Benzo(g,h,i)perylene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Benzo(k)fluoranthene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Benzoic Acid	ND (2.02)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Benzyl Alcohol	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
bis(2-Chloroethoxy)methane	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
bis(2-Chloroethyl)ether	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
bis(2-chloroisopropyl)Ether	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
<b>bis(2-Ethylhexyl)phthalate</b>	<b>0.529</b> (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Butylbenzylphthalate	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Carbazole	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Chrysene	ND (0.202)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Dibenzo(a,h)Anthracene	ND (0.202)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Dibenzofuran	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Diethylphthalate	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Dimethylphthalate	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Di-n-butylphthalate	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Di-n-octylphthalate	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Fluoranthene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Fluorene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Hexachlorobenzene	ND (0.202)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Hexachlorobutadiene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Hexachlorocyclopentadiene	ND (2.02)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Hexachloroethane	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Indeno(1,2,3-cd)Pyrene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Isophorone	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Naphthalene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339



# ESS Laboratory

Division of Thielsch Engineering, Inc.

# BAL Laboratory

The Microbiology Division  
of Thielsch Engineering, Inc.



## CERTIFICATE OF ANALYSIS

Client Name: Brighter Horizons  
 Client Project ID: Jamestown  
 Client Sample ID: Sediments SED-1  
 Date Sampled: 05/14/14 09:00  
 Percent Solids: 86  
 Initial Volume: 14.4  
 Final Volume: 0.5  
 Extraction Method: 3546

ESS Laboratory Work Order: 1405288  
 ESS Laboratory Sample ID: 1405288-01  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: IBM  
 Prepared: 5/14/14 10:56

### 8270C Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Nitrobenzene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
N-Nitrosodimethylamine	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
N-Nitroso-Di-n-Propylamine	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
N-nitrosodiphenylamine	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Pentachlorophenol	ND (2.02)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Phenanthrene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Phenol	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Pyrene	ND (0.402)		8270D		1	05/14/14 16:56	CXE0209	CE41339
Pyridine	ND (2.02)		8270D		1	05/14/14 16:56	CXE0209	CE41339

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichlorobenzene-d4	51 %		30-130
Surrogate: 2,4,6-Tribromophenol	109 %		30-130
Surrogate: 2-Chlorophenol-d4	53 %		30-130
Surrogate: 2-Fluorobiphenyl	66 %		30-130
Surrogate: 2-Fluorophenol	45 %		30-130
Surrogate: Nitrobenzene-d5	52 %		30-130
Surrogate: Phenol-d6	56 %		30-130
Surrogate: p-Terphenyl-d14	89 %		30-130



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**Total Metals Solid**

**Batch CE41409 - 3050B**

<b>Blank</b>										
Antimony	ND	5.0	mg/kg wet							
Arsenic	ND	2.5	mg/kg wet							
Barium	ND	2.5	mg/kg wet							
Beryllium	ND	0.10	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.0	mg/kg wet							
Copper	ND	2.5	mg/kg wet							
Lead	ND	5.0	mg/kg wet							
Nickel	ND	2.5	mg/kg wet							
Selenium	ND	5.0	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	0.25	mg/kg wet							
Zinc	ND	2.5	mg/kg wet							

<b>Blank</b>										
Barium	ND	2.5	mg/kg wet							

<b>LCS</b>										
Antimony	96.3	14.1	mg/kg wet	116.0		83	80-120			
Arsenic	102	7.0	mg/kg wet	122.0		84	80-120			
Barium	136	7.0	mg/kg wet	167.0		82	80-120			
Beryllium	44.7	0.30	mg/kg wet	54.30		82	80-120			
Cadmium	68.9	1.42	mg/kg wet	88.00		78	80-120			B-
Chromium	83.3	2.8	mg/kg wet	102.0		82	80-120			
Copper	64.8	7.0	mg/kg wet	78.00		83	80-120			
Lead	79.8	14.1	mg/kg wet	94.50		84	80-120			
Nickel	47.1	7.0	mg/kg wet	56.30		84	80-120			
Selenium	118	14.1	mg/kg wet	157.0		75	77-122			B-
Silver	28.4	1.42	mg/kg wet	34.20		83	80-120			
Thallium	98.5	34.9	mg/kg wet	116.0		85	80-120			
Zinc	163	7.0	mg/kg wet	207.0		79	80-120			B-

<b>LCS Dup</b>										
Antimony	103	16.1	mg/kg wet	116.0		89	80-120	7	20	
Arsenic	107	8.1	mg/kg wet	122.0		88	80-120	4	20	
Barium	141	8.1	mg/kg wet	167.0		84	80-120	3	20	
Beryllium	45.8	0.34	mg/kg wet	54.30		84	80-120	2	20	
Cadmium	70.7	1.62	mg/kg wet	88.00		80	80-120	3	20	
Chromium	86.2	3.2	mg/kg wet	102.0		85	80-120	3	20	
Copper	68.0	8.1	mg/kg wet	78.00		87	80-120	5	20	
Lead	81.1	16.1	mg/kg wet	94.50		86	80-120	2	20	
Nickel	48.6	8.1	mg/kg wet	56.30		86	80-120	3	20	
Selenium	123	16.1	mg/kg wet	157.0		78	77-122	4	20	
Silver	30.1	1.62	mg/kg wet	34.20		88	80-120	6	20	
Thallium	103	39.9	mg/kg wet	116.0		89	80-120	4	20	
Zinc	168	8.1	mg/kg wet	207.0		81	80-120	3	20	





*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
 Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**Total Metals Solid**

**Batch CE41409 - 3050B**

Reference										
Barium	132	7.6	mg/kg wet	167.0		79	82-117			
Reference										
Barium	131	7.5	mg/kg wet	167.0		78	82-117			
Reference										
Barium	133	7.3	mg/kg wet	167.0		80	82-117			
Reference										
Barium	137	7.3	mg/kg wet	167.0		82	82-117			

**Batch CE41428 - 7471A**

Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	3.68	1.50	mg/kg wet	3.980		92	80-120			
LCS Dup										
Mercury	3.68	1.27	mg/kg wet	3.980		92	80-120	0.03	20	

**5035/8260B Volatile Organic Compounds / Methanol**

**Batch CE41424 - 5035**

Blank										
1,1,1,2-Tetrachloroethane	ND	0.100	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0500	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0500	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0500	mg/kg wet							
1,1-Dichloroethane	ND	0.0500	mg/kg wet							
1,1-Dichloroethene	ND	0.0500	mg/kg wet							
1,1-Dichloropropene	ND	0.0500	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0500	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0500	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0500	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0500	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.300	mg/kg wet							
1,2-Dibromoethane	ND	0.0500	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,2-Dichloroethane	ND	0.0500	mg/kg wet							
1,2-Dichloropropane	ND	0.0500	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0500	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,3-Dichloropropane	ND	0.0500	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,4-Dioxane - Screen	ND	5.00	mg/kg wet							
1-Chlorohexane	ND	0.0500	mg/kg wet							
2,2-Dichloropropane	ND	0.100	mg/kg wet							
2-Butanone	ND	1.25	mg/kg wet							



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

**Batch CE41424 - 5035**

2-Chlorotoluene	ND	0.0500	mg/kg wet							
2-Hexanone	ND	0.500	mg/kg wet							
4-Chlorotoluene	ND	0.0500	mg/kg wet							
4-Isopropyltoluene	ND	0.0500	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.500	mg/kg wet							
Acetone	ND	1.25	mg/kg wet							
Benzene	ND	0.0500	mg/kg wet							
Bromobenzene	ND	0.0500	mg/kg wet							
Bromochloromethane	ND	0.0500	mg/kg wet							
Bromodichloromethane	ND	0.0500	mg/kg wet							
Bromoform	ND	0.0500	mg/kg wet							
Bromomethane	ND	0.100	mg/kg wet							
Carbon Disulfide	ND	0.0500	mg/kg wet							
Carbon Tetrachloride	ND	0.0500	mg/kg wet							
Chlorobenzene	ND	0.0500	mg/kg wet							
Chloroethane	ND	0.100	mg/kg wet							
Chloroform	0.0160	0.0500	mg/kg wet							J
Chloromethane	ND	0.100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0500	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0500	mg/kg wet							
Dibromochloromethane	ND	0.0500	mg/kg wet							
Dibromomethane	ND	0.0500	mg/kg wet							
Dichlorodifluoromethane	ND	0.0500	mg/kg wet							
Diethyl Ether	ND	0.0500	mg/kg wet							
Di-isopropyl ether	ND	0.0500	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0500	mg/kg wet							
Ethylbenzene	ND	0.0500	mg/kg wet							
Hexachlorobutadiene	ND	0.0500	mg/kg wet							
Isopropylbenzene	ND	0.0500	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0500	mg/kg wet							
Methylene Chloride	ND	0.250	mg/kg wet							
Naphthalene	ND	0.0500	mg/kg wet							
n-Butylbenzene	ND	0.0500	mg/kg wet							
n-Propylbenzene	ND	0.0500	mg/kg wet							
sec-Butylbenzene	ND	0.0500	mg/kg wet							
Styrene	ND	0.0500	mg/kg wet							
tert-Butylbenzene	ND	0.0500	mg/kg wet							
Tertiary-amiyl methyl ether	ND	0.0500	mg/kg wet							
Tetrachloroethene	ND	0.0500	mg/kg wet							
Tetrahydrofuran	ND	0.500	mg/kg wet							
Toluene	ND	0.0500	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0500	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0500	mg/kg wet							
Trichloroethene	ND	0.0500	mg/kg wet							
Vinyl Acetate	ND	0.250	mg/kg wet							



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

**Batch CE41424 - 5035**

Vinyl Chloride	ND	0.0500	mg/kg wet							
Xylene O	ND	0.0500	mg/kg wet							
Xylene P,M	ND	0.100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	2.34		mg/kg wet	2.500		94	70-130			
Surrogate: 4-Bromofluorobenzene	2.32		mg/kg wet	2.500		93	70-130			
Surrogate: Dibromofluoromethane	2.43		mg/kg wet	2.500		97	70-130			
Surrogate: Toluene-d8	2.22		mg/kg wet	2.500		89	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	2.44	0.100	mg/kg wet	2.500		98	70-130			
1,1,1-Trichloroethane	2.62	0.0500	mg/kg wet	2.500		105	70-130			
1,1,2,2-Tetrachloroethane	2.23	0.0500	mg/kg wet	2.500		89	70-130			
1,1,2-Trichloroethane	2.32	0.0500	mg/kg wet	2.500		93	70-130			
1,1-Dichloroethane	2.25	0.0500	mg/kg wet	2.500		90	70-130			
1,1-Dichloroethene	2.34	0.0500	mg/kg wet	2.500		93	70-130			
1,1-Dichloropropene	2.47	0.0500	mg/kg wet	2.500		99	70-130			
1,2,3-Trichlorobenzene	2.37	0.0500	mg/kg wet	2.500		95	70-130			
1,2,3-Trichloropropane	2.18	0.0500	mg/kg wet	2.500		87	70-130			
1,2,4-Trichlorobenzene	2.41	0.0500	mg/kg wet	2.500		96	70-130			
1,2,4-Trimethylbenzene	2.37	0.0500	mg/kg wet	2.500		95	70-130			
1,2-Dibromo-3-Chloropropane	2.18	0.300	mg/kg wet	2.500		87	70-130			
1,2-Dibromoethane	2.42	0.0500	mg/kg wet	2.500		97	70-130			
1,2-Dichlorobenzene	2.39	0.0500	mg/kg wet	2.500		96	70-130			
1,2-Dichloroethane	2.51	0.0500	mg/kg wet	2.500		100	70-130			
1,2-Dichloropropane	2.21	0.0500	mg/kg wet	2.500		88	70-130			
1,3,5-Trimethylbenzene	2.46	0.0500	mg/kg wet	2.500		98	70-130			
1,3-Dichlorobenzene	2.39	0.0500	mg/kg wet	2.500		96	70-130			
1,3-Dichloropropane	2.27	0.0500	mg/kg wet	2.500		91	70-130			
1,4-Dichlorobenzene	2.26	0.0500	mg/kg wet	2.500		90	70-130			
1,4-Dioxane - Screen	56.3	5.00	mg/kg wet	50.00		113	44-241			
1-Chlorohexane	2.42	0.0500	mg/kg wet	2.500		97	70-130			
2,2-Dichloropropane	2.68	0.100	mg/kg wet	2.500		107	70-130			
2-Butanone	10.6	1.25	mg/kg wet	12.50		85	70-130			
2-Chlorotoluene	2.48	0.0500	mg/kg wet	2.500		99	70-130			
2-Hexanone	11.0	0.500	mg/kg wet	12.50		88	70-130			
4-Chlorotoluene	2.37	0.0500	mg/kg wet	2.500		95	70-130			
4-Isopropyltoluene	2.40	0.0500	mg/kg wet	2.500		96	70-130			
4-Methyl-2-Pentanone	10.4	0.500	mg/kg wet	12.50		83	70-130			
Acetone	10.8	1.25	mg/kg wet	12.50		86	70-130			
Benzene	2.34	0.0500	mg/kg wet	2.500		94	70-130			
Bromobenzene	2.48	0.0500	mg/kg wet	2.500		99	70-130			
Bromochloromethane	2.42	0.0500	mg/kg wet	2.500		97	70-130			
Bromodichloromethane	2.50	0.0500	mg/kg wet	2.500		100	70-130			
Bromoform	2.57	0.0500	mg/kg wet	2.500		103	70-130			
Bromomethane	2.39	0.100	mg/kg wet	2.500		96	70-130			
Carbon Disulfide	2.20	0.0500	mg/kg wet	2.500		88	70-130			



**CERTIFICATE OF ANALYSIS**

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**5035/8260B Volatile Organic Compounds / Methanol**

**Batch CE41424 - 5035**

Carbon Tetrachloride	2.62	0.0500	mg/kg wet	2.500		105	70-130			
Chlorobenzene	2.49	0.0500	mg/kg wet	2.500		100	70-130			
Chloroethane	2.55	0.100	mg/kg wet	2.500		102	70-130			
Chloroform	2.33	0.0500	mg/kg wet	2.500		93	70-130			
Chloromethane	1.92	0.100	mg/kg wet	2.500		77	70-130			
cis-1,2-Dichloroethene	2.38	0.0500	mg/kg wet	2.500		95	70-130			
cis-1,3-Dichloropropene	2.57	0.0500	mg/kg wet	2.500		103	70-130			
Dibromochloromethane	2.54	0.0500	mg/kg wet	2.500		102	70-130			
Dibromomethane	2.40	0.0500	mg/kg wet	2.500		96	70-130			
Dichlorodifluoromethane	1.92	0.0500	mg/kg wet	2.500		77	70-130			
Diethyl Ether	2.14	0.0500	mg/kg wet	2.500		86	70-130			
Di-isopropyl ether	2.12	0.0500	mg/kg wet	2.500		85	70-130			
Ethyl tertiary-butyl ether	2.36	0.0500	mg/kg wet	2.500		94	70-130			
Ethylbenzene	2.48	0.0500	mg/kg wet	2.500		99	70-130			
Hexachlorobutadiene	2.44	0.0500	mg/kg wet	2.500		97	70-130			
Isopropylbenzene	2.35	0.0500	mg/kg wet	2.500		94	70-130			
Methyl tert-Butyl Ether	2.39	0.0500	mg/kg wet	2.500		96	70-130			
Methylene Chloride	2.31	0.250	mg/kg wet	2.500		92	70-130			
Naphthalene	2.37	0.0500	mg/kg wet	2.500		95	70-130			
n-Butylbenzene	2.45	0.0500	mg/kg wet	2.500		98	70-130			
n-Propylbenzene	2.30	0.0500	mg/kg wet	2.500		92	70-130			
sec-Butylbenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130			
Styrene	2.42	0.0500	mg/kg wet	2.500		97	70-130			
tert-Butylbenzene	2.57	0.0500	mg/kg wet	2.500		103	70-130			
Tertiary-amyl methyl ether	2.31	0.0500	mg/kg wet	2.500		92	70-130			
Tetrachloroethene	2.01	0.0500	mg/kg wet	2.500		81	70-130			
Tetrahydrofuran	2.19	0.500	mg/kg wet	2.500		87	70-130			
Toluene	2.43	0.0500	mg/kg wet	2.500		97	70-130			
trans-1,2-Dichloroethene	2.42	0.0500	mg/kg wet	2.500		97	70-130			
trans-1,3-Dichloropropene	2.45	0.0500	mg/kg wet	2.500		98	70-130			
Trichloroethene	2.27	0.0500	mg/kg wet	2.500		91	70-130			
Vinyl Acetate	2.39	0.250	mg/kg wet	2.500		95	70-130			
Vinyl Chloride	2.17	0.0500	mg/kg wet	2.500		87	70-130			
Xylene O	2.50	0.0500	mg/kg wet	2.500		100	70-130			
Xylene P,M	5.00	0.100	mg/kg wet	5.000		100	70-130			
Surrogate: 1,2-Dichloroethane-d4	2.45		mg/kg wet	2.500		98	70-130			
Surrogate: 4-Bromofluorobenzene	2.43		mg/kg wet	2.500		97	70-130			
Surrogate: Dibromofluoromethane	2.45		mg/kg wet	2.500		98	70-130			
Surrogate: Toluene-d8	2.34		mg/kg wet	2.500		94	70-130			

<b>LCS Dup</b>										
1,1,1,2-Tetrachloroethane	2.50	0.100	mg/kg wet	2.500		100	70-130	3	25	
1,1,1-Trichloroethane	2.74	0.0500	mg/kg wet	2.500		110	70-130	5	25	
1,1,2,2-Tetrachloroethane	2.32	0.0500	mg/kg wet	2.500		93	70-130	4	25	
1,1,2-Trichloroethane	2.43	0.0500	mg/kg wet	2.500		97	70-130	5	25	
1,1-Dichloroethane	2.30	0.0500	mg/kg wet	2.500		92	70-130	2	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

**Batch CE41424 - 5035**

1,1-Dichloroethene	2.41	0.0500	mg/kg wet	2.500		96	70-130	3	25	
1,1-Dichloropropene	2.62	0.0500	mg/kg wet	2.500		105	70-130	6	25	
1,2,3-Trichlorobenzene	2.54	0.0500	mg/kg wet	2.500		102	70-130	7	25	
1,2,3-Trichloropropane	2.18	0.0500	mg/kg wet	2.500		87	70-130	0	25	
1,2,4-Trichlorobenzene	2.52	0.0500	mg/kg wet	2.500		101	70-130	4	25	
1,2,4-Trimethylbenzene	2.46	0.0500	mg/kg wet	2.500		98	70-130	4	25	
1,2-Dibromo-3-Chloropropane	2.30	0.300	mg/kg wet	2.500		92	70-130	6	25	
1,2-Dibromoethane	2.51	0.0500	mg/kg wet	2.500		101	70-130	4	25	
1,2-Dichlorobenzene	2.44	0.0500	mg/kg wet	2.500		98	70-130	2	25	
1,2-Dichloroethane	2.58	0.0500	mg/kg wet	2.500		103	70-130	3	25	
1,2-Dichloropropane	2.24	0.0500	mg/kg wet	2.500		89	70-130	1	25	
1,3,5-Trimethylbenzene	2.55	0.0500	mg/kg wet	2.500		102	70-130	4	25	
1,3-Dichlorobenzene	2.47	0.0500	mg/kg wet	2.500		99	70-130	3	25	
1,3-Dichloropropane	2.34	0.0500	mg/kg wet	2.500		94	70-130	3	25	
1,4-Dichlorobenzene	2.39	0.0500	mg/kg wet	2.500		96	70-130	6	25	
1,4-Dioxane - Screen	58.9	5.00	mg/kg wet	50.00		118	44-241	5	200	
1-Chlorohexane	2.52	0.0500	mg/kg wet	2.500		101	70-130	4	25	
2,2-Dichloropropane	2.70	0.100	mg/kg wet	2.500		108	70-130	0.7	25	
2-Butanone	11.2	1.25	mg/kg wet	12.50		90	70-130	6	25	
2-Chlorotoluene	2.39	0.0500	mg/kg wet	2.500		96	70-130	4	25	
2-Hexanone	11.6	0.500	mg/kg wet	12.50		92	70-130	5	25	
4-Chlorotoluene	2.49	0.0500	mg/kg wet	2.500		100	70-130	5	25	
4-Isopropyltoluene	2.49	0.0500	mg/kg wet	2.500		100	70-130	4	25	
4-Methyl-2-Pentanone	11.1	0.500	mg/kg wet	12.50		88	70-130	6	25	
Acetone	11.3	1.25	mg/kg wet	12.50		91	70-130	5	25	
Benzene	2.42	0.0500	mg/kg wet	2.500		97	70-130	3	25	
Bromobenzene	2.55	0.0500	mg/kg wet	2.500		102	70-130	3	25	
Bromochloromethane	2.45	0.0500	mg/kg wet	2.500		98	70-130	1	25	
Bromodichloromethane	2.54	0.0500	mg/kg wet	2.500		102	70-130	2	25	
Bromoform	2.63	0.0500	mg/kg wet	2.500		105	70-130	3	25	
Bromomethane	2.43	0.100	mg/kg wet	2.500		97	70-130	1	25	
Carbon Disulfide	2.28	0.0500	mg/kg wet	2.500		91	70-130	4	25	
Carbon Tetrachloride	2.66	0.0500	mg/kg wet	2.500		107	70-130	2	25	
Chlorobenzene	2.59	0.0500	mg/kg wet	2.500		103	70-130	4	25	
Chloroethane	2.61	0.100	mg/kg wet	2.500		104	70-130	2	25	
Chloroform	2.40	0.0500	mg/kg wet	2.500		96	70-130	3	25	
Chloromethane	2.02	0.100	mg/kg wet	2.500		81	70-130	5	25	
cis-1,2-Dichloroethene	2.46	0.0500	mg/kg wet	2.500		98	70-130	3	25	
cis-1,3-Dichloropropene	2.63	0.0500	mg/kg wet	2.500		105	70-130	2	25	
Dibromochloromethane	2.63	0.0500	mg/kg wet	2.500		105	70-130	3	25	
Dibromomethane	2.49	0.0500	mg/kg wet	2.500		100	70-130	4	25	
Dichlorodifluoromethane	1.95	0.0500	mg/kg wet	2.500		78	70-130	2	25	
Diethyl Ether	2.24	0.0500	mg/kg wet	2.500		90	70-130	5	25	
Di-isopropyl ether	2.24	0.0500	mg/kg wet	2.500		90	70-130	6	25	
Ethyl tertiary-butyl ether	2.43	0.0500	mg/kg wet	2.500		97	70-130	3	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

**Batch CE41424 - 5035**

Ethylbenzene	2.53	0.0500	mg/kg wet	2.500	101	70-130	2	25	
Hexachlorobutadiene	2.59	0.0500	mg/kg wet	2.500	104	70-130	6	25	
Isopropylbenzene	2.45	0.0500	mg/kg wet	2.500	98	70-130	4	25	
Methyl tert-Butyl Ether	2.48	0.0500	mg/kg wet	2.500	99	70-130	4	25	
Methylene Chloride	2.40	0.250	mg/kg wet	2.500	96	70-130	4	25	
Naphthalene	2.57	0.0500	mg/kg wet	2.500	103	70-130	8	25	
n-Butylbenzene	2.55	0.0500	mg/kg wet	2.500	102	70-130	4	25	
n-Propylbenzene	2.52	0.0500	mg/kg wet	2.500	101	70-130	9	25	
sec-Butylbenzene	2.46	0.0500	mg/kg wet	2.500	98	70-130	3	25	
Styrene	2.49	0.0500	mg/kg wet	2.500	100	70-130	3	25	
tert-Butylbenzene	2.66	0.0500	mg/kg wet	2.500	106	70-130	3	25	
Tertiary-amyl methyl ether	2.41	0.0500	mg/kg wet	2.500	96	70-130	4	25	
Tetrachloroethene	2.07	0.0500	mg/kg wet	2.500	83	70-130	3	25	
Tetrahydrofuran	2.29	0.500	mg/kg wet	2.500	91	70-130	4	25	
Toluene	2.49	0.0500	mg/kg wet	2.500	100	70-130	3	25	
trans-1,2-Dichloroethene	2.52	0.0500	mg/kg wet	2.500	101	70-130	4	25	
trans-1,3-Dichloropropene	2.57	0.0500	mg/kg wet	2.500	103	70-130	5	25	
Trichloroethene	2.35	0.0500	mg/kg wet	2.500	94	70-130	4	25	
Vinyl Acetate	2.50	0.250	mg/kg wet	2.500	100	70-130	5	25	
Vinyl Chloride	2.22	0.0500	mg/kg wet	2.500	89	70-130	2	25	
Xylene O	2.64	0.0500	mg/kg wet	2.500	106	70-130	5	25	
Xylene P,M	5.18	0.100	mg/kg wet	5.000	104	70-130	4	25	
Surrogate: 1,2-Dichloroethane-d4	2.57		mg/kg wet	2.500	103	70-130			
Surrogate: 4-Bromofluorobenzene	2.47		mg/kg wet	2.500	99	70-130			
Surrogate: Dibromofluoromethane	2.51		mg/kg wet	2.500	100	70-130			
Surrogate: Toluene-d8	2.37		mg/kg wet	2.500	95	70-130			

8082 Polychlorinated Biphenyls (PCB)

**Batch CE42125 - 3540**

<b>Blank</b>										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	0.0301		mg/kg wet	0.02500	120	30-150				
Surrogate: Decachlorobiphenyl [2C]	0.0291		mg/kg wet	0.02500	116	30-150				
Surrogate: Tetrachloro-m-xylene	0.0232		mg/kg wet	0.02500	93	30-150				
Surrogate: Tetrachloro-m-xylene [2C]	0.0248		mg/kg wet	0.02500	99	30-150				

**LCS**



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
 Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8082 Polychlorinated Biphenyls (PCB)**

**Batch CE42125 - 3540**

Aroclor 1016	0.530	0.0500	mg/kg wet	0.5000		106	40-140			
Aroclor 1260	0.566	0.0500	mg/kg wet	0.5000		113	40-140			

Surrogate: Decachlorobiphenyl	0.0306		mg/kg wet	0.02500		123	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0298		mg/kg wet	0.02500		119	30-150			
Surrogate: Tetrachloro-m-xylene	0.0246		mg/kg wet	0.02500		99	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0255		mg/kg wet	0.02500		102	30-150			

**LCS Dup**

Aroclor 1016	0.548	0.0500	mg/kg wet	0.5000		110	40-140	3	30	
Aroclor 1260	0.563	0.0500	mg/kg wet	0.5000		113	40-140	0.6	30	

Surrogate: Decachlorobiphenyl	0.0310		mg/kg wet	0.02500		124	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0300		mg/kg wet	0.02500		120	30-150			
Surrogate: Tetrachloro-m-xylene	0.0246		mg/kg wet	0.02500		99	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0257		mg/kg wet	0.02500		103	30-150			

**8100M Total Petroleum Hydrocarbons**

**Batch CE41330 - 3546**

<b>Blank</b>										
Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacotane (C30)	ND	0.2	mg/kg wet							

Surrogate: O-Terphenyl	5.99		mg/kg wet	5.000		120	40-140			
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<b>LCS</b>										
Decane (C10)	4.0	0.2	mg/kg wet	2.500		160	40-140			B+
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Dodecane (C12)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		94	40-140			
Hexacosane (C26)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		80	30-140			
Octacosane (C28)	2.0	0.2	mg/kg wet	2.500		81	40-140			



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**Quality Control Data**

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**8100M Total Petroleum Hydrocarbons**

**Batch CE41330 - 3546**

Octadecane (C18)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Tetradecane (C14)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Total Petroleum Hydrocarbons	34.3	37.5	mg/kg wet	35.00		98	40-140			
Triacontane (C30)	2.0	0.2	mg/kg wet	2.500		79	40-140			

*Surrogate: O-Terphenyl*

4.80 mg/kg wet 5.000 96 40-140

**LCS Dup**

Decane (C10)	4.3	0.2	mg/kg wet	2.500		171	40-140	7	25	B+
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		101	40-140	7	25	
Dodecane (C12)	2.7	0.2	mg/kg wet	2.500		106	40-140	9	25	
Eicosane (C20)	2.6	0.2	mg/kg wet	2.500		105	40-140	11	25	
Hexacosane (C26)	2.3	0.2	mg/kg wet	2.500		93	40-140	9	25	
Hexadecane (C16)	2.6	0.2	mg/kg wet	2.500		102	40-140	6	25	
Nonadecane (C19)	2.6	0.2	mg/kg wet	2.500		106	40-140	9	25	
Nonane (C9)	2.1	0.2	mg/kg wet	2.500		85	30-140	6	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		88	40-140	7	25	
Octadecane (C18)	2.6	0.2	mg/kg wet	2.500		105	40-140	9	25	
Tetracosane (C24)	2.5	0.2	mg/kg wet	2.500		99	40-140	8	25	
Tetradecane (C14)	2.6	0.2	mg/kg wet	2.500		103	40-140	10	25	
Total Petroleum Hydrocarbons	37.2	37.5	mg/kg wet	35.00		106	40-140	8	25	
Triacontane (C30)	2.1	0.2	mg/kg wet	2.500		84	40-140	7	25	

*Surrogate: O-Terphenyl*

5.11 mg/kg wet 5.000 102 40-140

**8270C Semi-Volatile Organic Compounds**

**Batch CE41339 - 3546**

**Blank**

1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							





# ESS Laboratory

Division of Thielsch Engineering, Inc.

# BAL Laboratory

The Microbiology Division  
of Thielsch Engineering, Inc.



## CERTIFICATE OF ANALYSIS

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

### Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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#### 8270C Semi-Volatile Organic Compounds

##### Batch CE41339 - 3546

2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	0.667	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Benzoic Acid	ND	1.67	mg/kg wet							
Benzyl Alcohol	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Carbazole	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.167	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8270C Semi-Volatile Organic Compounds**

**Batch CE41339 - 3546**

Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet							
N-nitrosodiphenylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.78		mg/kg wet	3.333		83	30-130			
Surrogate: 2,4,6-Tribromophenol	5.15		mg/kg wet	5.000		103	30-130			
Surrogate: 2-Chlorophenol-d4	4.00		mg/kg wet	5.000		80	30-130			
Surrogate: 2-Fluorobiphenyl	2.90		mg/kg wet	3.333		87	30-130			
Surrogate: 2-Fluorophenol	3.60		mg/kg wet	5.000		72	30-130			
Surrogate: Nitrobenzene-d5	2.70		mg/kg wet	3.333		81	30-130			
Surrogate: Phenol-d6	4.08		mg/kg wet	5.000		82	30-130			
Surrogate: p-Terphenyl-d14	3.63		mg/kg wet	3.333		109	30-130			

**LCS**

1,1-Biphenyl	2.64	0.333	mg/kg wet	3.333		79	40-140			
1,2,4-Trichlorobenzene	2.71	0.333	mg/kg wet	3.333		81	40-140			
1,2-Dichlorobenzene	2.47	0.333	mg/kg wet	3.333		74	40-140			
1,3-Dichlorobenzene	2.44	0.333	mg/kg wet	3.333		73	40-140			
1,4-Dichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
2,3,4,6-Tetrachlorophenol	3.11	1.67	mg/kg wet	3.333		93	30-130			
2,4,5-Trichlorophenol	3.19	0.333	mg/kg wet	3.333		96	30-130			
2,4,6-Trichlorophenol	3.21	0.333	mg/kg wet	3.333		96	30-130			
2,4-Dichlorophenol	2.79	0.333	mg/kg wet	3.333		84	30-130			
2,4-Dimethylphenol	2.92	0.333	mg/kg wet	3.333		88	30-130			
2,4-Dinitrophenol	2.09	1.67	mg/kg wet	3.333		63	30-130			
2,4-Dinitrotoluene	2.98	0.333	mg/kg wet	3.333		89	40-140			
2,6-Dinitrotoluene	2.92	0.333	mg/kg wet	3.333		87	40-140			
2-Chloronaphthalene	2.36	0.333	mg/kg wet	3.333		71	40-140			
2-Chlorophenol	2.60	0.333	mg/kg wet	3.333		78	30-130			
2-Methylnaphthalene	2.74	0.333	mg/kg wet	3.333		82	40-140			
2-Methylphenol	2.85	0.333	mg/kg wet	3.333		85	30-130			
2-Nitroaniline	2.36	0.333	mg/kg wet	3.333		71	40-140			
2-Nitrophenol	2.83	0.333	mg/kg wet	3.333		85	30-130			
3,3'-Dichlorobenzidine	2.17	0.667	mg/kg wet	3.333		65	40-140			
3+4-Methylphenol	5.81	0.667	mg/kg wet	6.667		87	30-130			
3-Nitroaniline	2.61	0.333	mg/kg wet	3.333		78	40-140			
4,6-Dinitro-2-Methylphenol	2.33	1.67	mg/kg wet	3.333		70	30-130			
4-Bromophenyl-phenylether	2.88	0.333	mg/kg wet	3.333		86	40-140			
4-Chloro-3-Methylphenol	2.93	0.333	mg/kg wet	3.333		88	30-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270C Semi-Volatile Organic Compounds

**Batch CE41339 - 3546**

4-Chloroaniline	1.93	0.667	mg/kg wet	3.333		58	40-140			
4-Chloro-phenyl-phenyl ether	2.80	0.333	mg/kg wet	3.333		84	40-140			
4-Nitroaniline	2.40	0.333	mg/kg wet	3.333		72	40-140			
4-Nitrophenol	2.86	1.67	mg/kg wet	3.333		86	30-130			
Acenaphthene	2.72	0.333	mg/kg wet	3.333		82	40-140			
Acenaphthylene	2.60	0.333	mg/kg wet	3.333		78	40-140			
Acetophenone	2.57	0.667	mg/kg wet	3.333		77	40-140			
Aniline	1.89	0.667	mg/kg wet	3.333		57	40-140			
Anthracene	2.59	0.333	mg/kg wet	3.333		78	40-140			
Azobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140			
Benzo(a)anthracene	2.87	0.333	mg/kg wet	3.333		86	40-140			
Benzo(a)pyrene	2.87	0.167	mg/kg wet	3.333		86	40-140			
Benzo(b)fluoranthene	3.47	0.333	mg/kg wet	3.333		104	40-140			
Benzo(g,h,i)perylene	3.22	0.333	mg/kg wet	3.333		97	40-140			
Benzo(k)fluoranthene	2.92	0.333	mg/kg wet	3.333		88	40-140			
Benzoic Acid	2.18	1.67	mg/kg wet	3.333		65	40-140			
Benzyl Alcohol	2.49	0.333	mg/kg wet	3.333		75	40-140			
bis(2-Chloroethoxy)methane	2.74	0.333	mg/kg wet	3.333		82	40-140			
bis(2-Chloroethyl)ether	2.44	0.333	mg/kg wet	3.333		73	40-140			
bis(2-chloroisopropyl)Ether	2.61	0.333	mg/kg wet	3.333		78	40-140			
bis(2-Ethylhexyl)phthalate	2.73	0.333	mg/kg wet	3.333		82	40-140			
Butylbenzylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140			
Carbazole	2.75	0.333	mg/kg wet	3.333		82	40-140			
Chrysene	2.68	0.167	mg/kg wet	3.333		81	40-140			
Dibenzo(a,h)Anthracene	3.50	0.167	mg/kg wet	3.333		105	40-140			
Dibenzofuran	2.68	0.333	mg/kg wet	3.333		81	40-140			
Diethylphthalate	2.79	0.333	mg/kg wet	3.333		84	40-140			
Dimethylphthalate	2.84	0.333	mg/kg wet	3.333		85	40-140			
Di-n-butylphthalate	2.73	0.333	mg/kg wet	3.333		82	40-140			
Di-n-octylphthalate	3.45	0.333	mg/kg wet	3.333		104	40-140			
Fluoranthene	2.71	0.333	mg/kg wet	3.333		81	40-140			
Fluorene	2.80	0.333	mg/kg wet	3.333		84	40-140			
Hexachlorobenzene	3.02	0.167	mg/kg wet	3.333		91	40-140			
Hexachlorobutadiene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Hexachlorocyclopentadiene	1.31	1.67	mg/kg wet	3.333		39	40-140			B-
Hexachloroethane	2.43	0.333	mg/kg wet	3.333		73	40-140			
Indeno(1,2,3-cd)Pyrene	3.52	0.333	mg/kg wet	3.333		106	40-140			
Isophorone	2.70	0.333	mg/kg wet	3.333		81	40-140			
Naphthalene	2.73	0.333	mg/kg wet	3.333		82	40-140			
Nitrobenzene	2.60	0.333	mg/kg wet	3.333		78	40-140			
N-Nitrosodimethylamine	4.36	0.333	mg/kg wet	3.333		131	40-140			
N-Nitroso-Di-n-Propylamine	2.63	0.333	mg/kg wet	3.333		79	40-140			
N-nitrosodiphenylamine	2.66	0.333	mg/kg wet	3.333		80	40-140			
Pentachlorophenol	3.05	1.67	mg/kg wet	3.333		91	30-130			
Phenanthrene	2.63	0.333	mg/kg wet	3.333		79	40-140			



**CERTIFICATE OF ANALYSIS**

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8270C Semi-Volatile Organic Compounds**

**Batch CE41339 - 3546**

Phenol	2.31	0.333	mg/kg wet	3.333		69	30-130			
Pyrene	2.97	0.333	mg/kg wet	3.333		89	40-140			
Pyridine	2.33	1.67	mg/kg wet	3.333		70	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.73		mg/kg wet	3.333		82	30-130			
Surrogate: 2,4,6-Tribromophenol	5.41		mg/kg wet	5.000		108	30-130			
Surrogate: 2-Chlorophenol-d4	3.99		mg/kg wet	5.000		80	30-130			
Surrogate: 2-Fluorobiphenyl	3.06		mg/kg wet	3.333		92	30-130			
Surrogate: 2-Fluorophenol	3.70		mg/kg wet	5.000		74	30-130			
Surrogate: Nitrobenzene-d5	2.73		mg/kg wet	3.333		82	30-130			
Surrogate: Phenol-d6	4.10		mg/kg wet	5.000		82	30-130			
Surrogate: p-Terphenyl-d14	3.52		mg/kg wet	3.333		105	30-130			

**LCS Dup**

1,1-Biphenyl	2.45	0.333	mg/kg wet	3.333		74	40-140	7	30	
1,2,4-Trichlorobenzene	2.55	0.333	mg/kg wet	3.333		77	40-140	6	30	
1,2-Dichlorobenzene	2.37	0.333	mg/kg wet	3.333		71	40-140	4	30	
1,3-Dichlorobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140	5	30	
1,4-Dichlorobenzene	2.35	0.333	mg/kg wet	3.333		70	40-140	6	30	
2,3,4,6-Tetrachlorophenol	2.89	1.67	mg/kg wet	3.333		87	30-130	7	30	
2,4,5-Trichlorophenol	2.98	0.333	mg/kg wet	3.333		90	30-130	7	30	
2,4,6-Trichlorophenol	3.01	0.333	mg/kg wet	3.333		90	30-130	7	30	
2,4-Dichlorophenol	2.56	0.333	mg/kg wet	3.333		77	30-130	9	30	
2,4-Dimethylphenol	2.73	0.333	mg/kg wet	3.333		82	30-130	7	30	
2,4-Dinitrophenol	2.09	1.67	mg/kg wet	3.333		63	30-130	0.1	30	
2,4-Dinitrotoluene	2.74	0.333	mg/kg wet	3.333		82	40-140	8	30	
2,6-Dinitrotoluene	2.69	0.333	mg/kg wet	3.333		81	40-140	8	30	
2-Chloronaphthalene	2.28	0.333	mg/kg wet	3.333		68	40-140	3	30	
2-Chlorophenol	2.43	0.333	mg/kg wet	3.333		73	30-130	7	30	
2-Methylnaphthalene	2.51	0.333	mg/kg wet	3.333		75	40-140	9	30	
2-Methylphenol	2.63	0.333	mg/kg wet	3.333		79	30-130	8	30	
2-Nitroaniline	2.18	0.333	mg/kg wet	3.333		65	40-140	8	30	
2-Nitrophenol	2.65	0.333	mg/kg wet	3.333		79	30-130	7	30	
3,3'-Dichlorobenzidine	2.13	0.667	mg/kg wet	3.333		64	40-140	2	30	
3+4-Methylphenol	5.32	0.667	mg/kg wet	6.667		80	30-130	9	30	
3-Nitroaniline	2.38	0.333	mg/kg wet	3.333		72	40-140	9	30	
4,6-Dinitro-2-Methylphenol	2.31	1.67	mg/kg wet	3.333		69	30-130	1	30	
4-Bromophenyl-phenylether	2.71	0.333	mg/kg wet	3.333		81	40-140	6	30	
4-Chloro-3-Methylphenol	2.64	0.333	mg/kg wet	3.333		79	30-130	11	30	
4-Chloroaniline	1.80	0.667	mg/kg wet	3.333		54	40-140	7	30	
4-Chloro-phenyl-phenyl ether	2.58	0.333	mg/kg wet	3.333		78	40-140	8	30	
4-Nitroaniline	2.28	0.333	mg/kg wet	3.333		68	40-140	5	30	
4-Nitrophenol	2.70	1.67	mg/kg wet	3.333		81	30-130	6	30	
Acenaphthene	2.52	0.333	mg/kg wet	3.333		76	40-140	8	30	
Acenaphthylene	2.56	0.333	mg/kg wet	3.333		77	40-140	2	30	
Acetophenone	2.39	0.667	mg/kg wet	3.333		72	40-140	7	30	
Aniline	1.80	0.667	mg/kg wet	3.333		54	40-140	5	30	



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270C Semi-Volatile Organic Compounds

**Batch CE41339 - 3546**

Anthracene	2.44	0.333	mg/kg wet	3.333		73	40-140	6	30	
Azobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140	5	30	
Benzo(a)anthracene	2.79	0.333	mg/kg wet	3.333		84	40-140	3	30	
Benzo(a)pyrene	2.61	0.167	mg/kg wet	3.333		78	40-140	10	30	
Benzo(b)fluoranthene	3.18	0.333	mg/kg wet	3.333		95	40-140	9	30	
Benzo(g,h,i)perylene	2.96	0.333	mg/kg wet	3.333		89	40-140	8	30	
Benzo(k)fluoranthene	2.65	0.333	mg/kg wet	3.333		80	40-140	10	30	
Benzoic Acid	2.12	1.67	mg/kg wet	3.333		64	40-140	3	30	
Benzyl Alcohol	2.28	0.333	mg/kg wet	3.333		68	40-140	9	30	
bis(2-Chloroethoxy)methane	2.50	0.333	mg/kg wet	3.333		75	40-140	9	30	
bis(2-Chloroethyl)ether	2.38	0.333	mg/kg wet	3.333		72	40-140	2	30	
bis(2-chloroisopropyl)Ether	2.32	0.333	mg/kg wet	3.333		70	40-140	12	30	
bis(2-Ethylhexyl)phthalate	2.66	0.333	mg/kg wet	3.333		80	40-140	3	30	
Butylbenzylphthalate	2.97	0.333	mg/kg wet	3.333		89	40-140	3	30	
Carbazole	2.59	0.333	mg/kg wet	3.333		78	40-140	6	30	
Chrysene	2.62	0.167	mg/kg wet	3.333		79	40-140	3	30	
Dibenzo(a,h)Anthracene	3.24	0.167	mg/kg wet	3.333		97	40-140	8	30	
Dibenzofuran	2.47	0.333	mg/kg wet	3.333		74	40-140	8	30	
Diethylphthalate	2.56	0.333	mg/kg wet	3.333		77	40-140	9	30	
Dimethylphthalate	2.62	0.333	mg/kg wet	3.333		79	40-140	8	30	
Di-n-butylphthalate	2.55	0.333	mg/kg wet	3.333		77	40-140	7	30	
Di-n-octylphthalate	3.19	0.333	mg/kg wet	3.333		96	40-140	8	30	
Fluoranthene	2.57	0.333	mg/kg wet	3.333		77	40-140	5	30	
Fluorene	2.61	0.333	mg/kg wet	3.333		78	40-140	7	30	
Hexachlorobenzene	2.86	0.167	mg/kg wet	3.333		86	40-140	6	30	
Hexachlorobutadiene	2.55	0.333	mg/kg wet	3.333		76	40-140	7	30	
Hexachlorocyclopentadiene	1.28	1.67	mg/kg wet	3.333		38	40-140	3	30	B-
Hexachloroethane	2.26	0.333	mg/kg wet	3.333		68	40-140	7	30	
Indeno(1,2,3-cd)Pyrene	3.21	0.333	mg/kg wet	3.333		96	40-140	9	30	
Isophorone	2.46	0.333	mg/kg wet	3.333		74	40-140	9	30	
Naphthalene	2.57	0.333	mg/kg wet	3.333		77	40-140	6	30	
Nitrobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	9	30	
N-Nitrosodimethylamine	2.97	0.333	mg/kg wet	3.333		89	40-140	38	30	D+
N-Nitroso-Di-n-Propylamine	2.36	0.333	mg/kg wet	3.333		71	40-140	11	30	
N-nitrosodiphenylamine	2.53	0.333	mg/kg wet	3.333		76	40-140	5	30	
Pentachlorophenol	2.98	1.67	mg/kg wet	3.333		89	30-130	2	30	
Phenanthrene	2.49	0.333	mg/kg wet	3.333		75	40-140	5	30	
Phenol	2.29	0.333	mg/kg wet	3.333		69	30-130	0.9	30	
Pyrene	2.78	0.333	mg/kg wet	3.333		84	40-140	7	30	
Pyridine	2.09	1.67	mg/kg wet	3.333		63	40-140	11	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.50		mg/kg wet	3.333		75	30-130			
Surrogate: 2,4,6-Tribromophenol	4.98		mg/kg wet	5.000		100	30-130			
Surrogate: 2-Chlorophenol-d4	3.65		mg/kg wet	5.000		73	30-130			
Surrogate: 2-Fluorobiphenyl	2.77		mg/kg wet	3.333		83	30-130			
Surrogate: 2-Fluorophenol	3.41		mg/kg wet	5.000		68	30-130			
Surrogate: Nitrobenzene-d5	2.49		mg/kg wet	3.333		75	30-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
 Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270C Semi-Volatile Organic Compounds

Batch CE41339 - 3546

Surrogate: Phenol-d6	3.71		mg/kg wet	5.000		74	30-130			
Surrogate: p-Terphenyl-d14	3.24		mg/kg wet	3.333		97	30-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**Notes and Definitions**

- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- J Reported between MDL and MRL
- ICV Initial Calibration Verification recovery is outside of control limit (ICV).
- D+ Relative percent difference for duplicate is outside of criteria (D+).
- D Diluted.
- C+ Continuing Calibration recovery is above upper control limit (C+).
- C- Continuing Calibration recovery is below lower control limit (C-).
- B+ Blank Spike recovery is above upper control limit (B+).
- B- Blank Spike recovery is below lower control limit (B-).
- B Present in Method Blank (B).
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report



*CERTIFICATE OF ANALYSIS*

Client Name: Brighter Horizons  
Client Project ID: Jamestown

ESS Laboratory Work Order: 1405288

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

<http://www.a2la.org/scopepdf/2864-01.pdf>

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/find/labs/analytical/ESS.pdf>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

[http://www.ct.gov/dph/lib/dph/environmental\\_health/environmental\\_laboratories/pdf/OutOfStateCommercialLaboratories.pdf](http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf)

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI0002

<http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/A111.abs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

[http://datamine2.state.nj.us/DEP\\_OPRA/OpraMain/pi\\_main?mode=pi\\_by\\_site&sort\\_order=PI\\_NAMEA&Select+a+Site:=58715](http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715)

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

[http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory\\_accreditation\\_program/590095](http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095)

**CHEMISTRY**

A2LA Accredited: Testing Cert # 2864.01

Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)

<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141

Lead Paint, Lead in Children's Metals Jewelry

<http://www.cpsc.gov/cgi-bin/labapplist.aspx>



**Sample and Cooler Receipt Checklist**

Client: Brighter Horizons  
Client Project ID: \_\_\_\_\_  
Shipped/Delivered Via: Client

ESS Project ID: 14050288  
Date Project Due: 5/21/14  
Days For Project: 5 Day

**Items to be checked upon receipt:**

- |  |                               |   |   |
|--|-------------------------------|---|---|
| 1. Air Bill Manifest Present?          | <input type="checkbox"/> * No | 10. Are the samples properly preserved?   | <input type="checkbox"/> Yes  |
| Air No.:                               |                               | 11. Proper sample containers used?        | <input type="checkbox"/> Yes  |
| 2. Were Custody Seals Present?         | <input type="checkbox"/> No   | 12. Any air bubbles in the VOA vials?     | <input type="checkbox"/> N/A  |
| 3. Were Custody Seals Intact?          | <input type="checkbox"/> N/A  | 13. Holding times exceeded?               | <input type="checkbox"/> No   |
| 4. Is Radiation count < 100 CPM?       | <input type="checkbox"/> Yes  | 14. Sufficient sample volumes?            | <input type="checkbox"/> Yes  |
| 5. Is a cooler present?                | <input type="checkbox"/> Yes  | 15. Any Subcontracting needed?            | <input type="checkbox"/> No   |
| Cooler Temp: <u>5.5</u>                |                               | 16. Are ESS labels on correct containers? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Iced With: <u>Ice</u>                  |                               | 17. Were samples received intact?         | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 6. Was COC included with samples?      | <input type="checkbox"/> Yes  | ESS Sample IDs: _____                     |   |
| 7. Was COC signed and dated by client? | <input type="checkbox"/> Yes  | Sub Lab: _____                            |   |
| 8. Does the COC match the sample       | <input type="checkbox"/> Yes  | Analysis: _____                           |   |
| 9. Is COC complete and correct?        | <input type="checkbox"/> Yes  | TAT: _____                                |   |

18. Was there need to call project manager to discuss status? If yes, please explain.

\_\_\_\_\_

\_\_\_\_\_

Who was called?: \_\_\_\_\_ By whom? \_\_\_\_\_

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	40 ml - VOA	1	MeOH
1	Yes	8 oz Soil Jar	2	NP

Completed By: [Signature]  
Reviewed By: [Signature]

Date/Time: 5/14/14 1030  
Date/Time: 5/14/14 1034



October 30, 2014

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 3rd Quarter 2014  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and March 18, 2014 and most recently renewed on September 9, 2014.

This report covers activities conducted during the period of July 1, 2014 to September 30, 2014.

### **Construction Activities**

Construction activities during this reporting period included the delivery and management of one classification of soil:

- Elevated Arsenic soils; and
- Soil that is compliant with all RIDEM criteria.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. The laboratory analysis data for the new projects and expanded projects listed in the table are provided in Appendix B.

**Complaints**

On September 17, 2014, RIDEM received a complaint regarding excessive dust associated with a recent delivery. RIDEM informed APE's site manager, and the situation was abated.

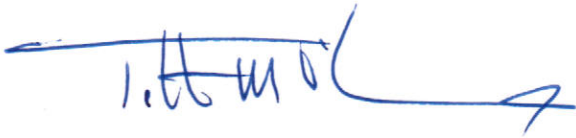
No complaints were received directly by APE during this reporting period.

**Schedule**

The project team estimates that we are approximately 85% completed with the capping project. Currently the project team is concentrating on capping the portion of the landfill which is closest to the northeast property boundary.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely  
TIM O'CONNOR & COMPANY, LLC

A handwritten signature in blue ink, appearing to read "T. M. O'Connor", with a long horizontal line extending to the left and a flourish at the end.

Timothy M. O'Connor, PE, LEED-AP  
Principal

**Former Portsmouth Landfill Soils Accepted 3rd Quarter 2014**

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
July 10 - 28	RI DOT Jamestown	Brighter Horizons Environmental	252.55	residential
July 15-17, August 27-28 & September 2-18	Beechwood Museum	Brighter Horizons Environmental	3,142.27	arsenic
July 14 - 22	US Navy Building 668 & 669, Newport, RI	Alliance Environmental	432.00	arsenic
August 28, 2014	Naval Station Newport Public Works Area Across from B-A-9	Mello Construction	20.00	arsenic
September 18, 2014	Several small excavations at Naval Station Newport	Mello Construction	90.00	arsenic
September 8-16, 2014	Omega Pond Dam, East Providence	Millennium Equities Group Inc.	2,554.00	residential
<b>Total</b>			<b>6,490.82</b>	

**Notes**

none

# Appendix A – Photographs



**Photo 1 – Along the Eastern Limit of Disturbance**



**Photo 2 – Along the Eastern Limit of Disturbance**



**Photo 3 –The Northern-most Portion of the Landfill**



**Photo 4 –Along Northeastern Limit of Disturbance**



# Appendix B – Analytical Data

(on disc)

February 16, 2015

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 4th Quarter 2014  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and March 18, 2014 and most recently renewed on September 9, 2014.

This report covers activities conducted during the period of October 1, 2014 to December 31, 2014.

### **Construction Activities**

Construction activities during this reporting period included the delivery and management of three classifications of soil:

- Industrial/Commercial soils;
- Elevated Arsenic soils; and
- Soil that is compliant with all RIDEM criteria.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

An attached table summarizes the soils delivered to the Property during this reporting period. The laboratory analysis data for the new projects listed in the table are provided in Appendix B.

**Complaints**

No complaints were received directly by APE during this reporting period.

**Notice of Intent to Enforce**

On October 30, 2014 APE and SF Pacific LLC were issued a Notice of Intent to Enforce from the RIDEM relating to soils that originated from an SF Pacific LLC project. During the reporting period, APE and SF Pacific LLC worked jointly to resolve this matter and have met with and made two submittals to RIDEM:

- November 11, 2014 letter to Mr. Leo Hellested (RIDEM) from Peter B. Regan (Sayer Regan & Thayer, LLP); and
- December 12, 2014 letter to Ms. Laurie Grandchamp (RIDEM) from Peter B. Regan (Sayer Regan & Thayer, LLP).

Based upon the January 8, 2015 RIDEM response to these submittals and recently completed work at the former Portsmouth Landfill it is our expectation that this matter will be completely resolved in the near future.

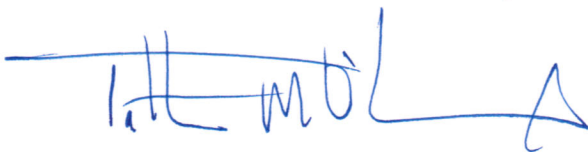
**Schedule**

Per your request, APE has calculated the approximate volume of soil necessary to complete the landfill capping project at the Property. Based upon these calculations and experience on the project regarding consolidation of the fill material below the cap, we estimate that approximately 30,000 cubic yards will be required to complete the capping project. It is important to note that the final volume required to cap the landfill is driven by elevations in the approved final site grading plan and will not be determined until the project is very close to meeting the elevations in the grading plan.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC



Timothy M. O'Connor, PE, LEED-AP  
Principal

Former Portsmouth Landfill Soils Accepted 4th Quarter 2014

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
October 3 -28, 2014	Beechwood Museum	Brighter Horizons Environmental	2,765.26	arsenic
October 30 - December 23, 2014	Luce Hall Naval Station Newport	Proulx Environmental	922.26	residential
November 3 - 13, 2014	Naval Station Newport - Pier 2	Nover Armstrong Associates Inc.	486.36	residential
December 11, 2014	Naval Station Newport - Substation 5	Mello Construction	19.50	industrial
December 17, 2014	Naval Station Newport - B - 399	Mello Construction	45.00	arsenic
December 17, 2014	Naval Station Newport - Salt Shed	Mello Construction	54.00	arsenic
December 18, 2014	Naval Station Newport - B - 23 Navy Hospital	Mello Construction	189.00	arsenic
December 23, 2014	Naval Station Newport - Gate 23	Nover Armstrong Associates Inc.	401.17	arsenic
December 11 - 18, 2014	Tennis Hall of Fame	GZA GeoEnvironmental	1,832.51	arsenic
<b>Total</b>			<b>6,715.06</b>	

**Notes**

none

# Appendix A – Photographs



**Photo 1 – Along the Eastern Limit of Disturbance**



**Photo 2 – Along the Eastern Limit of Disturbance**



**Photo 3 – Along the Eastern Limit of Disturbance**



**Photo 4 –Along Western Limit of Disturbance**

# **Appendix B – Analytical Data**

**(on disc)**



May 19, 2015

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 1st Quarter 2015  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and March 18, 2014 and most recently renewed on September 9, 2014.

This report covers activities conducted during the period of January 1, 2015 to March 31, 2015.

### **Construction Activities**

Construction activities during this reporting period included the delivery and management of three classifications of soil:

- Elevated Arsenic soils; and
- Soil that is compliant with all RIDEM criteria.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

An attached table summarizes the soils delivered to the Property during this reporting period. The laboratory analysis data for the new projects listed in the table are provided in Appendix B.

**Complaints**

No complaints were received directly by APE during this reporting period.

**Notice of Intent to Enforce**

On April 24, 2015, APE submitted a letter to RIDEM addressing the last remaining issue associated with the October 30, 2014 Notice of Intent to Enforce.

**Schedule**

The APE project team estimates that approximately 30,000 cubic yards will be required to complete the capping project. It is important to note that the final volume required to cap the landfill is driven by elevations in the approved final site grading plan and will not be determined until the project is very close to meeting the elevations in the grading plan.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC



Timothy M. O'Connor, PE, LEED-AP  
Principal

**Former Portsmouth Landfill Soils Accepted 1st Quarter 2015**

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
January 16 & 22, 2015	Luce Hall Naval Station Newport	Proulx Environmental	83.29	residential
January 19, 2015	Tennis Hall of Fame, Newport, RI	GZA GeoEnvironmental	54.17	arsenic
February 11, 2015	Building 1258 Naval Undersea Warfare Center, Middletown, RI	Sage Environmental	189.00	arsenic
<b>Total</b>			<b>326.46</b>	

**Notes**  
none

# Appendix A – Photographs



**Photo 1 – Along the North Western Limit of Disturbance**



**Photo 2 – Along the Western Limit of Disturbance**



**Photo 3 – Looking East From Center of the Site**



**Photo 4 –Along Northern Limit of Disturbance**

# Appendix B – Analytical Data

(on disc)

August 5, 2015

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 2nd Quarter 2015  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and March 18, 2014 and most recently renewed on September 9, 2014.

This report covers activities conducted during the period of April 1, 2015 to June 30, 2015.

### **Construction Activities**

Construction activities during this reporting period included the delivery and management of three classifications of soil:

- Industrial soils;
- Elevated Arsenic soils; and
- Soil that is compliant with all RIDEM criteria.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

An attached table summarizes the soils delivered to the Property during this reporting period. The laboratory analysis data for the new projects listed in the table are provided in Appendix B.



**Complaints**

No complaints were received directly by APE during this reporting period.

**Notice of Intent to Enforce**

On June 2, 2015, RIDEM issued a Letter of Compliance documenting APE's fulfillment of its obligations associated with the October 30, 2014 Notice of Intent to Enforce.

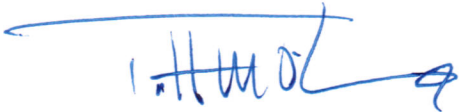
**Schedule**

The APE project team estimates that approximately 27,000 cubic yards will be required to complete the capping project. It is important to note that the final volume of capping soil required to cap the landfill is driven by elevations in the approved final site grading plan and will not be determined until the project is very close to meeting the elevations in the grading plan.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC

A handwritten signature in blue ink, appearing to read "Tim O'Connor", with a long horizontal flourish extending to the left.

Timothy M. O'Connor, PE, LEED-AP  
Principal

**Former Portsmouth Landfill Soils Accepted 2nd Quarter 2015**

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
April 14 & 16, May 27, 2015	Luce Hall Naval Station Newport *	Proulx Environmental	339.48	residential
April 20, 2015	2910 Main Street Tiverton, RI	Sage Environmental	7.50	industrial
April 29, 2015	Building 291 Naval Station Newport	Mello Construction	15.00	arsenic
May 28, 2015	263 Brook Street, New Bedford, MA	Sage Environmental	54.00	residential
June 18 - 26, 2015	259 Bellevue Avenue Newport, RI	Sage Environmental	2,430.00	arsenic
		<b>Total</b>	2,845.98	

**Notes**

\* - data previously submitted

# Appendix A – Photographs



**Photo 1 – Along the Southern (Park Avenue) Limit of Disturbance**



**Photo 2 – Along the Eastern Limit of Disturbance**



**Photo 3 – Along the Eastern Limit of Disturbance**



**Photo 4 –Central Portion of Site and Western Limit of Disturbance**

# Appendix B – Analytical Data

(on disc)

November 3, 2015

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 3rd Quarter 2015  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and March 18, 2014 and most recently renewed on September 9, 2014. On September 20, 2015 the BUDA expired.

This report covers activities conducted during the period of July 1, 2015 to September 30, 2015.

### **Construction Activities**

Construction activities during this reporting period included the delivery and management of three classifications of soil:

- Industrial soils;
- Elevated Arsenic soils; and
- Soil that is compliant with all RIDEM criteria.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

An attached table summarizes the soils delivered to the Property during this reporting period. The laboratory analysis data for the new projects listed in the table are provided in Appendix B. With regard to the data provided for the project identified as, "Phase III Sewer Repairs, Naval Station Newport," it should be noted that the semi volatile organics analysis results from the initial sample were judged by the generator's consultant to not be representative of the soil.

Consequently when the consultant collected the additional arsenic samples for compliance with the APE BUDA, they also collected a second sample for SVOC analysis. Both complete laboratory reports are provided in the appendix.

### **Complaints**

No complaints were received directly by APE during this reporting period.

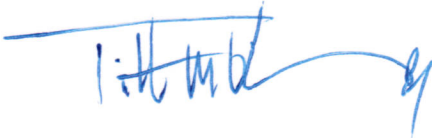
### **Schedule**

Per the BUDA, APE is required to complete the final capping of the landfill by September 20, 2016. The APE project team estimates that approximately 23,000 cubic yards will be required to complete the capping project. APE recently had the existing conditions at the landfill survey. The results of the survey were not available in time for this report. It is important to note that due to settlement and compaction, the final volume of capping soil required to cap the landfill is driven by existing conditions and the elevations in the approved final site grading plan and will not be determined until the project is very close to meeting the elevations in the grading plan.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC



Timothy M. O'Connor, PE, LEED-AP  
Principal



**Former Portsmouth Landfill Soils Accepted 3rd Quarter 2015**

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
July 21, 23, 27, August 11-14, 27, 2015	659 Bellevue Avenue, Newport, RI	Sage Environmental	1,269.00	arsenic *
July 24, 31, August 5, 2015	170 Saxony Avenue, Tiverton, RI	Alliance Environmental	477.12	residential
July 29, 30, 2015	320 East Road, Tiverton, RI	Alliance Environmental	171.90	industrial
July 29, 2015	946 G Tuckertown Road, South Kingstown, RI	Alliance Environmental	60.00	industrial
August 3, 4, 2015	351 West Main Road, Middletown, RI	Sage Environmental	525.00	arsenic
August 13, 2015	Naval War College, Cushing Road, Newport, RI	Mello Construction Co. Inc.	6.00	industrial
August 31, September 1-3, 16, 2015	Phase III Sewer Repairs, Naval Station Newport	Alliance Environmental	2,100.10	arsenic
September 17 - 19, 2015	Defense Highway, Naval Station Newport, Middletown, RI	Alliance Environmental	2,175.63	industrial
		<b>Total</b>	<b>6,784.75</b>	

**Notes**

\* - data previously submitted

# Appendix A – Photographs



**Photo 1 – Along the Southern (Park Avenue) Limit of Disturbance**



**Photo 2 – Along the Eastern Limit of Disturbance**



**Photo 3 – Along the Eastern Limit of Disturbance**



**Photo 4 –Central Portion of Site and Western Limit of Disturbance**

# Appendix B – Analytical Data

(on disc)

February 5, 2016

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 4th Quarter 2015  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and March 18, 2014 and most recently renewed on September 9, 2014. On September 20, 2015 the BUDA expired.

This report covers activities conducted during the period of October 1, 2015 to December 31, 2015.

**Construction Activities**

Construction activities during this reporting period included the delivery and management of only final capping soil (compliant with all RIDEM criteria).

Photos of the Property are attached as Appendix A.

**Soil Accepted**

An attached table summarizes the soils delivered to the Property during this reporting period. The laboratory analysis data for the new project listed in the table are provided in Appendix B.

## Complaints

On November 13, 2015, RIDEM notified the APE project team that the agency had received a complaint about wind-blown plastics originating from slope areas and blowing around the area. On December 4, 2015, as site walk was conducted by Tim O'Connor & Company LLC and RIDEM. At no time during the site walk was plastic observed blowing around the site. At several locations portions of plastic sheeting that was formerly used to manage soil stock piles was observed sticking out of the landfill surface. This plastic was not free to "blow around" as it was for the most part buried in the landfill. During the site walk RIDEM did point out one section of the capped landfill that was sparsely vegetated. This section was a berm which runs along the portion of the landfill which abuts the local residential area. RIDEM requested that this area be seeded. APE will ensure that this area's vegetation is improved once warmer weather returns to the area.

No complaints were received directly by APE during this reporting period.

## Schedule

Per the BUDA, APE is required to complete the final capping of the landfill by September 20, 2016. The APE project team estimates that approximately 31,000 cubic yards will be required to complete the capping project. It is important to note that due to settlement and compaction, the final volume of capping soil required to cap the landfill is driven by existing conditions and the elevations in the approved final site grading plan and will not be determined until the project is very close to meeting the elevations in the grading plan.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC



Timothy M. O'Connor, PE, LEED-AP  
Principal

**Former Portsmouth Landfill Soils Accepted 4th Quarter 2015**

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
December 8, 2015	Luce Hall Naval Station Newport *	Proulx Environmental	19.92	residential
December 18 & 21, 2015	Fan Pier Parcel D, Boston, MA	McPhail Associates	861.15	residential
<b>Total</b>			<b>881.07</b>	

**Notes**

\* - data previously submitted



# Appendix A – Photographs



**Photo 1 – Along the Southern (Park Avenue) Limit of Disturbance**



**Photo 2 – Along the Eastern Limit of Disturbance**



**Photo 3 – Along the Western Limit of Disturbance**



**Photo 4 – Along the North-Western Limit of Disturbance**

# **Appendix B – Analytical Data**

**(on disc)**

May 20, 2016

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 1st Quarter 2016  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and March 18, 2014 and most recently renewed on September 9, 2014. On September 20, 2015 the BUDA expired.

This report covers activities conducted during the period of January 1, 2016 to March 31, 2016.

### **Construction Activities**

Construction activities during this reporting period included the delivery and management of only final capping soil (compliant with all RIDEM criteria) and seeding/erosion control activities.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

An attached table summarizes the soils delivered to the Property during this reporting period. The laboratory analysis data for the soil reported on the table has been previously submitted to RIDEM.

## **Complaints**

No complaints were received directly by APE during this reporting period.

During the previous reporting period, a complaint was received by RIDEM regarding wind-blown plastics originating from slope areas and blowing around the area. During subsequent site walkover by Tim O'Connor & Company LLC and RIDEM, windblown plastics were not observed however RIDEM did request at that time that APE work to remove the plastic sheeting that was visible on the side slopes proximate to the residential abutters and that APE make arrangements to seed the area as soon as was feasible.

During this reporting period APE did remove the plastic sheeting protruding from the surface and seeded the side slope where RIDEM expressed concern.

## **Schedule**

Per the BUDA, APE is required to complete the final capping of the landfill by September 20, 2016. The APE project team estimates that approximately 22,000 cubic yards will be required to complete the capping project. It is important to note that due to settlement and compaction, the final volume of capping soil required to cap the landfill is driven by existing conditions and the elevations in the approved final site grading plan and will not be determined until the project is very close to meeting the elevations in the grading plan.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC

A handwritten signature in blue ink, appearing to read 'Tim O'Connor', with a long horizontal flourish extending to the right.

Timothy M. O'Connor, PE, LEED-AP  
Principal

**Former Portsmouth Landfill Soils Accepted 1st Quarter 2016**

Delivery Dates	Source	Consultant	Quantity (tons)	Soil Classification
January 8, 15 and 29, 2016	Fan Pier Parcel D, Boston, MA*	McPhail Associates	1,038.83	residential
<b>Total</b>			<b>1,038.83</b>	

**Notes**

\* - data previously submitted

# Appendix A – Photographs





**Photo 1 – Along the Southern Limit of Disturbance**



**Photo 2 – Along the Eastern Limit of Disturbance**



**Photo 3 – Along the Eastern Limit of Disturbance**



**Photo 4 – Along the Western Limit of Disturbance**

# **Appendix B – Analytical Data**

**(no new data this period)**

This PDF data package consists of 1,440 pages. The project that generated this data is referred to as: Fan Pier Parcel D, 50 Liberty Drive Boston, MA. McPhail Associates LLC conducted extensive sampling at this site in order to determine the appropriate re-use of the soils. This data package includes 95 soil sample results, along with the supporting quality control samples. However after analyzing the data not all of the soils were determined to be acceptable for the Portsmouth Landfill project. A total of 46 samples met the Portsmouth acceptance criteria. However in the interest of completeness all of the data packages are provided in order to avoid concerns about missing page numbers.

The samples relating to the Portsmouth project as follows:

SAMPLE ID	SAMPLE ID
D-4 0'-6'	D-18 12-18
D8 0'-6'	D-18 18-24
D-12 0'-6'	D-19 6-12
D-15 0'-6'	D-19 12-18
D-2 6'-12'	D-19 18-24
D-4 6'-12'	D-20 12-18
D-4 12'-18'	D-20 18-24
D-4 18'-22'	D-23 18-24
D-7 6'-12'	D-4 31-42
D-7 12'-18'	D4/D7/D8/D12 SAND
D-7 18'-24'	D-7 28'-42'
D-8 18'-24'	D-8 30'-42'
D-11 12'-18'	D-11 28'-42'
D-11 18'-24'	D3/D11/D15/D16 SAND
D-12 6'-12'	D3/D11/D14/D15 ORG
D-12 12'-18'	D-12 28' -42'
D-12 18'-24'	D4/D7/D8/D12 ORG
D-14 18'-24'	D-14 27'42'
D-15 6'-12'	D-15 30'42'
D-15 12'-18'	D-17 30-42
D-15 18'-24'	COMPOSITE D18, D19 AND D20
D-16 12'-18'	D-20 28-42
D-18 6-12	D23 30-42

August 12, 2016

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 2nd Quarter 2016  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and March 18, 2014 and most recently renewed on September 9, 2014. On September 20, 2015 the BUDA expired.

This report covers activities conducted during the period of April 1, 2016 to June 30, 2016.

### **Construction Activities**

Construction activities during this reporting period consisted of:

- The distribution of previously stock piled final capping soil (compliant with all RIDEM criteria);
- The delivery and management of newly accepted final capping soil;
- Seeding/erosion control activities; and
- The delivery and management of soils per Appendix A of the RIDEM Rules and Regulations for Composting and Solid Waste Management Facilities.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

An attached table summarizes the soils delivered to the Property during this reporting period. The required laboratory analysis data for the soil reported on the table is provided in Appendix B.

**Complaints**

No complaints were received directly by APE during this reporting period.

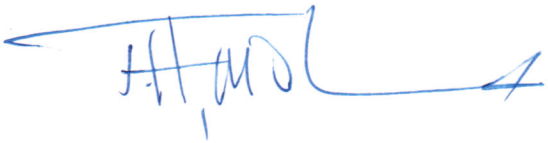
**Schedule**

The attached figure shows the approximate status of the capping project. The APE project team estimates that approximately 20,000 cubic yards will be required to complete the capping project. It is important to note that due to settlement and compaction, the final volume of capping soil required to cap the landfill is driven by existing conditions and the elevations in the approved final site grading plan and will not be determined until the project is very close to meeting the elevations in the grading plan.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC

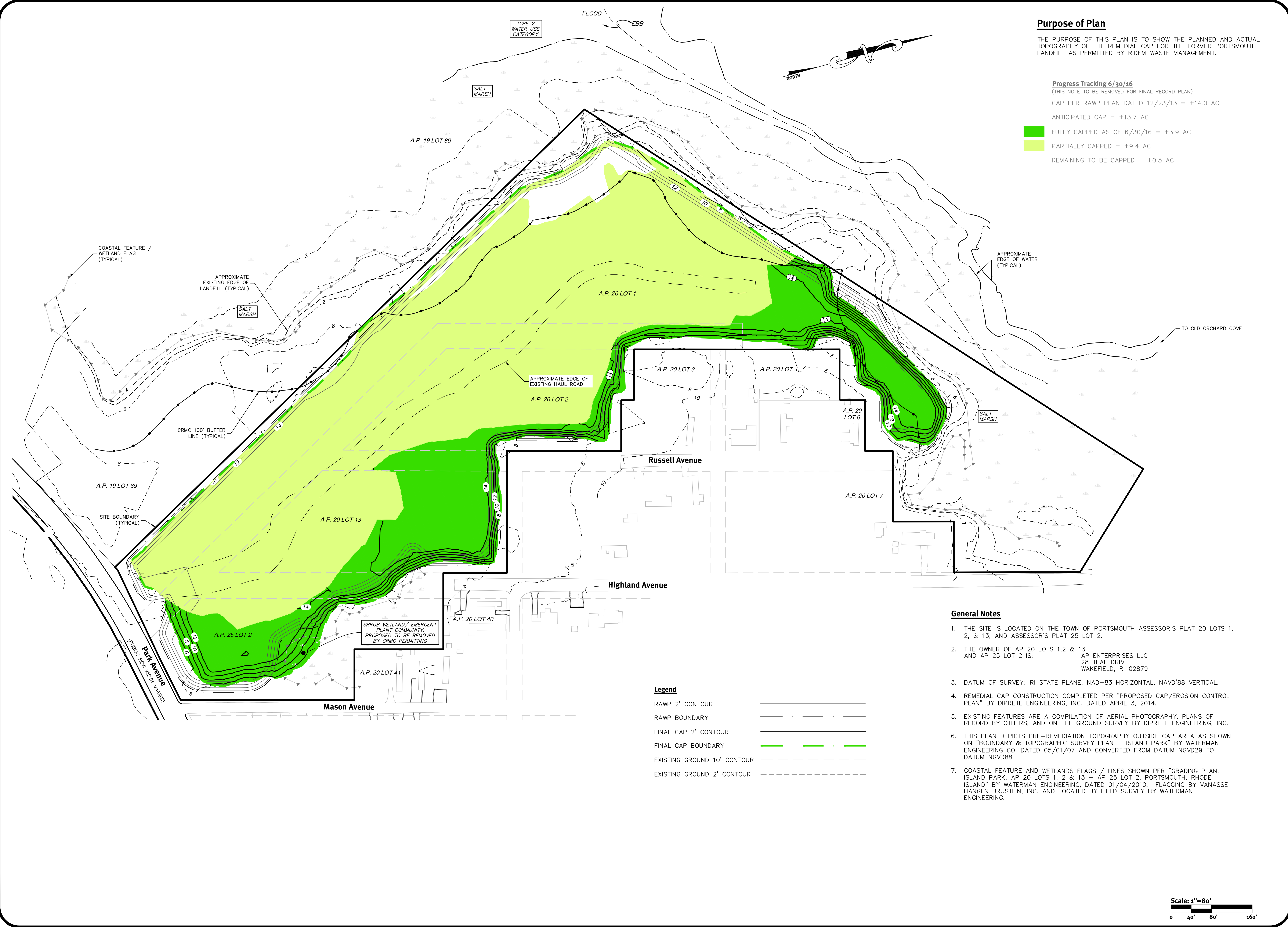


Timothy M. O'Connor, PE, LEED-AP  
Principal

**Former Portsmouth Landfill Soils Accepted  
2nd Quarter 2016**

<b>Delivery Dates</b>	<b>Source</b>	<b>Consultant</b>	<b>Quantity (tons)</b>
April 7 - 19, 2016	DPW Oxford, MA	Capital Environmental	3,284.90
May 25 - 31, 2016	243 Church Street, Pembroke, MA	EST Associates, Inc.	785.28
<b>Notes</b>		Total	4,070.18

\\storagesg\dmain\projects\2057-001\_park\_avenue\landfill\drawings\2057-001\_sht.dwg, plotted: 8/11/2016



**Purpose of Plan**

THE PURPOSE OF THIS PLAN IS TO SHOW THE PLANNED AND ACTUAL TOPOGRAPHY OF THE REMEDIAL CAP FOR THE FORMER PORTSMOUTH LANDFILL AS PERMITTED BY RIDEM WASTE MANAGEMENT.

**Progress Tracking 6/30/16**  
 (THIS NOTE TO BE REMOVED FOR FINAL RECORD PLAN)  
 CAP PER RAWP PLAN DATED 12/23/13 = ±14.0 AC  
 ANTICIPATED CAP = ±13.7 AC  
 FULLY CAPPED AS OF 6/30/16 = ±3.9 AC  
 PARTIALLY CAPPED = ±9.4 AC  
 REMAINING TO BE CAPPED = ±0.5 AC

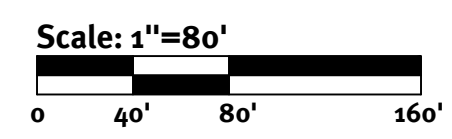
- FULLY CAPPED AS OF 6/30/16 = ±3.9 AC
- PARTIALLY CAPPED = ±9.4 AC

**General Notes**

1. THE SITE IS LOCATED ON THE TOWN OF PORTSMOUTH ASSESSOR'S PLAT 20 LOTS 1, 2, & 13, AND ASSESSOR'S PLAT 25 LOT 2.
2. THE OWNER OF AP 20 LOTS 1, 2 & 13 AND AP 25 LOT 2 IS:  
 AP ENTERPRISES LLC  
 28 TEAL DRIVE  
 WAKEFIELD, RI 02879
3. DATUM OF SURVEY: RI STATE PLANE, NAD-83 HORIZONTAL, NAVD'88 VERTICAL.
4. REMEDIAL CAP CONSTRUCTION COMPLETED PER "PROPOSED CAP/EROSION CONTROL PLAN" BY DIPRETE ENGINEERING, INC. DATED APRIL 3, 2014.
5. EXISTING FEATURES ARE A COMPILATION OF AERIAL PHOTOGRAPHY, PLANS OF RECORD BY OTHERS, AND ON THE GROUND SURVEY BY DIPRETE ENGINEERING, INC.
6. THIS PLAN DEPICTS PRE-REMEDIATION TOPOGRAPHY OUTSIDE CAP AREA AS SHOWN ON "BOUNDARY & TOPOGRAPHIC SURVEY PLAN - ISLAND PARK" BY WATERMAN ENGINEERING CO. DATED 05/01/07 AND CONVERTED FROM DATUM NGVD29 TO DATUM NGVD88.
7. COASTAL FEATURE AND WETLANDS FLAGS / LINES SHOWN PER "GRADING PLAN, ISLAND PARK, AP 20 LOTS 1, 2 & 13 - AP 25 LOT 2, PORTSMOUTH, RHODE ISLAND" BY WATERMAN ENGINEERING, DATED 01/04/2010. FLAGGING BY VANASSE HANGEN BRUSTLIN, INC. AND LOCATED BY FIELD SURVEY BY WATERMAN ENGINEERING.

**Legend**

- RAWP 2' CONTOUR
- RAWP BOUNDARY
- FINAL CAP 2' CONTOUR
- FINAL CAP BOUNDARY
- EXISTING GROUND 10' CONTOUR
- EXISTING GROUND 2' CONTOUR



**DiPrete Engineering**  
 Two Stafford Court Cranston, RI 02920  
 tel 401-943-1000 fax 401-644-6006 www.DiPrete-Eng.com  
**Engineers • Planners • Surveyors**

**PROGRESS**  
**8/11/16**

NO.	DATE	DESCRIPTION	BY
0	08/11/2016	Progress Record Plan	BJ/ADD
Checked By: ADD			

**RAWP Closure Record Plan**  
**Former Kidd/Portsmouth Landfill**  
 Assessor's Map 20 Lots 1, 2 & 13 Assessors Map 25 Lot 2  
 Park Avenue, Portsmouth, Rhode Island  
 Owner:  
**AP Enterprises, LLC**  
 28 Teal Drive, Wakefield, Rhode Island 02879  
 DI JOB NO: 2057-001 Copyright 2016 by DiPrete Engineering Associates, Inc.



# Appendix A – Photographs



**Photo 1 – Along the Eastern Limit of Disturbance Looking South**



**Photo 2 – Along the Eastern Limit of Disturbance Looking North**



**Photo 3 – Center Portion of Site Looking Northwest**



**Photo 4 – Center Portion of Site Looking South**



**Photo 5 – Northernmost Portion of Site**



**Photo 6 – Western Portion of Site Looking South (Additional Capping Soil Required)**

# Appendix B – Analytical Data

**CERTIFICATE OF ANALYSIS**

EST/TG2  
Attn: Mr. Eric Simpson  
51 Fremont Street  
Needham, MA 02494

**Date Received:** 5/12/16  
**Date Reported:** 5/16/16  
**P.O. #:**  
**Work Order #:** 1605-10867

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**DESCRIPTION:** COLBEA - PEMBROKE

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Subject sample(s) has/have been analyzed by our Warwick, RI laboratory with the attached results.

Reference: All parameters were analyzed by U.S. EPA and Massachusetts Contingency Plan (MCP) approved methodologies where applicable. The specific methodologies are listed in the methods column of the Certificate of Analysis.

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI LAI00033, MA M-RI015, CT PH-0508, ME RI00015  
NH 2070, NY 11726

This Certificate represents all data associated with the referenced work order and is paginated for completeness. The complete Certificate includes one attachment; the original Chain of Custody.

If you have any questions regarding this work, or if we may be of further assistance, please contact our customer service department.

Approved by:



Data Reporting

enc: Chain of Custody

Customer Name : EST/TG2

Work Order #: 1605-10867

**MassDEP Analytical Protocol Certification Form**

Laboratory Name: R.I. Analytical Laboratories Work Order #: 1605-10867  
Project / Location: COLBEA - PEMBROKE RTN :

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):  
1605-10867-001 through 1605-10867-002

Matrices:  Groundwater/Surface Water  Soil / Sediment  Drinking Water  Air  Other

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B <input checked="" type="checkbox"/>	MassDEP VPH CAM IV A <input type="checkbox"/>	8081 Pesticides CAM V B <input type="checkbox"/>	7196 Hex Cr CAM VI B <input type="checkbox"/>	MassDEP APH CAM IX A <input type="checkbox"/>
8270 SVOC CAM II B <input checked="" type="checkbox"/>	7010 Metals CAM III C <input type="checkbox"/>	MassDEP EPH CAM IV B <input type="checkbox"/>	8151 Herbicides CAM V C <input type="checkbox"/>	8330 Explosives CAM VIII A <input type="checkbox"/>	TO-15 VOC CAM IX B <input type="checkbox"/>
6010 Metals CAM III A <input checked="" type="checkbox"/>	6020 Metals CAM III D <input type="checkbox"/>	8082 PCB CAM V A <input checked="" type="checkbox"/>	9014 Total Cyanide /PAC CAM VI A <input type="checkbox"/>	6860 Perchlorate CAM V111 B <input type="checkbox"/>	

**Affirmative responses to Questions A through F are required for "Presumptive Certainty" status**

A	Were all samples received in a condition consistent with those described on the Chain-of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B	Were the analytical methods(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s) ? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**Responses to Questions G,H and I below are required for "Presumptive Certainty" status**

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>
<small>Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.</small>		
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <sup>1</sup>
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <sup>1</sup>

<sup>1</sup> All negative responses must be addressed in an attached laboratory narrative.

**I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.**

Signature Eric H. Jensen  
Printed Name: Eric H. Jensen

Position: Laboratory Director  
Date: 5-17-16

# Case Narrative

Date: 5/16/2016

EST/TG2

Attn: Mr. Eric Simpson

51 Fremont Street  
Needham, MA 02494

Project: COLBEA - PEMBROKE

Work Order #: 1605-10867

The following exceptions were noted for this Work Order:

The methods requested for pH, Specific Conductance, Flashpoint, Sulfide Reactivity, Cyanide Reactivity, and TPH GC/FID are not listed in the table of contents for compendium of MCP analytical methods. Therefore, there is no guideline for presumptive certainty.

Volatile Organics by 8260

Question H - Analyte 2-Butanone(MEK) had a minimum response factor below the recommended limits criteria in the Continuing Calibration Standard.

Question H - Laboratory control sample (5/12/16) / laboratory control sample duplicate (5/12/16) had analytes outside the 70%-130% QC acceptance limits. Up to 10% of the analytes are allowed to be out. The specific outliers include, (Dichlorodifluoromethane 56%, 56%). These analytes were not detected in the associated samples.

Semi Volatile organics by 8270

Question H - Laboratory control sample (5/16/16)/ laboratory control sample duplicate (5/16/16) had analytes outside the 40%-140% for base-neutrals and 30%-130% for acid compounds QC acceptance limits. Up to 10% are allowed to exceed the criteria. The specific outliers include, (2-Methyl-4,6-dinitrophenol LCSD 26%, 2,4-Dinitrophenol 15%, 10%). These analytes were not detected in the associated samples.

Question H - The RPD for (2-Methyl-4,6-dinitrophenol 40%, 2,4-Dinitrophenol 39%) in the Laboratory control sample (5/16/16)/ laboratory control sample duplicate (5/16/16) was outside the 30% (soil) QC acceptance limits.

Total Metals by 6010

Question H - No MS/MSD requested for Soil/Sediment sample in this work order.

Question I - Per the client's request, only a subset of the MCP analyte list for SW-846 Method 6010 Total Metals is reported.

There were no additional exceptions or analytical issues to discuss concerning the testing requirements for the project.



**R.I. Analytical Laboratories, Inc.**  
**CERTIFICATE OF ANALYSIS**

EST/TG2

Date Received: 5/12/16

Work Order #: 1605-10867

COLBEA - PEMBROKE

Sample # 001

**SAMPLE DESCRIPTION:** DISPENSER DISPOSAL-1**SAMPLE TYPE:** COMPOSITE**SAMPLE DATE/TIME:** 5/12/2016

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
COMM-97 Landfill Protocol						
pH	6.8		SU	SW-846 9045C	5/12/16 22:35	DET
Specific Conductance	120	1.0	uMHOS/CM	SM2510B 18-21ed	5/13/16 12:20	ML
Flashpoint	>200	80	deg F	SW-846 1010	5/13/16 16:25	RAT
Reactivity CN & S Soils						
Sulfide Reactivity	<2.5	2.5	mg/kg	SW-846 7.3.4.2	5/16/16 16:50	ML
Cyanide Reactivity	<0.10	0.10	mg/kg	SW-846 7.3.3	5/16/16 14:50	ML
TPH						
TPH GC/FID	27	11	mg/kg dry	SW-846 8100M	5/13/16 10:17	KP
Surrogate			RANGE	SW-846 8100M	5/13/16 10:17	KP
2-Fluorobiphenyl	71		40-140%	SW-846 8100M	5/13/16 10:17	KP
PCB						
Aroclor-1016	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 13:26	JBW
Aroclor-1221	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 13:26	JBW
Aroclor-1232	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 13:26	JBW
Aroclor-1242	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 13:26	JBW
Aroclor-1248	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 13:26	JBW
Aroclor-1254	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 13:26	JBW
Aroclor-1260	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 13:26	JBW
Aroclor-1262	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 13:26	JBW
Aroclor-1268	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 13:26	JBW
Surrogate			RANGE			
Tetrachloro-m-xylene (TCMX)	71		30-150%	SW-846 8082A	5/16/16 13:26	JBW
Decachlorobiphenyl	73		30-150%	SW-846 8082A	5/16/16 13:26	JBW
Extraction Date				SW-846 3546	5/12/16 20:00	CCS
Volatile Organic Compounds						
Acetone	<1.2	1.2	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Tertiary Amyl Methyl Ether	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Benzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Bromobenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Bromochloromethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Bromodichloromethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Bromoform	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Bromomethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Sec-butylbenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF

**R.I. Analytical Laboratories, Inc.**  
**CERTIFICATE OF ANALYSIS**

EST/TG2

Date Received: 5/12/16

Work Order #: 1605-10867

COLBEA - PEMBROKE

Sample # 001

**SAMPLE DESCRIPTION:** DISPENSER DISPOSAL-1**SAMPLE TYPE:** COMPOSITE**SAMPLE DATE/TIME:** 5/12/2016

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
n-Butylbenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
tert-Butylbenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Carbon Disulfide	<0.29	0.29	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Carbon Tetrachloride	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Chlorobenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Dibromochloromethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Chloroethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Chloroform	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Chloromethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
2-Chlorotoluene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
4-Chlorotoluene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,2-Dibromo-3-Chloropropane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,2-Dibromoethane(EDB)	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Dibromomethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,3-Dichlorobenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,2-Dichlorobenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,4-Dichlorobenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
n-Propylbenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Dichlorodifluoromethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,1-Dichloroethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,2-Dichloroethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,1-Dichloroethene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
cis-1,2-Dichloroethene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
trans-1,2-Dichloroethylene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,2-Dichloropropane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,3-Dichloropropane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
2,2-Dichloropropane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,1-Dichloropropene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
cis-1,3-Dichloropropene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
trans-1,3-Dichloropropylene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Diethyl ether	<1.2	1.2	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Diisopropyl Ether (DIPE)	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,4-Dioxane	<5.9	5.9	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Ethyl Tertiary Butyl Ether	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Ethylbenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Hexachlorobutadiene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
2-Hexanone	<1.2	1.2	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF

**R.I. Analytical Laboratories, Inc.**  
**CERTIFICATE OF ANALYSIS**

EST/TG2

Date Received: 5/12/16

Work Order #: 1605-10867

COLBEA - PEMBROKE

Sample # 001

**SAMPLE DESCRIPTION:** DISPENSER DISPOSAL-1**SAMPLE TYPE:** COMPOSITE**SAMPLE DATE/TIME:** 5/12/2016

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Isopropylbenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
p-Isopropyltoluene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
2-Butanone(MEK)	<1.2	1.2	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
4-Methyl-2-pentanone(MIBK)	<1.2	1.2	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
MTBE	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Methylene Chloride	<0.29	0.29	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Naphthalene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,1,2-Trichloroethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Styrene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,1,1,2-Tetrachloroethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,1,2,2-Tetrachloroethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Tetrachloroethene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Tetrahydrofuran	<1.2	1.2	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Toluene	0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,2,4-Trichlorobenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,2,3-Trichlorobenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,1,1-Trichloroethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Trichloroethene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Trichlorofluoromethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,2,3-Trichloropropane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,2,4-Trimethylbenzene	0.87	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
1,3,5-Trimethylbenzene	0.30	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Vinyl Chloride	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
o-Xylene	0.2	0.12	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
m,p-Xylene	0.51	0.24	mg/kg dry	SW-846 8260C	5/12/16 19:44	KF
Surrogates			RANGE			
Dibromofluoromethane	83		70-130%	SW-846 8260C	5/12/16 19:44	KF
Toluene-d8	81		70-130%	SW-846 8260C	5/12/16 19:44	KF
4-Bromofluorobenzene	80		70-130%	SW-846 8260C	5/12/16 19:44	KF
1,2 Dichloroethane-d4	84		70-130%	SW-846 8260C	5/12/16 19:44	KF
Semi-Volatile Organic Comp.						
Acenaphthene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Acenaphthylene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Anthracene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Benzdine	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Benzo(a)anthracene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Benzo(b)fluoranthene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB

**R.I. Analytical Laboratories, Inc.**  
**CERTIFICATE OF ANALYSIS**

EST/TG2

Date Received: 5/12/16

Work Order #: 1605-10867

COLBEA - PEMBROKE

Sample # 001

**SAMPLE DESCRIPTION:** DISPENSER DISPOSAL-1**SAMPLE TYPE:** COMPOSITE**SAMPLE DATE/TIME:** 5/12/2016

<b>PARAMETER</b>	<b>SAMPLE RESULTS</b>	<b>DET. LIMIT</b>	<b>UNITS</b>	<b>METHOD</b>	<b>DATE ANALYZED</b>	<b>ANALYST</b>
Benzo(k)fluoranthene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Benzo(g,h,i)perylene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Benzo(a)pyrene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Bis(2-chloroethyl)ether	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Bis(2-Chloroethoxy)methane	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Bis(2-Chloroisopropyl)Ether	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Bis(2-ethylhexyl)phthalate	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
4-Bromophenyl phenyl ether	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Butylbenzyl phthalate	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
2-Chloronaphthalene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
4-Chlorophenyl phenyl ether	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Chrysene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Dibenzo(a,h)anthracene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Di-n-butyl phthalate	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
1,2-Dichlorobenzene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
1,3-Dichlorobenzene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
1,4-Dichlorobenzene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
3,3'-Dichlorobenzidine	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Diethyl phthalate	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Dimethyl phthalate	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
2,4-Dinitrotoluene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
2,6-Dinitrotoluene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Di-n-octyl phthalate	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
1,2-Diphenylhydrazine	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Fluoranthene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Fluorene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Hexachlorobenzene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Hexachlorobutadiene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Hexachlorocyclopentadiene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Hexachloroethane	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Indeno(1,2,3-cd)pyrene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Isophorone	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
2-Methylnaphthalene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Naphthalene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Nitrobenzene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
N-nitrosodimethylamine	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
N-nitrosodiphenylamine	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB

**R.I. Analytical Laboratories, Inc.**  
**CERTIFICATE OF ANALYSIS**

EST/TG2

Date Received: 5/12/16

Work Order #: 1605-10867

COLBEA - PEMBROKE

Sample # 001

**SAMPLE DESCRIPTION:** DISPENSER DISPOSAL-1**SAMPLE TYPE:** COMPOSITE**SAMPLE DATE/TIME:** 5/12/2016

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
N-nitrosodi-n-propylamine	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Phenanthrene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Pyrene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
1,2,4-Trichlorobenzene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
4-Chloro-3-methylphenol	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
2-Chlorophenol	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
2,4-Dichlorophenol	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
2,4-Dimethylphenol	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
2-Methyl-4,6-dinitrophenol	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
2,4-Dinitrophenol	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
2-Nitrophenol	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
4-Nitrophenol	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Pentachlorophenol	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Phenol	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
2,4,5-Trichlorophenol	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
2,4,6-Trichlorophenol	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
4-Chloroaniline	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Dibenzofuran	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
2-Methyl Phenol	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
3 & 4-Methylphenols	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Aniline	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Acetophenone	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Azobenzene	<0.36	0.36	mg/kg dry	SW-846 8270D	5/16/16 13:28	JEB
Surrogates			RANGE			
Phenol-d5	58		30-130%	SW-846 8270D	5/16/16 13:28	JEB
2-Fluorophenol	59		30-130%	SW-846 8270D	5/16/16 13:28	JEB
2,4,6-Tribromophenol	74		30-130%	SW-846 8270D	5/16/16 13:28	JEB
Nitrobenzene-d5	58		30-130%	SW-846 8270D	5/16/16 13:28	JEB
2-Fluorobiphenyl	58		30-130%	SW-846 8270D	5/16/16 13:28	JEB
P-Terphenyl-d14	54		30-130%	SW-846 8270D	5/16/16 13:28	JEB
Semi Extraction Date				SW-846 3546	5/12/16 14:35	CCS
Total Metals						
Arsenic	<2.7	2.7	mg/kg dry	SW-846 6010C	5/16/16 12:32	JRW
Barium	12	0.54	mg/kg dry	SW-846 6010C	5/16/16 12:32	JRW
Cadmium	1.2	0.27	mg/kg dry	SW-846 6010C	5/16/16 12:32	JRW
Chromium	8.8	1.6	mg/kg dry	SW-846 6010C	5/16/16 12:32	JRW
Lead	9.9	2.1	mg/kg dry	SW-846 6010C	5/16/16 12:32	JRW

**R.I. Analytical Laboratories, Inc.**  
**CERTIFICATE OF ANALYSIS**

EST/TG2

Date Received: 5/12/16

Work Order #: 1605-10867

COLBEA - PEMBROKE

Sample # 001

**SAMPLE DESCRIPTION:** DISPENSER DISPOSAL-1**SAMPLE TYPE:** COMPOSITE**SAMPLE DATE/TIME:** 5/12/2016

<b>PARAMETER</b>	<b>SAMPLE RESULTS</b>	<b>DET. LIMIT</b>	<b>UNITS</b>	<b>METHOD</b>	<b>DATE ANALYZED</b>		<b>ANALYST</b>
Mercury	<0.094	0.094	mg/kg dry	SW-846 7471B	5/16/16	12:42	JRW
Selenium	<5.4	5.4	mg/kg dry	SW-846 6010C	5/16/16	12:32	JRW
Silver	<1.1	1.1	mg/kg dry	SW-846 6010C	5/16/16	12:32	JRW
ICP Digestion				SW-846 3050B	5/13/16	22:12	RBR
Mercury Digestion				SW-846 7471B	5/16/16	12:04	CRC
Extraction Date				SW-846 5035	5/12/16	0:00	*CS

**R.I. Analytical Laboratories, Inc.**  
**CERTIFICATE OF ANALYSIS**

EST/TG2

Date Received: 5/12/16

Work Order #: 1605-10867

COLBEA - PEMBROKE

Sample # 002

**SAMPLE DESCRIPTION:** DISPENSER DISPOSAL-2**SAMPLE TYPE:** COMPOSITE**SAMPLE DATE/TIME:** 5/12/2016

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
COMM-97 Landfill Protocol						
pH	8.1		SU	SW-846 9045C	5/12/16 22:35	DET
Specific Conductance	37	1.0	uMHOS/CM	SM2510B 18-21ed	5/13/16 12:20	ML
Flashpoint	>200	80	deg F	SW-846 1010	5/13/16 16:35	RAT
Reactivity CN & S Soils						
Sulfide Reactivity	<2.5	2.5	mg/kg	SW-846 7.3.4.2	5/16/16 16:50	ML
Cyanide Reactivity	<0.10	0.10	mg/kg	SW-846 7.3.3	5/16/16 14:50	ML
TPH						
TPH GC/FID	37	11	mg/kg dry	SW-846 8100M	5/13/16 11:15	KP
Surrogate			RANGE	SW-846 8100M	5/13/16 11:15	KP
2-Fluorobiphenyl	78		40-140%	SW-846 8100M	5/13/16 11:15	KP
PCB						
Aroclor-1016	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 14:24	JBW
Aroclor-1221	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 14:24	JBW
Aroclor-1232	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 14:24	JBW
Aroclor-1242	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 14:24	JBW
Aroclor-1248	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 14:24	JBW
Aroclor-1254	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 14:24	JBW
Aroclor-1260	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 14:24	JBW
Aroclor-1262	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 14:24	JBW
Aroclor-1268	<0.1	0.1	mg/kg dry	SW-846 8082A	5/16/16 14:24	JBW
Surrogate			RANGE			
Tetrachloro-m-xylene (TCMX)	78		30-150%	SW-846 8082A	5/16/16 14:24	JBW
Decachlorobiphenyl	93		30-150%	SW-846 8082A	5/16/16 14:24	JBW
Extraction Date				SW-846 3546	5/12/16 20:00	CCS
Volatile Organic Compounds						
Acetone	<1.2	1.2	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Tertiary Amyl Methyl Ether	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Benzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Bromobenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Bromochloromethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Bromodichloromethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Bromoform	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Bromomethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Sec-butylbenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF

**R.I. Analytical Laboratories, Inc.**  
**CERTIFICATE OF ANALYSIS**

EST/TG2

Date Received: 5/12/16

Work Order #: 1605-10867

COLBEA - PEMBROKE

Sample # 002

**SAMPLE DESCRIPTION:** DISPENSER DISPOSAL-2**SAMPLE TYPE:** COMPOSITE**SAMPLE DATE/TIME:** 5/12/2016

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
n-Butylbenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
tert-Butylbenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Carbon Disulfide	<0.30	0.30	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Carbon Tetrachloride	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Chlorobenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Dibromochloromethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Chloroethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Chloroform	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Chloromethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
2-Chlorotoluene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
4-Chlorotoluene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,2-Dibromo-3-Chloropropane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,2-Dibromoethane(EDB)	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Dibromomethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,3-Dichlorobenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,2-Dichlorobenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,4-Dichlorobenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
n-Propylbenzene	0.22	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Dichlorodifluoromethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,1-Dichloroethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,2-Dichloroethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,1-Dichloroethene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
cis-1,2-Dichloroethene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
trans-1,2-Dichloroethylene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,2-Dichloropropane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,3-Dichloropropane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
2,2-Dichloropropane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,1-Dichloropropene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
cis-1,3-Dichloropropene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
trans-1,3-Dichloropropylene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Diethyl ether	<1.2	1.2	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Diisopropyl Ether (DIPE)	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,4-Dioxane	<5.9	5.9	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Ethyl Tertiary Butyl Ether	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Ethylbenzene	0.44	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Hexachlorobutadiene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
2-Hexanone	<1.2	1.2	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF



**R.I. Analytical Laboratories, Inc.**  
**CERTIFICATE OF ANALYSIS**

EST/TG2

Date Received: 5/12/16

Work Order #: 1605-10867

COLBEA - PEMBROKE

Sample # 002

**SAMPLE DESCRIPTION:** DISPENSER DISPOSAL-2**SAMPLE TYPE:** COMPOSITE**SAMPLE DATE/TIME:** 5/12/2016

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Isopropylbenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
p-Isopropyltoluene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
2-Butanone(MEK)	<1.2	1.2	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
4-Methyl-2-pentanone(MIBK)	<1.2	1.2	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
MTBE	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Methylene Chloride	<0.30	0.30	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Naphthalene	0.24	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,1,2-Trichloroethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Styrene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,1,1,2-Tetrachloroethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,1,2,2-Tetrachloroethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Tetrachloroethene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Tetrahydrofuran	<1.2	1.2	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Toluene	1.0	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,2,4-Trichlorobenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,2,3-Trichlorobenzene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,1,1-Trichloroethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Trichloroethene	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Trichlorofluoromethane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,2,3-Trichloropropane	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,2,4-Trimethylbenzene	1.5	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
1,3,5-Trimethylbenzene	0.42	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Vinyl Chloride	<0.12	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
o-Xylene	0.73	0.12	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
m,p-Xylene	1.8	0.24	mg/kg dry	SW-846 8260C	5/12/16 20:11	KF
Surrogates			RANGE			
Dibromofluoromethane	89		70-130%	SW-846 8260C	5/12/16 20:11	KF
Toluene-d8	87		70-130%	SW-846 8260C	5/12/16 20:11	KF
4-Bromofluorobenzene	86		70-130%	SW-846 8260C	5/12/16 20:11	KF
1,2 Dichloroethane-d4	86		70-130%	SW-846 8260C	5/12/16 20:11	KF
Semi-Volatile Organic Comp.						
Acenaphthene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Acenaphthylene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Anthracene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Benzdine	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Benzo(a)anthracene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Benzo(b)fluoranthene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB

**R.I. Analytical Laboratories, Inc.**  
**CERTIFICATE OF ANALYSIS**

EST/TG2

Date Received: 5/12/16

Work Order #: 1605-10867

COLBEA - PEMBROKE

Sample # 002

**SAMPLE DESCRIPTION:** DISPENSER DISPOSAL-2**SAMPLE TYPE:** COMPOSITE**SAMPLE DATE/TIME:** 5/12/2016

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Benzo(k)fluoranthene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Benzo(g,h,i)perylene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Benzo(a)pyrene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Bis(2-chloroethyl)ether	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Bis(2-Chloroethoxy)methane	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Bis(2-Chloroisopropyl)Ether	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Bis(2-ethylhexyl)phthalate	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
4-Bromophenyl phenyl ether	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Butylbenzyl phthalate	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
2-Chloronaphthalene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
4-Chlorophenyl phenyl ether	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Chrysene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Dibenzo(a,h)anthracene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Di-n-butyl phthalate	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
1,2-Dichlorobenzene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
1,3-Dichlorobenzene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
1,4-Dichlorobenzene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
3,3'-Dichlorobenzidine	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Diethyl phthalate	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Dimethyl phthalate	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
2,4-Dinitrotoluene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
2,6-Dinitrotoluene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Di-n-octyl phthalate	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
1,2-Diphenylhydrazine	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Fluoranthene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Fluorene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Hexachlorobenzene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Hexachlorobutadiene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Hexachlorocyclopentadiene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Hexachloroethane	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Indeno(1,2,3-cd)pyrene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Isophorone	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
2-Methylnaphthalene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Naphthalene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Nitrobenzene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
N-nitrosodimethylamine	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
N-nitrosodiphenylamine	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB

**R.I. Analytical Laboratories, Inc.**  
**CERTIFICATE OF ANALYSIS**

EST/TG2

Date Received: 5/12/16

Work Order #: 1605-10867

COLBEA - PEMBROKE

Sample # 002

**SAMPLE DESCRIPTION:** DISPENSER DISPOSAL-2**SAMPLE TYPE:** COMPOSITE**SAMPLE DATE/TIME:** 5/12/2016

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
N-nitrosodi-n-propylamine	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Phenanthrene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Pyrene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
1,2,4-Trichlorobenzene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
4-Chloro-3-methylphenol	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
2-Chlorophenol	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
2,4-Dichlorophenol	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
2,4-Dimethylphenol	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
2-Methyl-4,6-dinitrophenol	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
2,4-Dinitrophenol	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
2-Nitrophenol	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
4-Nitrophenol	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Pentachlorophenol	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Phenol	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
2,4,5-Trichlorophenol	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
2,4,6-Trichlorophenol	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
4-Chloroaniline	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Dibenzofuran	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
2-Methyl Phenol	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
3 & 4-Methylphenols	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Aniline	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Acetophenone	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Azobenzene	<0.37	0.37	mg/kg dry	SW-846 8270D	5/16/16 13:57	JEB
Surrogates			RANGE			
Phenol-d5	67		30-130%	SW-846 8270D	5/16/16 13:57	JEB
2-Fluorophenol	69		30-130%	SW-846 8270D	5/16/16 13:57	JEB
2,4,6-Tribromophenol	86		30-130%	SW-846 8270D	5/16/16 13:57	JEB
Nitrobenzene-d5	69		30-130%	SW-846 8270D	5/16/16 13:57	JEB
2-Fluorobiphenyl	67		30-130%	SW-846 8270D	5/16/16 13:57	JEB
P-Terphenyl-d14	67		30-130%	SW-846 8270D	5/16/16 13:57	JEB
Semi Extraction Date				SW-846 3546	5/12/16 14:35	CCS
Total Metals						
Arsenic	<2.7	2.7	mg/kg dry	SW-846 6010C	5/16/16 12:36	JRW
Barium	16	0.54	mg/kg dry	SW-846 6010C	5/16/16 12:36	JRW
Cadmium	1.5	0.27	mg/kg dry	SW-846 6010C	5/16/16 12:36	JRW
Chromium	9.2	1.6	mg/kg dry	SW-846 6010C	5/16/16 12:36	JRW
Lead	9.6	2.2	mg/kg dry	SW-846 6010C	5/16/16 12:36	JRW

**R.I. Analytical Laboratories, Inc.**  
**CERTIFICATE OF ANALYSIS**

EST/TG2

Date Received: 5/12/16

Work Order #: 1605-10867

COLBEA - PEMBROKE

Sample # 002

**SAMPLE DESCRIPTION:** DISPENSER DISPOSAL-2**SAMPLE TYPE:** COMPOSITE**SAMPLE DATE/TIME:** 5/12/2016

<b>PARAMETER</b>	<b>SAMPLE RESULTS</b>	<b>DET. LIMIT</b>	<b>UNITS</b>	<b>METHOD</b>	<b>DATE ANALYZED</b>		<b>ANALYST</b>
Mercury	<0.11	0.11	mg/kg dry	SW-846 7471B	5/16/16	12:44	JRW
Selenium	<5.4	5.4	mg/kg dry	SW-846 6010C	5/16/16	12:36	JRW
Silver	<1.1	1.1	mg/kg dry	SW-846 6010C	5/16/16	12:36	JRW
ICP Digestion				SW-846 3050B	5/13/16	22:12	RBR
Mercury Digestion				SW-846 7471B	5/16/16	12:04	CRC
Extraction Date				SW-846 5035	5/12/16	0:00	*CS

## QA/QC Report

Client: EST/TG2  
 WO #: 1605-10867  
 Date: 5/16/2016

## -Method Blanks Results-

Parameter	Units	Results	Date Analyzed
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## PCB

Aroclor-1016	mg/kg dry	<0.1	5/16/2016
Aroclor-1221	mg/kg dry	<0.1	5/16/2016
Aroclor-1232	mg/kg dry	<0.1	5/16/2016
Aroclor-1242	mg/kg dry	<0.1	5/16/2016
Aroclor-1248	mg/kg dry	<0.1	5/16/2016
Aroclor-1254	mg/kg dry	<0.1	5/16/2016
Aroclor-1262	mg/kg dry	<0.1	5/16/2016
Aroclor-1268	mg/kg dry	<0.1	5/16/2016
Aroclor-1260	mg/kg dry	<0.1	5/16/2016
<b>Surrogate</b>	<b>RANGE</b>		5/16/2016
Tetrachloro-m-xylene (TCMX)	30-150%	83	5/16/2016
Decachlorobiphenyl	30-150%	83	5/16/2016

## Total Petroleum Hydrocarbons by Method 8100

TPH GC/FID	mg/kg dry	<10	5/13/2016
<b>Surrogate</b>	<b>RANGE</b>		5/13/2016
2-Fluorobiphenyl	40-140%	76	5/13/2016

## Volatile Organics by Method 8260

Acetone	mg/kg dry	<1.0	5/12/2016
Tertiary Amyl Methyl Ether	mg/kg dry	<0.10	5/12/2016
Benzene	mg/kg dry	<0.10	5/12/2016
Bromobenzene	mg/kg dry	<0.10	5/12/2016
Bromochloromethane	mg/kg dry	<0.10	5/12/2016
Bromodichloromethane	mg/kg dry	<0.10	5/12/2016
Bromoform	mg/kg dry	<0.10	5/12/2016
Bromomethane	mg/kg dry	<0.10	5/12/2016
Sec-butylbenzene	mg/kg dry	<0.10	5/12/2016
n-Butylbenzene	mg/kg dry	<0.10	5/12/2016
tert-Butylbenzene	mg/kg dry	<0.10	5/12/2016
Carbon Disulfide	mg/kg dry	<0.25	5/12/2016
Carbon Tetrachloride	mg/kg dry	<0.10	5/12/2016
Chlorobenzene	mg/kg dry	<0.10	5/12/2016
Dibromochloromethane	mg/kg dry	<0.10	5/12/2016
Chloroethane	mg/kg dry	<0.10	5/12/2016
Chloroform	mg/kg dry	<0.10	5/12/2016
Chloromethane	mg/kg dry	<0.10	5/12/2016
2-Chlorotoluene	mg/kg dry	<0.10	5/12/2016
4-Chlorotoluene	mg/kg dry	<0.10	5/12/2016
1,2-Dibromo-3-Chloropropane	mg/kg dry	<0.10	5/12/2016
1,2-Dibromoethane(EDB)	mg/kg dry	<0.10	5/12/2016

## QA/QC Report

Client: EST/TG2  
 WO #: 1605-10867  
 Date: 5/16/2016

## -Method Blanks Results-

Parameter	Units	Results	Date Analyzed
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## Volatile Organics by Method 8260 (cont'd)

Dibromomethane	mg/kg dry	<0.10	5/12/2016
1,3-Dichlorobenzene	mg/kg dry	<0.10	5/12/2016
1,2-Dichlorobenzene	mg/kg dry	<0.10	5/12/2016
1,4-Dichlorobenzene	mg/kg dry	<0.10	5/12/2016
n-Propylbenzene	mg/kg dry	<0.10	5/12/2016
Dichlorodifluoromethane	mg/kg dry	<0.10	5/12/2016
1,1-Dichloroethane	mg/kg dry	<0.10	5/12/2016
1,2-Dichloroethane	mg/kg dry	<0.10	5/12/2016
1,1-Dichloroethene	mg/kg dry	<0.10	5/12/2016
cis-1,2-Dichloroethene	mg/kg dry	<0.10	5/12/2016
trans-1,2-Dichloroethylene	mg/kg dry	<0.10	5/12/2016
1,2-Dichloropropane	mg/kg dry	<0.10	5/12/2016
1,3-Dichloropropane	mg/kg dry	<0.10	5/12/2016
2,2-Dichloropropane	mg/kg dry	<0.10	5/12/2016
1,1-Dichloropropene	mg/kg dry	<0.10	5/12/2016
cis-1,3-Dichloropropene	mg/kg dry	<0.10	5/12/2016
trans-1,3-Dichloropropylene	mg/kg dry	<0.10	5/12/2016
Diethyl ether	mg/kg dry	<1.0	5/12/2016
Diisopropyl ether (DIPE)	mg/kg dry	<0.10	5/12/2016
1,4-Dioxane	mg/kg dry	<5.0	5/12/2016
Ethyl Tertiary Butyl Ether	mg/kg dry	<0.10	5/12/2016
Ethylbenzene	mg/kg dry	<0.10	5/12/2016
Hexachlorobutadiene	mg/kg dry	<0.10	5/12/2016
2-Hexanone	mg/kg dry	<1.0	5/12/2016
Isopropylbenzene	mg/kg dry	<0.10	5/12/2016
p-Isopropyltoluene	mg/kg dry	<0.10	5/12/2016
2-Butanone(MEK)	mg/kg dry	<1.0	5/12/2016
4-Methyl-2-pentanone(MIBK)	mg/kg dry	<1.0	5/12/2016
MTBE	mg/kg dry	<0.10	5/12/2016
Methylene Chloride	mg/kg dry	<0.25	5/12/2016
Naphthalene	mg/kg dry	<0.10	5/12/2016
1,1,2-Trichloroethane	mg/kg dry	<0.10	5/12/2016
Styrene	mg/kg dry	<0.10	5/12/2016
1,1,1,2-Tetrachloroethane	mg/kg dry	<0.10	5/12/2016
1,1,1,2,2-Tetrachloroethane	mg/kg dry	<0.10	5/12/2016
Tetrachloroethene	mg/kg dry	<0.10	5/12/2016
Tetrahydrofuran	mg/kg dry	<1.0	5/12/2016
Toluene	mg/kg dry	<0.10	5/12/2016
1,2,4-Trichlorobenzene	mg/kg dry	<0.10	5/12/2016
1,2,3-Trichlorobenzene	mg/kg dry	<0.10	5/12/2016

## QA/QC Report

Client: EST/TG2  
 WO #: 1605-10867  
 Date: 5/16/2016

## -Method Blanks Results-

Parameter	Units	Results	Date Analyzed
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## Volatile Organics by Method 8260 (cont'd)

1,1,1-Trichloroethane	mg/kg dry	<0.10	5/12/2016
Trichloroethene	mg/kg dry	<0.10	5/12/2016
Trichlorofluoromethane	mg/kg dry	<0.10	5/12/2016
1,2,3-Trichloropropane	mg/kg dry	<0.10	5/12/2016
1,2,4-Trimethylbenzene	mg/kg dry	<0.10	5/12/2016
1,3,5-Trimethylbenzene	mg/kg dry	<0.10	5/12/2016
Vinyl Chloride	mg/kg dry	<0.10	5/12/2016
o-Xylene	mg/kg dry	<0.10	5/12/2016
m,p-Xylene	mg/kg dry	<0.20	5/12/2016
<b>Surrogates</b>	<b>RANGE</b>		5/12/2016
Toluene-d8	70-130%	78	5/12/2016
Dibromofluoromethane	70-130%	81	5/12/2016
1,2 Dichloroethane-d4	70-130%	79	5/12/2016
4-Bromofluorobenzene	70-130%	76	5/12/2016

## Semi-Volatile Organics by Method 8270

Acenaphthene	mg/kg dry	<0.33	5/16/2016
Acenaphthylene	mg/kg dry	<0.33	5/16/2016
Anthracene	mg/kg dry	<0.33	5/16/2016
Benzidine	mg/kg dry	<0.33	5/16/2016
Benzo(a)anthracene	mg/kg dry	<0.33	5/16/2016
Benzo(b)fluoranthene	mg/kg dry	<0.33	5/16/2016
Benzo(k)fluoranthene	mg/kg dry	<0.33	5/16/2016
Benzo(g,h,i)perylene	mg/kg dry	<0.33	5/16/2016
Benzo(a)pyrene	mg/kg dry	<0.33	5/16/2016
Bis(2-chloroethyl)ether	mg/kg dry	<0.33	5/16/2016
Bis(2-Chloroethoxy)methane	mg/kg dry	<0.33	5/16/2016
Bis(2-Chloroisopropyl)Ether	mg/kg dry	<0.33	5/16/2016
Bis(2-ethylhexyl)phthalate	mg/kg dry	<0.33	5/16/2016
4-Bromophenyl phenyl ether	mg/kg dry	<0.33	5/16/2016
Butylbenzyl phthalate	mg/kg dry	<0.33	5/16/2016
2-Chloronaphthalene	mg/kg dry	<0.33	5/16/2016
4-Chlorophenyl phenyl ether	mg/kg dry	<0.33	5/16/2016
Chrysene	mg/kg dry	<0.33	5/16/2016
Dibenzo(a,h)anthracene	mg/kg dry	<0.33	5/16/2016
Di-n-butyl phthalate	mg/kg dry	<0.33	5/16/2016
1,2-Dichlorobenzene	mg/kg dry	<0.33	5/16/2016
1,3-Dichlorobenzene	mg/kg dry	<0.33	5/16/2016
1,4-Dichlorobenzene	mg/kg dry	<0.33	5/16/2016
3,3'-Dichlorobenzidine	mg/kg dry	<0.33	5/16/2016

## QA/QC Report

Client: EST/TG2  
 WO #: 1605-10867  
 Date: 5/16/2016

## -Method Blanks Results-

Parameter	Units	Results	Date Analyzed
<b>Semi-Volatile Organics by Method 8270 (cont'd)</b>			
Diethyl phthalate	mg/kg dry	<0.33	5/16/2016
Dimethyl phthalate	mg/kg dry	<0.33	5/16/2016
2,4-Dinitrotoluene	mg/kg dry	<0.33	5/16/2016
2,6-Dinitrotoluene	mg/kg dry	<0.33	5/16/2016
Di-n-octyl phthalate	mg/kg dry	<0.33	5/16/2016
1,2-Diphenylhydrazine	mg/kg dry	<0.33	5/16/2016
Fluoranthene	mg/kg dry	<0.33	5/16/2016
Fluorene	mg/kg dry	<0.33	5/16/2016
Hexachlorobenzene	mg/kg dry	<0.33	5/16/2016
Hexachlorobutadiene	mg/kg dry	<0.33	5/16/2016
Hexachlorocyclopentadiene	mg/kg dry	<0.33	5/16/2016
Hexachloroethane	mg/kg dry	<0.33	5/16/2016
Indeno(1,2,3-cd)pyrene	mg/kg dry	<0.33	5/16/2016
Isophorone	mg/kg dry	<0.33	5/16/2016
2-Methylnaphthalene	mg/kg dry	<0.33	5/16/2016
Naphthalene	mg/kg dry	<0.33	5/16/2016
Nitrobenzene	mg/kg dry	<0.33	5/16/2016
N-nitrosodimethylamine	mg/kg dry	<0.33	5/16/2016
N-nitrosodiphenylamine	mg/kg dry	<0.33	5/16/2016
N-nitrosodi-n-propylamine	mg/kg dry	<0.33	5/16/2016
Phenanthrene	mg/kg dry	<0.33	5/16/2016
Pyrene	mg/kg dry	<0.33	5/16/2016
1,2,4-Trichlorobenzene	mg/kg dry	<0.33	5/16/2016
4-Chloro-3-methylphenol	mg/kg dry	<0.33	5/16/2016
2-Chlorophenol	mg/kg dry	<0.33	5/16/2016
2,4-Dichlorophenol	mg/kg dry	<0.33	5/16/2016
2,4-Dimethylphenol	mg/kg dry	<0.33	5/16/2016
2-Methyl-4,6-dinitrophenol	mg/kg dry	<0.33	5/16/2016
2,4-Dinitrophenol	mg/kg dry	<0.33	5/16/2016
2-Nitrophenol	mg/kg dry	<0.33	5/16/2016
4-Nitrophenol	mg/kg dry	<0.33	5/16/2016
Pentachlorophenol	mg/kg dry	<0.33	5/16/2016
Phenol	mg/kg dry	<0.33	5/16/2016
2,4,6-Trichlorophenol	mg/kg dry	<0.33	5/16/2016
2,4,5-Trichlorophenol	mg/kg dry	<0.33	5/16/2016
Dibenzofuran	mg/kg dry	<0.33	5/16/2016
2-Methyl Phenol	mg/kg dry	<0.33	5/16/2016
3 & 4-Methylphenols	mg/kg dry	<0.33	5/16/2016
Aniline	mg/kg dry	<0.33	5/16/2016
Acetophenone	mg/kg dry	<0.33	5/16/2016



## QA/QC Report

Client: EST/TG2  
 WO #: 1605-10867  
 Date: 5/16/2016

## -Method Blanks Results-

Parameter	Units	Results	Date Analyzed
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**Semi-Volatile Organics by Method 8270 (cont'd)**

Azobenzene	mg/kg dry	<0.33	5/16/2016
4-Chloroaniline	mg/kg dry	<0.33	5/16/2016
<b>Surrogates</b>	<b>RANGE</b>		5/16/2016
Phenol-d5	30-130%	55	5/16/2016
2-Fluorophenol	30-130%	55	5/16/2016
2,4,6-Tribromophenol	30-130%	80	5/16/2016
Nitrobenzene-d5	30-130%	56	5/16/2016
2-Fluorobiphenyl	30-130%	58	5/16/2016
P-Terphenyl-d14	30-130%	79	5/16/2016

**Total Metals**

Arsenic	mg/kg dry	<2.5	5/16/2016
Barium	mg/kg dry	<0.50	5/16/2016
Cadmium	mg/kg dry	<0.25	5/16/2016
Chromium	mg/kg dry	<1.5	5/16/2016
Lead	mg/kg dry	<2.0	5/16/2016
Mercury	mg/kg dry	<0.093	5/16/2016
Selenium	mg/kg dry	<5.0	5/16/2016
Silver	mg/kg dry	<0.99	5/16/2016

**Reactivity**

Sulfide Reactivity	mg/kg	<2.5	5/16/2016
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## -LCS/LCS Duplicate Data Results-

Parameter	CRM Acceptance Limits	Spike Conc	LCS Conc	LCS % Rec	LCS Dup Conc	LCS DUP % Rec	% RPD	Date Analyzed
<b>Total Petroleum Hydrocarbons by Method 8100 - Solids</b>								
TPH GC/FID		66.7	47.5	71	48.7	73	3	5/13/2016
<b>Surrogate</b>								5/13/2016
2-Fluorobiphenyl			78		79			5/13/2016
<b>Volatile Organics by Method 8260 - Solids</b>								
Acetone		25	25	100	24	96	4	5/12/2016
Tertiary Amyl Methyl Ether		2.5	2.5	100	2.5	100	0	5/12/2016
Benzene		2.5	2.6	104	2.5	100	4	5/12/2016
Bromobenzene		2.5	2.6	104	2.6	104	0	5/12/2016
Bromochloromethane		2.5	2.5	100	2.5	100	0	5/12/2016
Bromodichloromethane		2.5	2.5	100	2.5	100	0	5/12/2016
Bromoform		2.5	2.5	100	2.5	100	0	5/12/2016
Bromomethane		2.5	2.5	100	2.6	104	4	5/12/2016
Sec-butylbenzene		2.5	2.6	104	2.6	104	0	5/12/2016
n-Butylbenzene		2.5	2.8	112	2.8	112	0	5/12/2016
tert-Butylbenzene		2.5	2.6	104	2.6	104	0	5/12/2016
Carbon Disulfide		2.5	2.4	96	2.4	96	0	5/12/2016
Carbon Tetrachloride		2.5	2.4	96	2.4	96	0	5/12/2016
Chlorobenzene		2.5	2.6	104	2.5	100	4	5/12/2016
Dibromochloromethane		2.5	2.4	96	2.5	100	4	5/12/2016
Chloroethane		2.5	2.6	104	2.7	108	4	5/12/2016
Chloroform		2.5	2.4	96	2.4	96	0	5/12/2016
Chloromethane		2.5	1.9	76	1.9	76	0	5/12/2016
2-Chlorotoluene		2.5	2.8	112	2.8	112	0	5/12/2016
4-Chlorotoluene		2.5	2.6	104	2.6	104	0	5/12/2016
1,2-Dibromo-3-Chloropropane		2.5	2.8	112	2.9	116	4	5/12/2016
1,2-Dibromoethane(EDB)		2.5	2.5	100	2.5	100	0	5/12/2016
Dibromomethane		2.5	2.4	96	2.4	96	0	5/12/2016
1,3-Dichlorobenzene		2.5	2.6	104	2.6	104	0	5/12/2016
1,2-Dichlorobenzene		2.5	2.6	104	2.6	104	0	5/12/2016
1,4-Dichlorobenzene		2.5	2.6	104	2.6	104	0	5/12/2016
n-Propylbenzene		2.5	2.7	108	2.7	108	0	5/12/2016
Dichlorodifluoromethane		2.5	1.4	56	1.4	56	0	5/12/2016
1,1-Dichloroethane		2.5	2.6	104	2.5	100	4	5/12/2016
1,2-Dichloroethane		2.5	2.5	100	2.5	100	0	5/12/2016
1,1-Dichloroethene		2.5	2.3	92	2.3	92	0	5/12/2016
cis-1,2-Dichloroethene		2.5	2.4	96	2.4	96	0	5/12/2016
trans-1,2-Dichloroethylene		2.5	2.4	96	2.3	92	4	5/12/2016
1,2-Dichloropropane		2.5	2.5	100	2.6	104	4	5/12/2016
1,3-Dichloropropane		2.5	2.6	104	2.6	104	0	5/12/2016
2,2-Dichloropropane		2.5	2.8	112	2.7	108	4	5/12/2016
1,1-Dichloropropene		2.5	2.6	104	2.5	100	4	5/12/2016
cis-1,3-Dichloropropene		2.5	2.7	108	2.6	104	4	5/12/2016
trans-1,3-Dichloropropylene		2.5	2.5	100	2.6	104	4	5/12/2016
Diethyl ether		25	23	92	23	92	0	5/12/2016
Diisopropyl ether (DIPE)		2.5	2.5	100	2.6	104	4	5/12/2016
1,4-Dioxane		50	43	86	45	90	5	5/12/2016
Ethyl Tertiary Butyl Ether		2.5	2.6	104	2.6	104	0	5/12/2016
Ethylbenzene		2.5	2.7	108	2.6	104	4	5/12/2016
Hexachlorobutadiene		2.5	2.8	112	2.9	116	4	5/12/2016

## QA/QC Report

Client: EST/TG2

WO #: 1605-10867

Date: 5/16/2016

## -LCS/LCS Duplicate Data Results-

Parameter	CRM Acceptance Limits	Spike Conc	LCS Conc	LCS % Rec	LCS Dup Conc	LCS DUP % Rec	% RPD	Date Analyzed
<b>Volatile Organics by Method 8260 - Solids (cont'd)</b>								
2-Hexanone		25	26	104	27	108	4	5/12/2016
Isopropylbenzene		2.5	2.7	108	2.7	108	0	5/12/2016
p-Isopropyltoluene		2.5	2.6	104	2.5	100	4	5/12/2016
2-Butanone(MEK)		25	25	100	26	104	4	5/12/2016
4-Methyl-2-pentanone(MIBK)		25	26	104	27	108	4	5/12/2016
MTBE		2.5	2.5	100	2.5	100	0	5/12/2016
Methylene Chloride		2.5	2.4	96	2.4	96	0	5/12/2016
Naphthalene		2.5	2.6	104	2.6	104	0	5/12/2016
1,1,2-Trichloroethane		2.5	2.6	104	2.6	104	0	5/12/2016
Styrene		2.5	2.6	104	2.6	104	0	5/12/2016
1,1,1,2-Tetrachloroethane		2.5	2.6	104	2.6	104	0	5/12/2016
1,1,2,2-Tetrachloroethane		2.5	2.7	108	2.7	108	0	5/12/2016
Tetrachloroethene		2.5	2.6	104	2.5	100	4	5/12/2016
Tetrahydrofuran		25	26	104	26	104	0	5/12/2016
Toluene		2.5	2.6	104	2.5	100	4	5/12/2016
1,2,4-Trichlorobenzene		2.5	2.5	100	2.6	104	4	5/12/2016
1,2,3-Trichlorobenzene		2.5	2.5	100	2.5	100	0	5/12/2016
1,1,1-Trichloroethane		2.5	2.5	100	2.5	100	0	5/12/2016
Trichloroethene		2.5	2.5	100	2.5	100	0	5/12/2016
Trichlorofluoromethane		2.5	2.3	92	2.2	88	4	5/12/2016
1,2,3-Trichloropropane		2.5	2.6	104	2.6	104	0	5/12/2016
1,2,4-Trimethylbenzene		2.5	2.6	104	2.6	104	0	5/12/2016
1,3,5-Trimethylbenzene		2.5	2.7	108	2.6	104	4	5/12/2016
Vinyl Chloride		2.5	2.1	84	2.0	80	5	5/12/2016
o-Xylene		2.5	2.7	108	2.6	104	4	5/12/2016
m,p-Xylene		5.0	5.3	106	5.2	104	2	5/12/2016
<b>Surrogates</b>								
Toluene-d8			97		97			
Dibromofluoromethane			95		95			
1,2 Dichloroethane-d4			96		96			
4-Bromofluorobenzene			102		102			
Flashpoint		80	80	100				5/13/2016
<b>PCB - Solids</b>								
Aroclor-1016		0.33	0.295	89	0.303	92	3	5/16/2016
Aroclor-1260		0.33	0.247	75	0.260	79	5	5/16/2016
<b>Surrogate</b>								
Tetrachloro-m-xylene (TCMX)			89		90			
Decachlorobiphenyl			86		89			
<b>Semi-Volatile Organics by Method 8270 - Solids</b>								
Acenaphthene		3.3	2.9	88	2.7	82	7	5/16/2016
Acenaphthylene		3.3	3.2	97	3.1	94	3	5/16/2016

## QA/QC Report

Client: EST/TG2

WO #: 1605-10867

Date: 5/16/2016

## -LCS/LCS Duplicate Data Results-

Parameter	CRM Acceptance Limits	Spike Conc	LCS Conc	LCS % Rec	LCS Dup Conc	LCS DUP % Rec	% RPD	Date Analyzed
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## Semi-Volatile Organics by Method 8270 - Solids (cont'd)

Anthracene	3.3	3.2	97	3.1	94	3	5/16/2016
Benzidine	3.3	2.4	73	2.4	73	0	5/16/2016
Benzo(a)anthracene	3.3	3.1	94	3.0	91	3	5/16/2016
Benzo(b)fluoranthene	3.3	3.0	91	3.1	94	3	5/16/2016
Benzo(k)fluoranthene	3.3	3.1	94	3.0	91	3	5/16/2016
Benzo(g,h,i)perylene	3.3	3.1	94	3.0	91	3	5/16/2016
Benzo(a)pyrene	3.3	3.0	91	2.9	88	3	5/16/2016
Bis(2-chloroethyl)ether	3.3	2.7	82	2.5	76	8	5/16/2016
Bis(2-Chloroethoxy)methane	3.3	2.8	85	2.5	76	11	5/16/2016
Bis(2-Chloroisopropyl)Ether	3.3	2.6	79	2.3	70	12	5/16/2016
Bis(2-ethylhexyl)phthalate	3.3	3.1	94	3.0	91	3	5/16/2016
4-Bromophenyl phenyl ether	3.3	3.0	91	2.9	88	3	5/16/2016
Butylbenzyl phthalate	3.3	3.0	91	3.0	91	0	5/16/2016
2-Chloronaphthalene	3.3	2.9	88	2.8	85	4	5/16/2016
4-Chlorophenyl phenyl ether	3.3	2.9	88	2.8	85	4	5/16/2016
Chrysene	3.3	3.2	97	3.1	94	3	5/16/2016
Dibenzo(a,h)anthracene	3.3	3.1	94	3.0	91	3	5/16/2016
Di-n-butyl phthalate	3.3	3.1	94	3.0	91	3	5/16/2016
1,2-Dichlorobenzene	3.3	2.8	85	2.4	73	15	5/16/2016
1,3-Dichlorobenzene	3.3	2.6	79	2.3	70	12	5/16/2016
1,4-Dichlorobenzene	3.3	2.7	82	2.3	70	16	5/16/2016
3,3'-Dichlorobenzidine	3.3	2.8	85	2.7	82	4	5/16/2016
Diethyl phthalate	3.3	3.0	91	3.0	91	0	5/16/2016
Dimethyl phthalate	3.3	3.1	94	3.0	91	3	5/16/2016
2,4-Dinitrotoluene	3.3	3.7	112	3.6	109	3	5/16/2016
2,6-Dinitrotoluene	3.3	3.7	112	3.6	109	3	5/16/2016
Di-n-octyl phthalate	3.3	2.7	82	2.6	79	4	5/16/2016
1,2-Diphenylhydrazine	3.3	2.8	85	2.8	85	0	5/16/2016
Fluoranthene	3.3	3.0	91	3.0	91	0	5/16/2016
Fluorene	3.3	3.0	91	2.9	88	3	5/16/2016
Hexachlorobenzene	3.3	3.1	94	3.0	91	3	5/16/2016
Hexachlorobutadiene	3.3	2.9	88	2.6	79	11	5/16/2016
Hexachlorocyclopentadiene	3.3	3.2	97	3.0	91	6	5/16/2016
Hexachloroethane	3.3	2.6	79	2.3	70	12	5/16/2016
Indeno(1,2,3-cd)pyrene	3.3	3.2	97	3.1	94	3	5/16/2016
Isophorone	3.3	2.8	85	2.7	82	4	5/16/2016
2-Methylnaphthalene	3.3	3.0	91	2.8	85	7	5/16/2016
Naphthalene	3.3	2.8	85	2.6	79	7	5/16/2016
Nitrobenzene	3.3	3.0	91	2.7	82	11	5/16/2016
N-nitrosodimethylamine	3.3	2.5	76	2.2	67	13	5/16/2016
N-nitrosodiphenylamine	3.3	3.0	91	3.0	91	0	5/16/2016
N-nitrosodi-n-propylamine	3.3	2.7	82	2.5	76	8	5/16/2016

## QA/QC Report

Client: EST/TG2  
 WO #: 1605-10867  
 Date: 5/16/2016

## -LCS/LCS Duplicate Data Results-

Parameter	CRM Acceptance Limits	Spike Conc	LCS Conc	LCS % Rec	LCS Dup Conc	LCS DUP % Rec	% RPD	Date Analyzed
<b>Semi-Volatile Organics by Method 8270 - Solids (cont'd)</b>								
Phenanthrene		3.3	3.1	94	3.0	91	3	5/16/2016
Pyrene		3.3	3.1	94	3.0	91	3	5/16/2016
1,2,4-Trichlorobenzene		3.3	2.8	85	2.6	79	7	5/16/2016
4-Chloro-3-methylphenol		3.3	3.0	91	2.8	85	7	5/16/2016
2-Chlorophenol		3.3	2.9	88	2.7	82	7	5/16/2016
2,4-Dichlorophenol		3.3	3.1	94	2.9	88	7	5/16/2016
2,4-Dimethylphenol		3.3	2.9	88	2.8	85	4	5/16/2016
2-Methyl-4,6-dinitrophenol		3.3	1.3	39	0.87	26	40	5/16/2016
2,4-Dinitrophenol		3.3	0.49	15	0.33	10	39	5/16/2016
2-Nitrophenol		3.3	3.5	106	3.2	97	9	5/16/2016
4-Nitrophenol		3.3	3.6	109	3.4	103	6	5/16/2016
Pentachlorophenol		3.3	2.8	85	2.8	85	0	5/16/2016
Phenol		3.3	3.0	91	2.7	82	11	5/16/2016
2,4,6-Trichlorophenol		3.3	3.1	94	3.0	91	3	5/16/2016
2,4,5-Trichlorophenol		3.3	3.2	97	3.0	91	6	5/16/2016
Dibenzofuran		3.3	3.0	91	2.9	88	3	5/16/2016
2-Methyl Phenol		3.3	2.9	88	2.7	82	7	5/16/2016
3 & 4-Methylphenols		3.3	2.7	82	2.5	76	8	5/16/2016
Aniline		3.3	2.6	79	2.4	73	8	5/16/2016
Acetophenone		3.3	2.8	85	2.5	76	11	5/16/2016
Azobenzene		3.3	2.8	85	2.8	85	0	5/16/2016
4-Chloroaniline		3.3	2.8	85	2.7	82	4	5/16/2016
<b>Surrogates</b>								
Phenol-d5			87		79			
2-Fluorophenol			89		78			
2,4,6-Tribromophenol			110		105			
Nitrobenzene-d5			89		78			
2-Fluorobiphenyl			85		80			
P-Terphenyl-d14			83		78			
<b>Total Metals - Solids</b>								
Arsenic	71-129%	161	160	99	170	106	6	5/16/2016
Barium	73-126%	351	360	103	360	103	0	5/16/2016
Cadmium	73-127%	190	200	105	200	105	0	5/16/2016
Chromium	70-130%	87.9	96	109	98	111	2	5/16/2016
Lead	70-130%	138	150	109	150	109	0	5/16/2016
Selenium	66-134%	305	290	95	300	98	3	5/16/2016
Silver	42-158%	58.0	56	97	58	100	4	5/16/2016
Mercury	52-149%	15.9	18	113	18	113	0	5/16/2016
<b>Reactivity</b>								
Sulfide Reactivity		9.96	8.06	81	8.26	84	3	5/16/2016



**R.I. ANALYTICAL**  
Specialists in Environmental Services

# CHAIN OF CUSTODY RECORD

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Warwick, RI 02888-3007  
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131 Coolidge St., Suite 105  
Hudson, MA 01749-1331  
800-937-2580 • Fax: 978-568-0078

Date Collected	Time Collected	Field Sample Identification	Grab or Composite	# of Containers & Type	Preservation Code P	Matrix Code M	RCRA-8	TPH	SUCCS	PCBS	Chl Resid	Flashpoint	pH	Conductivity	VOCs	SVOCs
5/12/16	1115	Dispenser Disposal - 1	C	5	M	U	X	X	X	X	X	X	X	X	X	
5/12/16	1310	Dispenser Disposal - 2	C	5	M	U	X	X	X	X	X	X	X	X	X	

Client Information		Project Information	
Company Name: EST/Tgd	Address: 51 Fremont St.	Project Name: Colba Pembroke	P.O. Number:
City / State / Zip: Needham, MA	Telephone: 508-298-8686	Report To: E. Simpson	Project Number:
Contact Person: Eric Simpson	Fax:	Sampled By: ES	Phone:
		Quote No:	Email report to these addresses: esimpson@tgd-solutions.com

Relinquished By Signatures	Date	Time	Received By Signatures	Date	Time
<i>[Signature]</i>	5/12/16	1653	<i>[Signature]</i>	5-12-16	16:53

Turn Around Time	
Normal	EMAIL Report
5 Business days. Possible surcharge	
<input checked="" type="checkbox"/> Rush - Date Due:	48 hrs.

**Project Comments**

Circle if applicable: GW-1, GW-2, GW-3, S-1, S-2, S-3      MCP Data Enhancement QC Package? Yes No

Temp. Upon Receipt 2.7 °C

Lab Use Only	
<input type="checkbox"/>	Sample Pick-Up Only
<input type="checkbox"/>	RIAL sampled; attach field hours
<input checked="" type="checkbox"/>	Shipped on ice
Workorder No: <u>1605-10867</u>	

Containers: P=Poly, G=Glass, AG=Amber Glass, V=Vial, St=Sterile      Preservatives: A=Ascorbic Acid, NH4=NH4Cl, H=HCl, M=MeOH, N=HNO3, NP=None, S=H2SO4, SB=NaHSO4, SH=NaOH, T=Na2S2O3, Z=ZnOAc  
Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, SL=Sludge, A=Air, B=Bulk/Solid, WP=Wipe, O=

November 28, 2016

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 3rd Quarter 2016  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and March 18, 2014 and most recently renewed on September 9, 2014. On September 20, 2015 the BUDA expired.

This report covers activities conducted during the period of July 1, 2016 to September 30, 2016.

### **Construction Activities**

Construction activities during this reporting period consisted of:

- The distribution of previously stock piled final capping soil (compliant with all RIDEM criteria);
- The delivery and management of newly accepted final capping soil; and
- Seeding/erosion control activities.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

An attached table summarizes the soils delivered to the Property during this reporting period. The required laboratory analysis data for the soil reported on the table is provided in Appendix B.

**Complaints**

No complaints were received directly by APE during this reporting period.

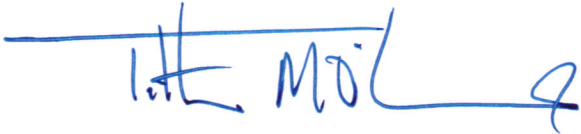
**Schedule**

The APE project team estimates that approximately 18,000 cubic yards will be required to complete the capping project. It is important to note that due to settlement and compaction, the final volume of capping soil required to cap the landfill is driven by existing conditions and the elevations in the approved final site grading plan and will not be determined until the project is very close to meeting the elevations in the grading plan.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC

A handwritten signature in blue ink, appearing to read "Tim O'Connor", with a horizontal line drawn above it.

Timothy M. O'Connor, PE, LEED-AP  
Principal



**Former Portsmouth Landfill Soils Accepted  
3rd Quarter 2016**

Delivery Dates	Source	Consultant	Quantity (tons)
July 14, 2016	Mass DOT Route 1 Mother Brook Bridge, Dedham, MA	EST Associates, Inc.	82.71
September 7, 8, 9, 2016	2345 Grand Army Highway, Swansea, MA	EST Associates, Inc.	2,321.59
<b>Notes</b>	Total		2,404.30

# Appendix A – Photographs



**Photo 1 –Central Portion of Landfill Looking East**



**Photo 2 – Central Portion of Landfill Looking South**



**Photo 3 – Along Eastern Limit of Disturbance (Final Cap)**



**Photo 4 – Along Northern Limit of Disturbance (Final Cap)**



**Photo 5 – Looking South from Northern-most Portion of Landfill**



**Photo 6 – Western Limit of Disturbance (Final Cap)**

# **Appendix B – Analytical Data**

(on disk)



## ANALYTICAL REPORT

Lab Number:	L1525901
Client:	EST Associates, Inc. 51 Fremont Street Needham, MA 02494
ATTN:	Mike Bundy
Phone:	(781) 455-0003
Project Name:	MASSDOT PROVIDENCE HWY OVER..
Project Number:	Not Specified
Report Date:	10/21/15

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).

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



**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1525901-01	SCD-101215	SOIL	DEDHAM, MA	10/12/15 14:00	10/13/15



Project Name: MASSDOT PROVIDENCE HWY OVER..

Lab Number: L1525901

Project Number: Not Specified

Report Date: 10/21/15

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

### 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:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1525901-01, did not meet the method required minimum response factor on the lowest calibration standard for 4-methyl-2-pentanone (0.07493) and 1,4-dioxane (0.00162), as well as the average response factor for trichloroethene, 4-methyl-2-pentanone, and 1,4-dioxane. The initial calibration verification is outside acceptance criteria for tetrahydrofuran (65%), but within overall method criteria.

The continuing calibration standard, associated with L1525901-01, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

##### Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

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:

 Lisa Westerlind

Title: Technical Director/Representative

Date: 10/21/15

# ORGANICS

# VOLATILES

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**SAMPLE RESULTS**

Lab ID: L1525901-01  
 Client ID: SCD-101215  
 Sample Location: DEDHAM, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 10/19/15 11:54  
 Analyst: MV  
 Percent Solids: 82%

Date Collected: 10/12/15 14:00  
 Date Received: 10/13/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	8.7	--	1
1,1-Dichloroethane	ND		ug/kg	1.3	--	1
Chloroform	ND		ug/kg	1.3	--	1
Carbon tetrachloride	ND		ug/kg	0.87	--	1
1,2-Dichloropropane	ND		ug/kg	3.0	--	1
Dibromochloromethane	ND		ug/kg	0.87	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.3	--	1
Tetrachloroethene	ND		ug/kg	0.87	--	1
Chlorobenzene	ND		ug/kg	0.87	--	1
Trichlorofluoromethane	ND		ug/kg	3.5	--	1
1,2-Dichloroethane	ND		ug/kg	0.87	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.87	--	1
Bromodichloromethane	ND		ug/kg	0.87	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.87	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.87	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.87	--	1
1,1-Dichloropropene	ND		ug/kg	3.5	--	1
Bromoform	ND		ug/kg	3.5	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.87	--	1
Benzene	ND		ug/kg	0.87	--	1
Toluene	ND		ug/kg	1.3	--	1
Ethylbenzene	ND		ug/kg	0.87	--	1
Chloromethane	ND		ug/kg	3.5	--	1
Bromomethane	ND		ug/kg	1.7	--	1
Vinyl chloride	ND		ug/kg	1.7	--	1
Chloroethane	ND		ug/kg	1.7	--	1
1,1-Dichloroethene	ND		ug/kg	0.87	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.3	--	1
Trichloroethene	ND		ug/kg	0.87	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.5	--	1

**Project Name:** MASSDOT PROVIDENCE HWY OVER..**Lab Number:** L1525901**Project Number:** Not Specified**Report Date:** 10/21/15**SAMPLE RESULTS**

Lab ID: L1525901-01  
 Client ID: SCD-101215  
 Sample Location: DEDHAM, MA

Date Collected: 10/12/15 14:00  
 Date Received: 10/13/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	3.5	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.5	--	1
Methyl tert butyl ether	ND		ug/kg	1.7	--	1
p/m-Xylene	ND		ug/kg	1.7	--	1
o-Xylene	ND		ug/kg	1.7	--	1
Xylenes, Total	ND		ug/kg	1.7	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.87	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.87	--	1
Dibromomethane	ND		ug/kg	3.5	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.5	--	1
Styrene	ND		ug/kg	1.7	--	1
Dichlorodifluoromethane	ND		ug/kg	8.7	--	1
Acetone	ND		ug/kg	31	--	1
Carbon disulfide	ND		ug/kg	3.5	--	1
Methyl ethyl ketone	ND		ug/kg	8.7	--	1
Methyl isobutyl ketone	ND		ug/kg	8.7	--	1
2-Hexanone	ND		ug/kg	8.7	--	1
Bromochloromethane	ND		ug/kg	3.5	--	1
Tetrahydrofuran	ND		ug/kg	3.5	--	1
2,2-Dichloropropane	ND		ug/kg	4.4	--	1
1,2-Dibromoethane	ND		ug/kg	3.5	--	1
1,3-Dichloropropane	ND		ug/kg	3.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.87	--	1
Bromobenzene	ND		ug/kg	4.4	--	1
n-Butylbenzene	ND		ug/kg	0.87	--	1
sec-Butylbenzene	ND		ug/kg	0.87	--	1
tert-Butylbenzene	ND		ug/kg	3.5	--	1
o-Chlorotoluene	ND		ug/kg	3.5	--	1
p-Chlorotoluene	ND		ug/kg	3.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.5	--	1
Hexachlorobutadiene	ND		ug/kg	3.5	--	1
Isopropylbenzene	ND		ug/kg	0.87	--	1
p-Isopropyltoluene	ND		ug/kg	0.87	--	1
Naphthalene	ND		ug/kg	3.5	--	1
n-Propylbenzene	ND		ug/kg	0.87	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.5	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.5	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.5	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.5	--	1

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**SAMPLE RESULTS**

Lab ID: L1525901-01  
 Client ID: SCD-101215  
 Sample Location: DEDHAM, MA

Date Collected: 10/12/15 14:00  
 Date Received: 10/13/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	4.4	--	1
Diisopropyl Ether	ND		ug/kg	3.5	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.5	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.5	--	1
1,4-Dioxane	ND		ug/kg	35	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	104		70-130



**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
 Analytical Date: 10/19/15 09:13  
 Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG832431-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 10/19/15 09:13  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG832431-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**Method Blank Analysis  
 Batch Quality Control**

Analytical Method: 97,8260C  
 Analytical Date: 10/19/15 09:13  
 Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG832431-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	97		70-130

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG832431-1 WG832431-2								
Methylene chloride	95		94		70-130	1		20
1,1-Dichloroethane	101		98		70-130	3		20
Chloroform	101		97		70-130	4		20
Carbon tetrachloride	109		109		70-130	0		20
1,2-Dichloropropane	99		96		70-130	3		20
Dibromochloromethane	100		98		70-130	2		20
1,1,2-Trichloroethane	94		92		70-130	2		20
Tetrachloroethene	108		108		70-130	0		20
Chlorobenzene	106		104		70-130	2		20
Trichlorofluoromethane	99		100		70-130	1		20
1,2-Dichloroethane	90		88		70-130	2		20
1,1,1-Trichloroethane	108		106		70-130	2		20
Bromodichloromethane	100		95		70-130	5		20
trans-1,3-Dichloropropene	98		98		70-130	0		20
cis-1,3-Dichloropropene	102		99		70-130	3		20
1,1-Dichloropropene	103		100		70-130	3		20
Bromoform	93		93		70-130	0		20
1,1,2,2-Tetrachloroethane	86		85		70-130	1		20
Benzene	104		101		70-130	3		20
Toluene	107		105		70-130	2		20
Ethylbenzene	109		106		70-130	3		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG832431-1 WG832431-2								
Chloromethane	99		97		70-130	2		20
Bromomethane	87		86		70-130	1		20
Vinyl chloride	88		87		70-130	1		20
Chloroethane	88		86		70-130	2		20
1,1-Dichloroethene	101		101		70-130	0		20
trans-1,2-Dichloroethene	104		102		70-130	2		20
Trichloroethene	106		104		70-130	2		20
1,2-Dichlorobenzene	101		100		70-130	1		20
1,3-Dichlorobenzene	108		107		70-130	1		20
1,4-Dichlorobenzene	106		104		70-130	2		20
Methyl tert butyl ether	93		93		70-130	0		20
p/m-Xylene	109		108		70-130	1		20
o-Xylene	109		107		70-130	2		20
cis-1,2-Dichloroethene	101		100		70-130	1		20
Dibromomethane	90		89		70-130	1		20
1,2,3-Trichloropropane	87		85		70-130	2		20
Styrene	108		106		70-130	2		20
Dichlorodifluoromethane	78		78		70-130	0		20
Acetone	86		74		70-130	15		20
Carbon disulfide	101		101		70-130	0		20
Methyl ethyl ketone	68	Q	67	Q	70-130	1		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG832431-1 WG832431-2								
Methyl isobutyl ketone	78		75		70-130	4		20
2-Hexanone	66	Q	64	Q	70-130	3		20
Bromochloromethane	94		96		70-130	2		20
Tetrahydrofuran	69	Q	66	Q	70-130	4		20
2,2-Dichloropropane	112		108		70-130	4		20
1,2-Dibromoethane	91		91		70-130	0		20
1,3-Dichloropropane	93		93		70-130	0		20
1,1,1,2-Tetrachloroethane	108		106		70-130	2		20
Bromobenzene	104		103		70-130	1		20
n-Butylbenzene	115		113		70-130	2		20
sec-Butylbenzene	113		109		70-130	4		20
tert-Butylbenzene	113		111		70-130	2		20
o-Chlorotoluene	107		86		70-130	22	Q	20
p-Chlorotoluene	113		112		70-130	1		20
1,2-Dibromo-3-chloropropane	79		81		70-130	3		20
Hexachlorobutadiene	123		118		70-130	4		20
Isopropylbenzene	111		109		70-130	2		20
p-Isopropyltoluene	116		113		70-130	3		20
Naphthalene	88		89		70-130	1		20
n-Propylbenzene	112		110		70-130	2		20
1,2,3-Trichlorobenzene	104		104		70-130	0		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG832431-1 WG832431-2								
1,2,4-Trichlorobenzene	113		109		70-130	4		20
1,3,5-Trimethylbenzene	114		112		70-130	2		20
1,2,4-Trimethylbenzene	114		113		70-130	1		20
Diethyl ether	80		80		70-130	0		20
Diisopropyl Ether	90		90		70-130	0		20
Ethyl-Tert-Butyl-Ether	96		95		70-130	1		20
Tertiary-Amyl Methyl Ether	98		95		70-130	3		20
1,4-Dioxane	97		96		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90		91		70-130
Toluene-d8	103		104		70-130
4-Bromofluorobenzene	105		106		70-130
Dibromofluoromethane	98		98		70-130

# SEMIVOLATILES



**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**SAMPLE RESULTS**

Lab ID: L1525901-01  
 Client ID: SCD-101215  
 Sample Location: DEDHAM, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 10/21/15 13:03  
 Analyst: RC  
 Percent Solids: 82%

Date Collected: 10/12/15 14:00  
 Date Received: 10/13/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/20/15 17:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	470		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	220		ug/kg	120	--	1
Benzo(a)pyrene	350		ug/kg	160	--	1
Benzo(b)fluoranthene	360		ug/kg	120	--	1

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**SAMPLE RESULTS**

Lab ID: L1525901-01  
 Client ID: SCD-101215  
 Sample Location: DEDHAM, MA

Date Collected: 10/12/15 14:00  
 Date Received: 10/13/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	150		ug/kg	120	--	1
Chrysene	220		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	170		ug/kg	120	--	1
Benzo(ghi)perylene	240		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	430		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	250		ug/kg	160	--	1
Pyrene	360		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	430	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	970	--	1
Pentachlorophenol	ND		ug/kg	400	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	104		30-130
Phenol-d6	104		30-130
Nitrobenzene-d5	101		30-130
2-Fluorobiphenyl	109		30-130
2,4,6-Tribromophenol	124		30-130
4-Terphenyl-d14	105		30-130

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 10/21/15 09:16  
Analyst: RC

Extraction Method: EPA 3546  
Extraction Date: 10/20/15 17:22

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG832542-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8270D  
 Analytical Date: 10/21/15 09:16  
 Analyst: RC

Extraction Method: EPA 3546  
 Extraction Date: 10/20/15 17:22

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG832542-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	320	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

**Project Name:** MASSDOT PROVIDENCE HWY OVER..**Lab Number:** L1525901**Project Number:** Not Specified**Report Date:** 10/21/15**Method Blank Analysis  
Batch Quality Control**Analytical Method: 97,8270D  
Analytical Date: 10/21/15 09:16  
Analyst: RCExtraction Method: EPA 3546  
Extraction Date: 10/20/15 17:22

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG832542-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		30-130
Phenol-d6	73		30-130
Nitrobenzene-d5	71		30-130
2-Fluorobiphenyl	81		30-130
2,4,6-Tribromophenol	84		30-130
4-Terphenyl-d14	84		30-130

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG832542-2 WG832542-3								
Acenaphthene	72		63		40-140	13		30
1,2,4-Trichlorobenzene	73		65		40-140	12		30
Hexachlorobenzene	80		71		40-140	12		30
Bis(2-chloroethyl)ether	66		58		40-140	13		30
2-Chloronaphthalene	75		67		40-140	11		30
1,2-Dichlorobenzene	68		62		40-140	9		30
1,3-Dichlorobenzene	66		60		40-140	10		30
1,4-Dichlorobenzene	66		60		40-140	10		30
3,3'-Dichlorobenzidine	58		53		40-140	9		30
2,4-Dinitrotoluene	76		70		40-140	8		30
2,6-Dinitrotoluene	79		72		40-140	9		30
Azobenzene	70		62		40-140	12		30
Fluoranthene	74		67		40-140	10		30
4-Bromophenyl phenyl ether	84		73		40-140	14		30
Bis(2-chloroisopropyl)ether	65		58		40-140	11		30
Bis(2-chloroethoxy)methane	71		63		40-140	12		30
Hexachlorobutadiene	77		69		40-140	11		30
Hexachloroethane	66		59		40-140	11		30
Isophorone	72		65		40-140	10		30
Naphthalene	69		63		40-140	9		30
Nitrobenzene	67		61		40-140	9		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG832542-2 WG832542-3								
Bis(2-Ethylhexyl)phthalate	81		71		40-140	13		30
Butyl benzyl phthalate	78		70		40-140	11		30
Di-n-butylphthalate	77		68		40-140	12		30
Di-n-octylphthalate	82		71		40-140	14		30
Diethyl phthalate	77		69		40-140	11		30
Dimethyl phthalate	76		68		40-140	11		30
Benzo(a)anthracene	72		64		40-140	12		30
Benzo(a)pyrene	75		66		40-140	13		30
Benzo(b)fluoranthene	74		64		40-140	14		30
Benzo(k)fluoranthene	72		66		40-140	9		30
Chrysene	71		64		40-140	10		30
Acenaphthylene	75		67		40-140	11		30
Anthracene	72		65		40-140	10		30
Benzo(ghi)perylene	74		64		40-140	14		30
Fluorene	74		67		40-140	10		30
Phenanthrene	71		64		40-140	10		30
Dibenzo(a,h)anthracene	77		66		40-140	15		30
Indeno(1,2,3-cd)Pyrene	76		66		40-140	14		30
Pyrene	73		67		40-140	9		30
Aniline	49		46		40-140	6		30
4-Chloroaniline	75		67		40-140	11		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG832542-2 WG832542-3								
Dibenzofuran	74		66		40-140	11		30
2-Methylnaphthalene	74		67		40-140	10		30
Acetophenone	81		73		40-140	10		30
2,4,6-Trichlorophenol	80		72		30-130	11		30
2-Chlorophenol	70		63		30-130	11		30
2,4-Dichlorophenol	78		69		30-130	12		30
2,4-Dimethylphenol	76		69		30-130	10		30
2-Nitrophenol	74		65		30-130	13		30
4-Nitrophenol	73		64		30-130	13		30
2,4-Dinitrophenol	51		45		30-130	13		30
Pentachlorophenol	71		61		30-130	15		30
Phenol	64		60		30-130	6		30
2-Methylphenol	71		63		30-130	12		30
3-Methylphenol/4-Methylphenol	73		65		30-130	12		30
2,4,5-Trichlorophenol	79		72		30-130	9		30



## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG832542-2 WG832542-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
2-Fluorophenol	68		61		30-130
Phenol-d6	69		61		30-130
Nitrobenzene-d5	67		62		30-130
2-Fluorobiphenyl	75		67		30-130
2,4,6-Tribromophenol	81		71		30-130
4-Terphenyl-d14	76		66		30-130

# PETROLEUM HYDROCARBONS

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**SAMPLE RESULTS**

Lab ID: L1525901-01  
 Client ID: SCD-101215  
 Sample Location: DEDHAM, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 10/21/15 12:04  
 Analyst: MW  
 Percent Solids: 82%

Date Collected: 10/12/15 14:00  
 Date Received: 10/13/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/17/15 16:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	99200		ug/kg	39900	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	92		40-140

**Project Name:** MASSDOT PROVIDENCE HWY OVER..**Lab Number:** L1525901**Project Number:** Not Specified**Report Date:** 10/21/15**Method Blank Analysis  
Batch Quality Control**Analytical Method: 1,8015C(M)  
Analytical Date: 10/21/15 05:36  
Analyst: MWExtraction Method: EPA 3546  
Extraction Date: 10/17/15 16:43

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01 Batch: WG831835-1					
TPH	ND		ug/kg	32000	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	89		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01 Batch: WG831835-2								
TPH	86		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	96				40-140

**Lab Duplicate Analysis**  
**Batch Quality Control**

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01 QC Batch ID: WG831835-3 QC Sample: L1525901-01 Client ID: SCD-101215						
TPH	99200	128000	ug/kg	25		40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	92		91		40-140

# PCBS

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**SAMPLE RESULTS**

Lab ID: L1525901-01  
 Client ID: SCD-101215  
 Sample Location: DEDHAM, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 10/19/15 13:10  
 Analyst: JW  
 Percent Solids: 82%

Date Collected: 10/12/15 14:00  
 Date Received: 10/13/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/15/15 15:27  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 10/17/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 10/17/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	39.7	--	1	A
Aroclor 1221	ND		ug/kg	39.7	--	1	A
Aroclor 1232	ND		ug/kg	39.7	--	1	A
Aroclor 1242	ND		ug/kg	39.7	--	1	A
Aroclor 1248	ND		ug/kg	39.7	--	1	A
Aroclor 1254	ND		ug/kg	39.7	--	1	A
Aroclor 1260	ND		ug/kg	39.7	--	1	A
Aroclor 1262	ND		ug/kg	39.7	--	1	A
Aroclor 1268	ND		ug/kg	39.7	--	1	A
PCBs, Total	ND		ug/kg	39.7	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	37		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	47		30-150	B



**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**Method Blank Analysis  
 Batch Quality Control**

Analytical Method: 97,8082A  
 Analytical Date: 10/17/15 23:17  
 Analyst: JW

Extraction Method: EPA 3546  
 Extraction Date: 10/15/15 15:27  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 10/17/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 10/17/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01 Batch: WG831239-1						
Aroclor 1016	ND		ug/kg	33.0	--	A
Aroclor 1221	ND		ug/kg	33.0	--	A
Aroclor 1232	ND		ug/kg	33.0	--	A
Aroclor 1242	ND		ug/kg	33.0	--	A
Aroclor 1248	ND		ug/kg	33.0	--	A
Aroclor 1254	ND		ug/kg	33.0	--	A
Aroclor 1260	ND		ug/kg	33.0	--	A
Aroclor 1262	ND		ug/kg	33.0	--	A
Aroclor 1268	ND		ug/kg	33.0	--	A
PCBs, Total	ND		ug/kg	33.0	--	A

Surrogate	%Recovery	Qualifier	Acceptance	Column
			Criteria	
2,4,5,6-Tetrachloro-m-xylene	43		30-150	A
Decachlorobiphenyl	42		30-150	A
2,4,5,6-Tetrachloro-m-xylene	42		30-150	B
Decachlorobiphenyl	50		30-150	B



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01 Batch: WG831239-2 WG831239-3									
Aroclor 1016	74		75		40-140	1		30	A
Aroclor 1260	72		76		40-140	5		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	56		55		30-150	A
Decachlorobiphenyl	40		41		30-150	A
2,4,5,6-Tetrachloro-m-xylene	51		51		30-150	B
Decachlorobiphenyl	56		58		30-150	B

## METALS

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**SAMPLE RESULTS**

Lab ID: L1525901-01  
 Client ID: SCD-101215  
 Sample Location: DEDHAM, MA  
 Matrix: Soil  
 Percent Solids: 82%

Date Collected: 10/12/15 14:00  
 Date Received: 10/13/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	2.4		mg/kg	0.48	--	1	10/14/15 03:48	10/14/15 10:01	EPA 3050B	97,6010C	JH
Barium, Total	21		mg/kg	0.48	--	1	10/14/15 03:48	10/14/15 10:01	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.48	--	1	10/14/15 03:48	10/14/15 10:01	EPA 3050B	97,6010C	JH
Chromium, Total	8.2		mg/kg	0.48	--	1	10/14/15 03:48	10/14/15 10:01	EPA 3050B	97,6010C	JH
Lead, Total	9.5		mg/kg	2.4	--	1	10/14/15 03:48	10/14/15 10:01	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.077	--	1	10/14/15 09:33	10/14/15 14:35	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.4	--	1	10/14/15 03:48	10/14/15 10:01	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.48	--	1	10/14/15 03:48	10/14/15 10:01	EPA 3050B	97,6010C	JH



**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

### Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01 Batch: WG830602-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	10/14/15 03:48	10/14/15 09:06	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	10/14/15 03:48	10/14/15 09:06	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	10/14/15 03:48	10/14/15 09:06	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	10/14/15 03:48	10/14/15 09:06	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	10/14/15 03:48	10/14/15 09:06	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	10/14/15 03:48	10/14/15 09:06	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	10/14/15 03:48	10/14/15 09:06	97,6010C	JH

#### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01 Batch: WG830616-1									
Mercury, Total	ND	mg/kg	0.083	--	1	10/14/15 09:33	10/14/15 14:29	97,7471B	DB

#### Prep Information

Digestion Method: EPA 7471B

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** MASSDOT PROVIDENCE HWY OVER..

**Lab Number:** L1525901

**Project Number:** Not Specified

**Report Date:** 10/21/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG830602-2 WG830602-3 SRM Lot Number: D088-540								
Arsenic, Total	96		96		79-121	0		30
Barium, Total	88		88		83-117	0		30
Cadmium, Total	89		91		83-117	2		30
Chromium, Total	91		92		80-120	1		30
Lead, Total	82		85		81-117	4		30
Selenium, Total	97		97		78-122	0		30
Silver, Total	96		98		75-124	2		30
MCP Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG830616-2 WG830616-3 SRM Lot Number: D088-540								
Mercury, Total	95		104		72-128	9		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** MASSDOT PROVIDENCE HWY OVER.  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

### SAMPLE RESULTS

**Lab ID:** L1525901-01  
**Client ID:** SCD-101215  
**Sample Location:** DEDHAM, MA  
**Matrix:** Soil

**Date Collected:** 10/12/15 14:00  
**Date Received:** 10/13/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Wet Soil  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	10/19/15 17:53	1,1030	SB





**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**SAMPLE RESULTS**

**Lab ID:** L1525901-01  
**Client ID:** SCD-101215  
**Sample Location:** DEDHAM, MA  
**Matrix:** Soil

**Date Collected:** 10/12/15 14:00  
**Date Received:** 10/13/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	56		umhos/cm	10	--	1	-	10/13/15 20:35	1,9050A	LH
Solids, Total	81.9		%	0.100	NA	1	-	10/13/15 18:58	30,2540G	RT
pH (H)	7.6		SU	-	NA	1	-	10/13/15 17:50	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	10/14/15 18:15	10/14/15 21:21	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	10/14/15 18:15	10/14/15 21:10	1,7.3	TL



**Project Name:** MASSDOT PROVIDENCE HWY OVER.  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG830892-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	10/14/15 18:15	10/14/15 21:20	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG830894-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	10/14/15 18:15	10/14/15 21:09	1,7.3	TL

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** MASSDOT PROVIDENCE HWY OVER..

**Lab Number:** L1525901

**Project Number:** Not Specified

**Report Date:** 10/21/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG830516-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG830542-1								
Specific Conductance	102		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG830892-2								
Cyanide, Reactive	65		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG830894-2								
Sulfide, Reactive	86		-		60-125	-		40

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG830516-2 QC Sample: L1525901-01 Client ID: SCD-101215						
pH (H)	7.6	7.7	SU	1		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG830542-2 QC Sample: L1525901-01 Client ID: SCD-101215						
Specific Conductance	56	57	umhos/cm	2		20

Project Name: MASSDOT PROVIDENCE HWY OVER..

Lab Number: L1525901

Project Number: Not Specified

Report Date: 10/21/15

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 10/13/2015 14:28

## Cooler Information Custody Seal

## Cooler

B Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1525901-01A	Vial MeOH preserved	B	N/A	2.6	Y	Absent	MCP-8260HLW-10(14)
L1525901-01B	Vial water preserved	B	N/A	2.6	Y	Absent	MCP-8260HLW-10(14)
L1525901-01C	Vial water preserved	B	N/A	2.6	Y	Absent	MCP-8260HLW-10(14)
L1525901-01D	Plastic 2oz unpreserved for TS	B	N/A	2.6	Y	Absent	TS(7)
L1525901-01E	Glass 250ml/8oz unpreserved	B	N/A	2.6	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1525901-01F	Glass 250ml/8oz unpreserved	B	N/A	2.6	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



**Project Name:** MASSDOT PROVIDENCE HWY OVER..**Project Number:** Not Specified**Lab Number:** L1525901**Report Date:** 10/21/15**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1525901-01G	Glass 250ml/8oz unpreserved	B	N/A	2.6	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

## 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.
LCS D	- 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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
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).

**Report Format:** Data Usability Report



**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

#### Data Qualifiers

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- 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.



**Project Name:** MASSDOT PROVIDENCE HWY OVER..  
**Project Number:** Not Specified

**Lab Number:** L1525901  
**Report Date:** 10/21/15

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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

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

### Westborough Facility

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide) (soil), Methyl methacrylate (soil), Azobenzene.

**EPA 8270D:** Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### 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.

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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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**

**EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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



7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1525901

Instrument ID: Voal00.i      Calibration Date: 19-OCT-2015      Time: 07:27

Lab File ID: 1019A01      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.187	.14667	.1	-22	20	F
chloromethane	.20766	.20568	.1	-1	20	
vinyl chloride	.21396	.18884	.1	-12	20	
bromomethane	.13517	.11742	.1	-13	20	
chloroethane	.12913	.11375	.1	-12	20	
trichlorofluoromethane	.24868	.24728	.1	-1	20	
ethyl ether	.12265	.0985	.05	-20	20	
1,1,-dichloroethene	.15676	.15824	.1	1	20	
carbon disulfide	.60511	.61393	.1	1	20	
methylene chloride	.20702	.19686	.1	-5	20	
acetone	100	85.708	.1	-14	20	
trans-1,2-dichloroethene	.18303	.18986	.1	4	20	
methyl tert butyl ether	.59541	.55226	.1	-7	20	
Diisopropyl Ether	.66228	.59567	.05	-10	20	
1,1-dichloroethane	.37295	.37542	.2	1	20	
Ethyl-Tert-Butyl-Ether	.67262	.64382	.05	-4	20	
cis-1,2-dichloroethene	.20399	.20634	.1	1	20	
2,2-dichloropropane	.27701	.31006	.05	12	20	
bromochloromethane	.09003	.08509	.05	-5	20	
chloroform	.35545	.35916	.2	1	20	
carbontetrachloride	.23543	.25666	.1	9	20	
tetrahydrofuran	.07866	.05459	.05	-31	20	F
1,1,1-trichloroethane	.28145	.30372	.1	8	20	
2-butanone	.11217	.0762	.1	-32	20	F
1,1-dichloropropene	.24964	.25741	.05	3	20	
benzene	.78204	.81117	.5	4	20	
Tertiary-Amyl Methyl Ether	.58171	.56835	.05	-2	20	
1,2-dichloroethane	.29909	.2691	.1	-10	20	
trichloroethene	.19209	.20468	.2	7	20	F
dibromomethane	.12744	.11458	.05	-10	20	
1,2-dichloropropane	.20856	.20692	.1	-1	20	
bromodichloromethane	.27983	.27841	.2	-1	20	
1,4-dioxane	.00226	.00219	.05	-3	20	F
cis-1,3-dichloropropene	.32828	.33654	.2	3	20	
toluene	.70265	.7514	.4	7	20	
4-methyl-2-pentanone	.09341	.07249	.1	-22	20	F
tetrachloroethene	.24354	.26337	.2	8	20	
trans-1,3-dichloropropene	.44951	.44193	.1	-2	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1525901

Instrument ID: Voal00.i      Calibration Date: 19-OCT-2015      Time: 07:27

Lab File ID: 1019A01      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.22462	.2112	.1	-6	20
chlorodibromomethane	.27986	.27864	.1	0	20
1,3-dichloropropane	.4689	.43626	.05	-7	20
1,2-dibromoethane	.25199	.23037	.1	-9	20
2-hexanone	.25182	.16753	.1	-33	20
chlorobenzene	.72245	.76978	.5	7	20
ethyl benzene	1.321	1.4415	.1	9	20
1,1,1,2-tetrachloroethane	.25141	.27087	.05	8	20
p/m xylene	.4784	.52367	.1	9	20
o xylene	.4574	.49872	.3	9	20
styrene	.80709	.87626	.3	9	20
bromoform	.39095	.36518	.1	-7	20
isopropylbenzene	2.5014	2.7715	.1	11	20
bromobenzene	.58801	.61494	.05	5	20
n-propylbenzene	3.1176	3.4844	.05	12	20
1,1,2,2,-tetrachloroethane	.79665	.68113	.3	-15	20
2-chlorotoluene	1.9997	2.1420	.05	7	20
1,3,5-trimethylbenzene	2.1494	2.4620	.05	15	20
1,2,3-trichloropropane	.6668	.58182	.05	-13	20
4-chlorotoluene	1.9179	2.1652	.05	13	20
tert-butylbenzene	1.6411	1.8608	.05	13	20
1,2,4-trimethylbenzene	2.1380	2.4493	.05	15	20
sec-butylbenzene	2.7032	3.0559	.05	13	20
p-isopropyltoluene	2.1196	2.4676	.05	16	20
1,3-dichlorobenzene	1.1313	1.2257	.6	8	20
1,4-dichlorobenzene	1.1563	1.2272	.5	6	20
n-butylbenzene	2.2066	2.5350	.05	15	20
1,2-dichlorobenzene	1.0944	1.1108	.4	1	20
1,2-dibromo-3-chloropropane	.11922	.09408	.05	-21	20
hexachlorobutadiene	.33792	.41552	.05	23	20
1,2,4-trichlorobenzene	.69367	.78274	.2	13	20
naphthalene	2.0354	1.7838	.05	-12	20
1,2,3-trichlorobenzene	.65938	.68909	.05	5	20
dibromofluoromethane	.24097	.23669	.05	-2	30
1,2-dichloroethane-d4	.30902	.27658	.05	-10	30
toluene-d8	1.3369	1.3712	.05	3	30
4-bromofluorobenzene	1.0311	1.0795	.05	5	30

F

F

F

FORM VII MCP-8260HLW-10



*CERTIFICATE OF ANALYSIS*

Eric D. Simpson  
Tg2 Solutions  
51 Fremont Street  
Needham, MA 02492

**RE: Swansea 2345 (Colbea-Swansea)**  
**ESS Laboratory Work Order Number: 1608422**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard  
Laboratory Director

**REVIEWED**

**By ESS Laboratory at 4:15 pm, Aug 26, 2016**

**Analytical Summary**

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**SAMPLE RECEIPT**

The following samples were received on August 16, 2016 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has performed and reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.**

**Low Level VOA vials were frozen by ESS Laboratory on August 16, 2016 at 13:30.**

**Question I: All samples for Metals and EPH were analyzed for a subset of the required MCP list per the client's request.**

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1608422-01	UST-Area-1	Soil	1010, 6010C, 6020A, 7.3.3.2, 7.3.4.1, 7471B, 8082A, 8100M, 8260B, 8260B Low, 8270D, 9045, 9050A
1608422-02	UST-Area-2	Soil	8100M
1608422-03	UST-Area-3	Soil	8100M
1608422-04	UST-Area-4	Soil	8100M
1608422-05	Building-Area-1	Soil	1010, 6010C, 6020A, 7.3.3.2, 7.3.4.1, 7471B, 8082A, 8100M, 8260B Low, 8270D, 9045, 9050A, MADEP-VPH
1608422-06	Building-Area-2	Soil	1010, 6010C, 6020A, 7.3.3.2, 7.3.4.1, 7471B, 8082A, 8100M, 8260B Low, 8270D, 9045, 9050A
1608422-07	Disp-Area-1	Soil	1010, 6010C, 6020A, 7.3.3.2, 7.3.4.1, 7471B, 8082A, 8100M, 8260B Low, 8270D, 9045, 9050A
1608422-08	Disp-Area-2	Soil	1010, 6010C, 6020A, 7.3.3.2, 7.3.4.1, 7471B, 8082A, 8100M, 8260B Low, 8270D, 9045, 9050A



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**PROJECT NARRATIVE**

**5035/8260B Volatile Organic Compounds / Low Level**

1608422-01

Reported above the quantitation limit; Estimated value (E).

1,2,4-Trimethylbenzene

CZH0347-CCV1

Continuing Calibration %Diff/Drift is below control limit (CD-).

1,2-Dibromo-3-Chloropropane (21% @ 20%), 1,4-Dioxane (26% @ 20%), 2-Hexanone (24% @ 20%),  
4-Methyl-2-Pentanone (25% @ 20%), Tetrahydrofuran (22% @ 20%)

CZH0376-CCV1

Continuing Calibration %Diff/Drift is below control limit (CD-).

1,4-Dioxane (21% @ 20%), 4-Methyl-2-Pentanone (23% @ 20%), Tetrahydrofuran (21% @ 20%)

CZH0436-CCV1

Continuing Calibration %Diff/Drift is below control limit (CD-).

1,4-Dioxane (26% @ 20%), 2-Hexanone (22% @ 20%), 4-Methyl-2-Pentanone (23% @ 20%),  
Tertiary-amyl methyl ether (23% @ 20%), Tetrahydrofuran (24% @ 20%)

**5035/8260B Volatile Organic Compounds / Methanol**

CH61927-BS1

Blank Spike recovery is above upper control limit (B+).

Bromomethane (131% @ 70-130%)

CH61927-BS1

Blank Spike recovery is below lower control limit (B-).

Chloroethane (67% @ 70-130%), Chloromethane (58% @ 70-130%), Diethyl Ether (63% @ 70-130%)

CH61927-BSD1

Blank Spike recovery is below lower control limit (B-).

Chloroethane (64% @ 70-130%), Chloromethane (55% @ 70-130%), Diethyl Ether (55% @ 70-130%)

CZH0381-CCV1

Continuing Calibration %Diff/Drift is below control limit (CD-).

Chloroethane (35% @ 30%), Chloromethane (40% @ 30%), Diethyl Ether (40% @ 30%)

**8100M Total Petroleum Hydrocarbons**

CZH0253-CCV4

Continuing Calibration %Diff/Drift is below control limit (CD-).

Hexatriacontane (C36) (29% @ 25%)

**8270D Semi-Volatile Organic Compounds**

CZH0308-CCV1

Calibration required quadratic regression (Q).

2,4-Dinitrophenol (98% @ 80-120%)

CZH0308-CCV1

Continuing Calibration %Diff/Drift is above control limit (CD+).

Di-n-octylphthalate (25% @ 20%), p-Terphenyl-d14 (21% @ 20%), Pyrene (21% @ 20%)

CZH0341-CCV1

Calibration required quadratic regression (Q).

2,4-Dinitrophenol (92% @ 80-120%)

CZH0343-CCV1

Calibration required quadratic regression (Q).

2,4-Dinitrophenol (75% @ 80-120%), bis(2-Ethylhexyl)phthalate (97% @ 80-120%), Di-n-octylphthalate  
(81% @ 80-120%)

CZH0343-CCV1

Continuing Calibration %Diff/Drift is above control limit (CD+).

N-Nitrosodimethylamine (29% @ 20%), Pyridine (38% @ 20%)

CZH0343-CCV1

Continuing Calibration %Diff/Drift is below control limit (CD-).

2,4-Dinitrophenol (25% @ 20%), Pentachlorophenol (45% @ 20%)

CZH0383-CCV1

Calibration required quadratic regression (Q).





*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions

Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

2,4-Dinitrophenol (74% @ 80-120%), bis(2-Ethylhexyl)phthalate (96% @ 80-120%), Di-n-octylphthalate (97% @ 80-120%)

CZH0383-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

N-Nitrosodimethylamine (24% @ 20%)

CZH0383-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**

2,4-Dinitrophenol (26% @ 20%), Pentachlorophenol (45% @ 20%)

CZH0396-CCV1 **Calibration required quadratic regression (Q).**

2,4-Dinitrophenol (63% @ 80-120%), bis(2-Ethylhexyl)phthalate (95% @ 80-120%), Di-n-octylphthalate (90% @ 80-120%)

CZH0396-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**

2,4-Dinitrophenol (37% @ 20%), Pentachlorophenol (44% @ 20%)

**MADEP-VPH Volatile Petroleum Hydrocarbon**

CH61925-BS1 **Blank Spike recovery is above upper control limit (B+).**

Pentane (142% @ 70-130%)

**No other observations noted.**

**End of Project Narrative.**

**DATA USABILITY LINKS**

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**CURRENT SW-846 METHODOLOGY VERSIONS**

**Analytical Methods**

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

**Prep Methods**

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**MassDEP Analytical Protocol Certification Form**

MADEP RTN: \_\_\_\_\_

This form provides certification for the following data set: **1608422-01 through 1608422-08**

Matrices: ( ) Ground Water/Surface Water       Soil/Sediment      ( ) Drinking Water      ( ) Air      ( ) Other: \_\_\_\_\_

**CAM Protocol** (check all that apply below):

- |  |   |   |                                    |  |                             |
|--|---|---|------------------------------------|--|-----------------------------|
| <input checked="" type="checkbox"/> 8260 VOC<br>CAM II A     | <input checked="" type="checkbox"/> 7470/7471 Hg<br>CAM III B | ( ) MassDEP VPH<br>CAM IV A                                 | ( ) 8081 Pesticides<br>CAM V B     | ( ) 7196 Hex Cr<br>CAM VI B            | ( ) MassDEP APH<br>CAM IX A |
| <input checked="" type="checkbox"/> 8270 SVOC<br>CAM II B    | ( ) 7010 Metals<br>CAM III C                                  | <input checked="" type="checkbox"/> MassDEP EPH<br>CAM IV B | ( ) 8151 Herbicides<br>CAM V C     | ( ) 8330 Explosives<br>CAM VIII A      | ( ) TO-15 VOC<br>CAM IX B   |
| <input checked="" type="checkbox"/> 6010 Metals<br>CAM III A | <input checked="" type="checkbox"/> 6020 Metals<br>CAM III D  | <input checked="" type="checkbox"/> 8082 PCB<br>CAM V A     | ( ) 6860 Perchlorate<br>CAM VIII B | ( ) 9014 Total Cyanide/PAC<br>CAM VI A |                             |

*Affirmative responses to questions A through F are required for "Presumptive Certainty" status*

- |   |   |  |
|---|---|--|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes <input checked="" type="checkbox"/> No ( ) |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?  | Yes <input checked="" type="checkbox"/> No ( ) |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?  | Yes <input checked="" type="checkbox"/> No ( ) |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?                  | Yes <input checked="" type="checkbox"/> No ( ) |
| E | a. VPH, EPH, APH and TO-15 only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).  | Yes <input checked="" type="checkbox"/> No ( ) |
|   | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?  | Yes ( ) No ( )                                 |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?                                   | Yes <input checked="" type="checkbox"/> No ( ) |

*Responses to Questions G, H and I below are required for "Presumptive Certainty" status*

- |   |  |  |
|---|--|--|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?<br><i>Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.</i> | Yes <input checked="" type="checkbox"/> No ( )*  |
| H | Were all QC performance standards specified in the CAM protocol(s) achieved?   | Yes ( ) No <input checked="" type="checkbox"/> * |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)?   | Yes ( ) No <input checked="" type="checkbox"/> * |

\*All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature: Laurel Stoddard  
Printed Name: Laurel Stoddard

Date: August 26, 2016  
Position: Laboratory Director



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: UST-Area-1  
Date Sampled: 08/16/16 08:30  
Percent Solids: 95

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-01  
Sample Matrix: Soil  
Units: mg/kg dry

Extraction Method: 3050B

**Total Metals**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	3.09 (2.34)		6010C		1	KJK	08/25/16 21:48	2.24	100	CH61720
Barium	16.3 (2.34)		6010C		1	KJK	08/25/16 21:48	2.24	100	CH61720
Cadmium	ND (0.47)		6010C		1	KJK	08/25/16 21:48	2.24	100	CH61720
Chromium	5.89 (0.94)		6010C		1	KJK	08/25/16 21:48	2.24	100	CH61720
Lead	6.37 (4.69)		6010C		1	KJK	08/25/16 21:48	2.24	100	CH61720
Mercury	ND (0.032)		7471B		1	PJP	08/18/16 11:37	0.65	40	CH61722
Selenium	ND (0.47)		6020A		20	NAR	08/19/16 19:31	2.24	100	CH61720
Silver	ND (0.47)		6010C		1	KJK	08/25/16 21:48	2.24	100	CH61720



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: UST-Area-1  
Date Sampled: 08/16/16 08:30  
Percent Solids: 95  
Initial Volume: 8.2  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,1,1-Trichloroethane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,1,2,2-Tetrachloroethane	ND (0.0013)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,1,2-Trichloroethane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,1-Dichloroethane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,1-Dichloroethene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,1-Dichloropropene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,2,3-Trichlorobenzene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,2,3-Trichloropropane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,2,4-Trichlorobenzene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
<b>1,2,4-Trimethylbenzene</b>	<b>E 0.140</b> (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,2-Dibromo-3-Chloropropane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,2-Dibromoethane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,2-Dichlorobenzene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,2-Dichloroethane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,2-Dichloropropane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
<b>1,3,5-Trimethylbenzene</b>	<b>0.0360</b> (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,3-Dichlorobenzene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,3-Dichloropropane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,4-Dichlorobenzene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
1,4-Dioxane	ND (0.0641)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
2,2-Dichloropropane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
2-Butanone	ND (0.0064)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
2-Chlorotoluene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
2-Hexanone	ND (0.0064)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
4-Chlorotoluene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
4-Isopropyltoluene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
4-Methyl-2-Pentanone	ND (0.0064)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Acetone	ND (0.0064)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
<b>Benzene</b>	<b>0.0214</b> (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Bromobenzene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Bromochloromethane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: UST-Area-1  
Date Sampled: 08/16/16 08:30  
Percent Solids: 95  
Initial Volume: 8.2  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromodichloromethane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Bromoform	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Bromomethane	ND (0.0064)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Carbon Disulfide	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Carbon Tetrachloride	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Chlorobenzene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Chloroethane	ND (0.0064)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Chloroform	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Chloromethane	ND (0.0064)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
cis-1,2-Dichloroethene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
cis-1,3-Dichloropropene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Dibromochloromethane	ND (0.0013)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Dibromomethane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Dichlorodifluoromethane	ND (0.0064)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Diethyl Ether	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Di-isopropyl ether	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Ethyl tertiary-butyl ether	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
<b>Ethylbenzene</b>	<b>0.0347</b> (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Hexachlorobutadiene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
<b>Isopropylbenzene</b>	<b>0.0041</b> (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Methyl tert-Butyl Ether	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Methylene Chloride	ND (0.0064)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
<b>Naphthalene</b>	<b>0.0574</b> (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
<b>n-Butylbenzene</b>	<b>0.0108</b> (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
<b>n-Propylbenzene</b>	<b>0.0152</b> (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
sec-Butylbenzene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Styrene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
tert-Butylbenzene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Tertiary-amyl methyl ether	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Tetrachloroethene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Tetrahydrofuran	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
<b>Toluene</b>	<b>0.109</b> (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: UST-Area-1  
Date Sampled: 08/16/16 08:30  
Percent Solids: 95  
Initial Volume: 8.2  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
trans-1,2-Dichloroethene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
trans-1,3-Dichloropropene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Trichloroethene	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Trichlorofluoromethane	ND (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
Vinyl Chloride	ND (0.0064)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
<b>Xylene O</b>	<b>0.0695</b> (0.0032)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
<b>Xylene P,M</b>	<b>0.132</b> (0.0064)		8260B Low		1	08/23/16 19:53	CZH0436	CH62338
<b>Xylenes (Total)</b>	<b>0.201</b> (0.0064)		8260B Low		1	08/23/16 19:53		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>91 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>98 %</i>		<i>70-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
 Client Project ID: Swansea 2345  
 Client Sample ID: UST-Area-1  
 Date Sampled: 08/16/16 08:30  
 Percent Solids: 95  
 Initial Volume: 20.7  
 Final Volume: 15  
 Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
 ESS Laboratory Sample ID: 1608422-01  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: MD

**5035/8260B Volatile Organic Compounds / Methanol**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,1,1-Trichloroethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,1,2,2-Tetrachloroethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,1,2-Trichloroethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,1-Dichloroethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,1-Dichloroethene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,1-Dichloropropene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,2,3-Trichlorobenzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,2,3-Trichloropropane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,2,4-Trichlorobenzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
<b>1,2,4-Trimethylbenzene</b>	<b>0.162</b> (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,2-Dibromo-3-Chloropropane	ND (0.812)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,2-Dibromoethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,2-Dichlorobenzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,2-Dichloroethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,2-Dichloropropane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,3,5-Trimethylbenzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,3-Dichlorobenzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,3-Dichloropropane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,4-Dichlorobenzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
1,4-Dioxane - Screen	ND (32.5)		8260B		1	08/19/16 18:18	CZH0381	CH61927
2,2-Dichloropropane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
2-Butanone	ND (0.812)		8260B		1	08/19/16 18:18	CZH0381	CH61927
2-Chlorotoluene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
2-Hexanone	ND (0.812)		8260B		1	08/19/16 18:18	CZH0381	CH61927
4-Chlorotoluene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
4-Isopropyltoluene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
4-Methyl-2-Pentanone	ND (0.812)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Acetone	ND (0.812)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Benzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Bromobenzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Bromochloromethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927





*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: UST-Area-1  
Date Sampled: 08/16/16 08:30  
Percent Solids: 95  
Initial Volume: 20.7  
Final Volume: 15  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Methanol**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromodichloromethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Bromoform	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Bromomethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Carbon Disulfide	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Carbon Tetrachloride	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Chlorobenzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Chloroethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Chloroform	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Chloromethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
cis-1,2-Dichloroethene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
cis-1,3-Dichloropropene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Dibromochloromethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Dibromomethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Dichlorodifluoromethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Diethyl Ether	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Di-isopropyl ether	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Ethyl tertiary-butyl ether	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Ethylbenzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Hexachlorobutadiene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Isopropylbenzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Methyl tert-Butyl Ether	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Methylene Chloride	ND (0.325)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Naphthalene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
n-Butylbenzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
n-Propylbenzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
sec-Butylbenzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Styrene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
tert-Butylbenzene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Tertiary-amyl methyl ether	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Tetrachloroethene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Tetrahydrofuran	ND (0.812)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Toluene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: UST-Area-1  
Date Sampled: 08/16/16 08:30  
Percent Solids: 95  
Initial Volume: 20.7  
Final Volume: 15  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Methanol**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
trans-1,2-Dichloroethene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
trans-1,3-Dichloropropene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Trichloroethene	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Trichlorofluoromethane	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Vinyl Chloride	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Xylene O	ND (0.162)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Xylene P,M	ND (0.325)		8260B		1	08/19/16 18:18	CZH0381	CH61927
Xylenes (Total)	ND (0.325)		8260B		1	08/19/16 18:18		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>99 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>90 %</i>		<i>70-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: UST-Area-1  
Date Sampled: 08/16/16 08:30  
Percent Solids: 95  
Initial Volume: 19.2  
Final Volume: 10  
Extraction Method: 3540C

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ML  
Prepared: 8/17/16 17:21  
Cleanup Method: 3665A

**8082A Polychlorinated Biphenyls (PCB)**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0547)		8082A		1	08/19/16 0:24		CH61703
Aroclor 1221	ND (0.0547)		8082A		1	08/19/16 0:24		CH61703
Aroclor 1232	ND (0.0547)		8082A		1	08/19/16 0:24		CH61703
Aroclor 1242	ND (0.0547)		8082A		1	08/19/16 0:24		CH61703
Aroclor 1248	ND (0.0547)		8082A		1	08/19/16 0:24		CH61703
Aroclor 1254	ND (0.0547)		8082A		1	08/19/16 0:24		CH61703
Aroclor 1260	ND (0.0547)		8082A		1	08/19/16 0:24		CH61703
Aroclor 1262	ND (0.0547)		8082A		1	08/19/16 0:24		CH61703
Aroclor 1268	ND (0.0547)		8082A		1	08/19/16 0:24		CH61703

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	73 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	72 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	69 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	83 %		30-150



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: UST-Area-1  
Date Sampled: 08/16/16 08:30  
Percent Solids: 95  
Initial Volume: 20.3  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: DPS  
Prepared: 8/16/16 15:36

**8100M Total Petroleum Hydrocarbons**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (10.3)		8100M		1	08/17/16 4:28	CZH0286	CH61613
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		95 %		40-140				



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
 Client Project ID: Swansea 2345  
 Client Sample ID: UST-Area-1  
 Date Sampled: 08/16/16 08:30  
 Percent Solids: 95  
 Initial Volume: 14.2  
 Final Volume: 0.5  
 Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
 ESS Laboratory Sample ID: 1608422-01  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: TJ  
 Prepared: 8/16/16 15:36

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,2,4-Trichlorobenzene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
1,2-Dichlorobenzene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
1,3-Dichlorobenzene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
1,4-Dichlorobenzene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
2,4,5-Trichlorophenol	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
2,4,6-Trichlorophenol	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
2,4-Dichlorophenol	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
2,4-Dimethylphenol	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
2,4-Dinitrophenol	ND (1.85)		8270D		1	08/19/16 23:16	CZH0383	CH61614
2,4-Dinitrotoluene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
2,6-Dinitrotoluene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
2-Chloronaphthalene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
2-Chlorophenol	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
2-Methylnaphthalene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
2-Methylphenol	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
2-Nitrophenol	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
3,3'-Dichlorobenzidine	ND (0.740)		8270D		1	08/19/16 23:16	CZH0383	CH61614
3+4-Methylphenol	ND (0.740)		8270D		1	08/19/16 23:16	CZH0383	CH61614
4-Bromophenyl-phenylether	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
4-Chloroaniline	ND (0.740)		8270D		1	08/19/16 23:16	CZH0383	CH61614
4-Nitrophenol	ND (1.85)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Acenaphthene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Acenaphthylene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Acetophenone	ND (0.740)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Aniline	ND (1.85)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Anthracene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Azobenzene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Benzo(a)anthracene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Benzo(a)pyrene	ND (0.185)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Benzo(b)fluoranthene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Benzo(g,h,i)perylene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Benzo(k)fluoranthene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: UST-Area-1  
Date Sampled: 08/16/16 08:30  
Percent Solids: 95  
Initial Volume: 14.2  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/16/16 15:36

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
bis(2-Chloroethoxy)methane	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
bis(2-Chloroethyl)ether	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
bis(2-chloroisopropyl)Ether	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
bis(2-Ethylhexyl)phthalate	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Butylbenzylphthalate	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Chrysene	ND (0.185)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Dibenzo(a,h)Anthracene	ND (0.185)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Dibenzofuran	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Diethylphthalate	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Dimethylphthalate	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Di-n-butylphthalate	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Di-n-octylphthalate	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Fluoranthene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Fluorene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Hexachlorobenzene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Hexachlorobutadiene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Hexachloroethane	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Indeno(1,2,3-cd)Pyrene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Isophorone	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Naphthalene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Nitrobenzene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
N-Nitrosodimethylamine	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Pentachlorophenol	ND (1.85)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Phenanthrene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Phenol	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614
Pyrene	ND (0.370)		8270D		1	08/19/16 23:16	CZH0383	CH61614

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	68 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	74 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	76 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	71 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	72 %		30-130



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: UST-Area-1  
Date Sampled: 08/16/16 08:30  
Percent Solids: 95  
Initial Volume: 14.2  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-01  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/16/16 15:36

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
<i>Surrogate: Nitrobenzene-d5</i>		77 %		30-130				
<i>Surrogate: Phenol-d6</i>		80 %		30-130				
<i>Surrogate: p-Terphenyl-d14</i>		80 %		30-130				



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: UST-Area-1  
Date Sampled: 08/16/16 08:30  
Percent Solids: 95

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-01  
Sample Matrix: Soil

**Classical Chemistry**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Conductivity	WL 270 (5)		9050A		1	MJV	08/17/16 12:32	umhos/cm	CH61725
Corrosivity (pH)	6.22 (N/A)		9045		1	JLK	08/16/16 21:26	S.U.	CH61646
Corrosivity (pH) Sample Temp	Soil pH measured in water at 22.7 °C.								
Flashpoint	> 200 (N/A)		1010		1	CRR	08/18/16 13:45	°F	CH61817
Reactive Cyanide	ND (2.0)		7.3.3.2		1	EEM	08/17/16 11:35	mg/kg	CH61726
Reactive Sulfide	ND (2.0)		7.3.4.1		1	EEM	08/17/16 11:35	mg/kg	CH61726





*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: UST-Area-2  
Date Sampled: 08/16/16 08:30  
Percent Solids: 93  
Initial Volume: 20  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-02  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: DPS  
Prepared: 8/16/16 15:36

**8100M Total Petroleum Hydrocarbons**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (10.8)		8100M		1	08/17/16 5:08	CZH0286	CH61613
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>91 %</i>		<i>40-140</i>				



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: UST-Area-3  
Date Sampled: 08/16/16 08:30  
Percent Solids: 94  
Initial Volume: 19.7  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-03  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: DPS  
Prepared: 8/16/16 15:36

**8100M Total Petroleum Hydrocarbons**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (10.8)		8100M		1	08/17/16 5:49	CZH0286	CH61613
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		87 %		40-140				



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: UST-Area-4  
Date Sampled: 08/16/16 08:30  
Percent Solids: 94  
Initial Volume: 20.3  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-04  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: DPS  
Prepared: 8/16/16 15:36

**8100M Total Petroleum Hydrocarbons**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (10.5)		8100M		1	08/17/16 6:29	CZH0286	CH61613
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>98 %</i>		<i>40-140</i>				



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-1  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-05  
Sample Matrix: Soil  
Units: mg/kg dry

Extraction Method: 3050B

**Total Metals**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	2.68 (2.34)		6010C		1	KJK	08/25/16 21:52	2.34	100	CH61720
Barium	10.1 (2.34)		6010C		1	KJK	08/25/16 21:52	2.34	100	CH61720
Cadmium	ND (0.47)		6010C		1	KJK	08/25/16 21:52	2.34	100	CH61720
Chromium	7.26 (0.93)		6010C		1	KJK	08/25/16 21:52	2.34	100	CH61720
Lead	24.9 (4.67)		6010C		1	KJK	08/25/16 21:52	2.34	100	CH61720
Mercury	ND (0.035)		7471B		1	PJP	08/18/16 11:39	0.62	40	CH61722
Selenium	ND (0.47)		6020A		20	NAR	08/19/16 19:37	2.34	100	CH61720
Silver	ND (0.47)		6010C		1	KJK	08/25/16 21:52	2.34	100	CH61720



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-1  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 7.6  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-05  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,1,1-Trichloroethane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,1,2,2-Tetrachloroethane	ND (0.0014)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,1,2-Trichloroethane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,1-Dichloroethane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,1-Dichloroethene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,1-Dichloropropene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,2,3-Trichlorobenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,2,3-Trichloropropane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,2,4-Trichlorobenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,2,4-Trimethylbenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,2-Dibromo-3-Chloropropane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,2-Dibromoethane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,2-Dichlorobenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,2-Dichloroethane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,2-Dichloropropane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,3,5-Trimethylbenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,3-Dichlorobenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,3-Dichloropropane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,4-Dichlorobenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
1,4-Dioxane	ND (0.0719)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
2,2-Dichloropropane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
2-Butanone	ND (0.0072)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
2-Chlorotoluene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
2-Hexanone	ND (0.0072)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
4-Chlorotoluene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
4-Isopropyltoluene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
4-Methyl-2-Pentanone	ND (0.0072)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Acetone	ND (0.0072)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Benzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Bromobenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Bromochloromethane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-1  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 7.6  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-05  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromodichloromethane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Bromoform	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Bromomethane	ND (0.0072)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Carbon Disulfide	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Carbon Tetrachloride	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Chlorobenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Chloroethane	ND (0.0072)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Chloroform	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Chloromethane	ND (0.0072)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
cis-1,2-Dichloroethene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
cis-1,3-Dichloropropene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Dibromochloromethane	ND (0.0014)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Dibromomethane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Dichlorodifluoromethane	ND (0.0072)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Diethyl Ether	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Di-isopropyl ether	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Ethyl tertiary-butyl ether	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Ethylbenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Hexachlorobutadiene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Isopropylbenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Methyl tert-Butyl Ether	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Methylene Chloride	ND (0.0072)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Naphthalene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
n-Butylbenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
n-Propylbenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
sec-Butylbenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Styrene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
tert-Butylbenzene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Tertiary-amyl methyl ether	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Tetrachloroethene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Tetrahydrofuran	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Toluene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-1  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 7.6  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-05  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
trans-1,2-Dichloroethene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
trans-1,3-Dichloropropene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Trichloroethene	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Trichlorofluoromethane	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Vinyl Chloride	ND (0.0072)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Xylene O	ND (0.0036)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Xylene P,M	ND (0.0072)		8260B Low		1	08/18/16 23:28	CZH0347	CH61824
Xylenes (Total)	ND (0.0072)		8260B Low		1	08/18/16 23:28		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>90 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>91 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>		<i>70-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-1  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 19.8  
Final Volume: 10  
Extraction Method: 3540C

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-05  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ML  
Prepared: 8/17/16 17:21  
Cleanup Method: 3665A

**8082A Polychlorinated Biphenyls (PCB)**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0552)		8082A		1	08/19/16 0:43		CH61703
Aroclor 1221	ND (0.0552)		8082A		1	08/19/16 0:43		CH61703
Aroclor 1232	ND (0.0552)		8082A		1	08/19/16 0:43		CH61703
Aroclor 1242	ND (0.0552)		8082A		1	08/19/16 0:43		CH61703
Aroclor 1248	ND (0.0552)		8082A		1	08/19/16 0:43		CH61703
Aroclor 1254	ND (0.0552)		8082A		1	08/19/16 0:43		CH61703
Aroclor 1260	ND (0.0552)		8082A		1	08/19/16 0:43		CH61703
Aroclor 1262	ND (0.0552)		8082A		1	08/19/16 0:43		CH61703
Aroclor 1268	ND (0.0552)		8082A		1	08/19/16 0:43		CH61703

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	69 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	69 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	67 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	71 %		30-150





*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-1  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 19.5  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-05  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: DPS  
Prepared: 8/16/16 15:36

**8100M Total Petroleum Hydrocarbons**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	43.0 (11.2)		8100M		1	08/17/16 7:10	CZH0286	CH61613
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>101 %</i>		<i>40-140</i>				



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-1  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 14.3  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-05  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/17/16 15:32

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,2,4-Trichlorobenzene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
1,2-Dichlorobenzene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
1,3-Dichlorobenzene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
1,4-Dichlorobenzene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
2,4,5-Trichlorophenol	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
2,4,6-Trichlorophenol	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
2,4-Dichlorophenol	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
2,4-Dimethylphenol	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
2,4-Dinitrophenol	ND (1.92)		8270D		1	08/20/16 5:04	CZH0383	CH61708
2,4-Dinitrotoluene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
2,6-Dinitrotoluene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
2-Chloronaphthalene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
2-Chlorophenol	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
2-Methylnaphthalene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
2-Methylphenol	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
2-Nitrophenol	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
3,3'-Dichlorobenzidine	ND (0.765)		8270D		1	08/20/16 5:04	CZH0383	CH61708
3+4-Methylphenol	ND (0.765)		8270D		1	08/20/16 5:04	CZH0383	CH61708
4-Bromophenyl-phenylether	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
4-Chloroaniline	ND (0.765)		8270D		1	08/20/16 5:04	CZH0383	CH61708
4-Nitrophenol	ND (1.92)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Acenaphthene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Acenaphthylene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Acetophenone	ND (0.765)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Aniline	ND (1.92)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Anthracene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Azobenzene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
<b>Benzo(a)anthracene</b>	<b>0.575</b> (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
<b>Benzo(a)pyrene</b>	<b>0.564</b> (0.192)		8270D		1	08/20/16 5:04	CZH0383	CH61708
<b>Benzo(b)fluoranthene</b>	<b>0.538</b> (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
<b>Benzo(g,h,i)perylene</b>	<b>0.572</b> (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Benzo(k)fluoranthene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-1  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 14.3  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-05  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/17/16 15:32

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
bis(2-Chloroethoxy)methane	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
bis(2-Chloroethyl)ether	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
bis(2-chloroisopropyl)Ether	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
bis(2-Ethylhexyl)phthalate	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Butylbenzylphthalate	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
<b>Chrysene</b>	<b>0.618</b> (0.192)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Dibenzo(a,h)Anthracene	ND (0.192)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Dibenzofuran	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Diethylphthalate	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Dimethylphthalate	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Di-n-butylphthalate	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Di-n-octylphthalate	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
<b>Fluoranthene</b>	<b>0.827</b> (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Fluorene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Hexachlorobenzene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Hexachlorobutadiene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Hexachloroethane	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
<b>Indeno(1,2,3-cd)Pyrene</b>	<b>0.399</b> (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Isophorone	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Naphthalene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Nitrobenzene	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
N-Nitrosodimethylamine	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Pentachlorophenol	ND (1.92)		8270D		1	08/20/16 5:04	CZH0383	CH61708
<b>Phenanthrene</b>	<b>0.762</b> (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
Phenol	ND (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708
<b>Pyrene</b>	<b>1.15</b> (0.382)		8270D		1	08/20/16 5:04	CZH0383	CH61708

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	67 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	81 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	74 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	74 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	71 %		30-130



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-1  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 14.3  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-05  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/17/16 15:32

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
<i>Surrogate: Nitrobenzene-d5</i>		79 %		30-130				
<i>Surrogate: Phenol-d6</i>		79 %		30-130				
<i>Surrogate: p-Terphenyl-d14</i>		79 %		30-130				



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-1  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-05  
Sample Matrix: Soil

**Classical Chemistry**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Conductivity	WL 62 (5)		9050A		1	MJV	08/17/16 12:32	umhos/cm	CH61725
Corrosivity (pH)	6.14 (N/A)		9045		1	JLK	08/16/16 21:26	S.U.	CH61646
Corrosivity (pH) Sample Temp	Soil pH measured in water at 22.8 °C.								
Flashpoint	> 200 (N/A)		1010		1	CRR	08/18/16 13:45	°F	CH61817
Reactive Cyanide	ND (2.0)		7.3.3.2		1	JLK	08/18/16 12:30	mg/kg	CH61823
Reactive Sulfide	ND (2.0)		7.3.4.1		1	JLK	08/18/16 12:30	mg/kg	CH61823



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
 Client Project ID: Swansea 2345  
 Client Sample ID: Building-Area-1  
 Date Sampled: 08/16/16 08:55  
 Percent Solids: 91  
 Initial Volume: 20.3  
 Final Volume: 15  
 Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
 ESS Laboratory Sample ID: 1608422-05  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: MEK

**MADEP-VPH Volatile Petroleum Hydrocarbon**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
C9-C10 Aromatics	ND (9.01)		MADEP-VPH		1	08/23/16 0:09	CZH0379	CH61925
C5-C8 Aliphatics1,2	ND (9.01)		MADEP-VPH		1	08/23/16 0:09		[CALC]
C9-C12 Aliphatics2,3	ND (9.01)		MADEP-VPH		1	08/23/16 0:09		[CALC]
Benzene	ND (0.18)		MADEP-VPH		1	08/23/16 0:09	CZH0379	CH61925
Ethylbenzene	ND (0.18)		MADEP-VPH		1	08/23/16 0:09	CZH0379	CH61925
Methyl tert-Butyl Ether	ND (0.05)		MADEP-VPH		1	08/23/16 0:09	CZH0379	CH61925
Naphthalene	ND (0.18)		MADEP-VPH		1	08/23/16 0:09	CZH0379	CH61925
Toluene	ND (0.18)		MADEP-VPH		1	08/23/16 0:09	CZH0379	CH61925
Xylene O	ND (0.18)		MADEP-VPH		1	08/23/16 0:09	CZH0379	CH61925
Xylene P,M	ND (0.36)		MADEP-VPH		1	08/23/16 0:09	CZH0379	CH61925
<b>1:1 Methanol/Soil Ratio %D</b>	<b>35 (N/A)</b>		MADEP-VPH			08/22/16 7:40		CH61925
<b>Preservative:</b>	<b>MeOH - covered</b>		MADEP-VPH					CH61925

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 2,5-Dibromotoluene - FID</i>	103 %		70-130
<i>Surrogate: 2,5-Dibromotoluene - PID</i>	101 %		70-130
<i>Surrogate: Trifluorotoluene - FID</i>	99 %		70-130
<i>Surrogate: Trifluorotoluene - PID</i>	96 %		70-130



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-2  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-06  
Sample Matrix: Soil  
Units: mg/kg dry

Extraction Method: 3050B

**Total Metals**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	3.39 (2.50)		6010C		1	KJK	08/25/16 21:56	2.21	100	CH61720
Barium	10.9 (2.50)		6010C		1	KJK	08/25/16 21:56	2.21	100	CH61720
Cadmium	ND (0.50)		6010C		1	KJK	08/25/16 21:56	2.21	100	CH61720
Chromium	7.21 (1.00)		6010C		1	KJK	08/25/16 21:56	2.21	100	CH61720
Lead	21.8 (5.00)		6010C		1	KJK	08/25/16 21:56	2.21	100	CH61720
Mercury	ND (0.034)		7471B		1	PJP	08/18/16 11:41	0.64	40	CH61722
Selenium	ND (0.50)		6020A		20	NAR	08/19/16 19:43	2.21	100	CH61720
Silver	ND (0.50)		6010C		1	KJK	08/25/16 21:56	2.21	100	CH61720



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-2  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 7.4  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-06  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,1,1-Trichloroethane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,1,2,2-Tetrachloroethane	ND (0.0015)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,1,2-Trichloroethane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,1-Dichloroethane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,1-Dichloroethene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,1-Dichloropropene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,2,3-Trichlorobenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,2,3-Trichloropropane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,2,4-Trichlorobenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,2,4-Trimethylbenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,2-Dibromo-3-Chloropropane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,2-Dibromoethane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,2-Dichlorobenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,2-Dichloroethane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,2-Dichloropropane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,3,5-Trimethylbenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,3-Dichlorobenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,3-Dichloropropane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,4-Dichlorobenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
1,4-Dioxane	ND (0.0746)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
2,2-Dichloropropane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
2-Butanone	ND (0.0075)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
2-Chlorotoluene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
2-Hexanone	ND (0.0075)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
4-Chlorotoluene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
4-Isopropyltoluene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
4-Methyl-2-Pentanone	ND (0.0075)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Acetone	ND (0.0075)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Benzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Bromobenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Bromochloromethane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922





*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-2  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 7.4  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-06  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromodichloromethane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Bromoform	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Bromomethane	ND (0.0075)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Carbon Disulfide	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Carbon Tetrachloride	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Chlorobenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Chloroethane	ND (0.0075)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Chloroform	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Chloromethane	ND (0.0075)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
cis-1,2-Dichloroethene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
cis-1,3-Dichloropropene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Dibromochloromethane	ND (0.0015)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Dibromomethane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Dichlorodifluoromethane	ND (0.0075)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Diethyl Ether	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Di-isopropyl ether	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Ethyl tertiary-butyl ether	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Ethylbenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Hexachlorobutadiene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Isopropylbenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Methyl tert-Butyl Ether	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Methylene Chloride	ND (0.0075)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Naphthalene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
n-Butylbenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
n-Propylbenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
sec-Butylbenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Styrene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
tert-Butylbenzene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Tertiary-amyl methyl ether	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Tetrachloroethene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Tetrahydrofuran	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Toluene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-2  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 7.4  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-06  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
trans-1,2-Dichloroethene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
trans-1,3-Dichloropropene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Trichloroethene	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Trichlorofluoromethane	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Vinyl Chloride	ND (0.0075)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Xylene O	ND (0.0037)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Xylene P,M	ND (0.0075)		8260B Low		1	08/19/16 15:27	CZH0376	CH61922
Xylenes (Total)	ND (0.0075)		8260B Low		1	08/19/16 15:27		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>102 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>97 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>		<i>70-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-2  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 19.8  
Final Volume: 10  
Extraction Method: 3540C

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-06  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ML  
Prepared: 8/17/16 17:21  
Cleanup Method: 3665A

**8082A Polychlorinated Biphenyls (PCB)**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0558)		8082A		1	08/19/16 1:02		CH61703
Aroclor 1221	ND (0.0558)		8082A		1	08/19/16 1:02		CH61703
Aroclor 1232	ND (0.0558)		8082A		1	08/19/16 1:02		CH61703
Aroclor 1242	ND (0.0558)		8082A		1	08/19/16 1:02		CH61703
Aroclor 1248	ND (0.0558)		8082A		1	08/19/16 1:02		CH61703
Aroclor 1254	ND (0.0558)		8082A		1	08/19/16 1:02		CH61703
Aroclor 1260	ND (0.0558)		8082A		1	08/19/16 1:02		CH61703
Aroclor 1262	ND (0.0558)		8082A		1	08/19/16 1:02		CH61703
Aroclor 1268	ND (0.0558)		8082A		1	08/19/16 1:02		CH61703

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	79 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	80 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	79 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	84 %		30-150



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-2  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 20.7  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-06  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: DPS  
Prepared: 8/16/16 15:36

**8100M Total Petroleum Hydrocarbons**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	24.5 (10.7)		8100M		1	08/17/16 7:50	CZH0286	CH61613
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		96 %		40-140				



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-2  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 14.7  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-06  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/17/16 15:32

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,2,4-Trichlorobenzene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
1,2-Dichlorobenzene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
1,3-Dichlorobenzene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
1,4-Dichlorobenzene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
2,4,5-Trichlorophenol	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
2,4,6-Trichlorophenol	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
2,4-Dichlorophenol	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
2,4-Dimethylphenol	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
2,4-Dinitrophenol	ND (1.88)		8270D		1	08/22/16 22:00	CZH0396	CH61708
2,4-Dinitrotoluene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
2,6-Dinitrotoluene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
2-Chloronaphthalene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
2-Chlorophenol	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
2-Methylnaphthalene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
2-Methylphenol	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
2-Nitrophenol	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
3,3'-Dichlorobenzidine	ND (0.752)		8270D		1	08/22/16 22:00	CZH0396	CH61708
3+4-Methylphenol	ND (0.752)		8270D		1	08/22/16 22:00	CZH0396	CH61708
4-Bromophenyl-phenylether	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
4-Chloroaniline	ND (0.752)		8270D		1	08/22/16 22:00	CZH0396	CH61708
4-Nitrophenol	ND (1.88)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Acenaphthene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Acenaphthylene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Acetophenone	ND (0.752)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Aniline	ND (1.88)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Anthracene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Azobenzene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Benzo(a)anthracene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Benzo(a)pyrene	ND (0.188)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Benzo(b)fluoranthene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Benzo(g,h,i)perylene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Benzo(k)fluoranthene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-2  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 14.7  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-06  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/17/16 15:32

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
bis(2-Chloroethoxy)methane	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
bis(2-Chloroethyl)ether	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
bis(2-chloroisopropyl)Ether	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
bis(2-Ethylhexyl)phthalate	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Butylbenzylphthalate	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Chrysene	ND (0.188)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Dibenzo(a,h)Anthracene	ND (0.188)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Dibenzofuran	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Diethylphthalate	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Dimethylphthalate	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Di-n-butylphthalate	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Di-n-octylphthalate	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Fluoranthene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Fluorene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Hexachlorobenzene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Hexachlorobutadiene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Hexachloroethane	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Indeno(1,2,3-cd)Pyrene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Isophorone	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
<b>Naphthalene</b>	<b>0.655 (0.375)</b>		8270D		1	08/22/16 22:00	CZH0396	CH61708
Nitrobenzene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
N-Nitrosodimethylamine	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Pentachlorophenol	ND (1.88)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Phenanthrene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Phenol	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708
Pyrene	ND (0.375)		8270D		1	08/22/16 22:00	CZH0396	CH61708

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	69 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	82 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	77 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	72 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	73 %		30-130



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-2  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91  
Initial Volume: 14.7  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-06  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/17/16 15:32

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
<i>Surrogate: Nitrobenzene-d5</i>		77 %		30-130				
<i>Surrogate: Phenol-d6</i>		83 %		30-130				
<i>Surrogate: p-Terphenyl-d14</i>		87 %		30-130				



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Building-Area-2  
Date Sampled: 08/16/16 08:55  
Percent Solids: 91

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-06  
Sample Matrix: Soil

**Classical Chemistry**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Conductivity	WL 22 (5)		9050A		1	MJV	08/17/16 12:32	umhos/cm	CH61725
Corrosivity (pH)	5.78 (N/A)		9045		1	JLK	08/16/16 21:26	S.U.	CH61646
Corrosivity (pH) Sample Temp	Soil pH measured in water at 22.7 °C.								
Flashpoint	> 200 (N/A)		1010		1	CRR	08/18/16 13:45	°F	CH61817
Reactive Cyanide	ND (2.0)		7.3.3.2		1	JLK	08/18/16 12:30	mg/kg	CH61823
Reactive Sulfide	ND (2.0)		7.3.4.1		1	JLK	08/18/16 12:30	mg/kg	CH61823





*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-1  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-07  
Sample Matrix: Soil  
Units: mg/kg dry

Extraction Method: 3050B

**Total Metals**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	2.91 (2.25)		6010C		1	KJK	08/25/16 22:00	2.38	100	CH61720
Barium	14.1 (2.25)		6010C		1	KJK	08/25/16 22:00	2.38	100	CH61720
Cadmium	ND (0.45)		6010C		1	KJK	08/25/16 22:00	2.38	100	CH61720
Chromium	6.29 (0.90)		6010C		1	KJK	08/25/16 22:00	2.38	100	CH61720
Lead	11.7 (4.51)		6010C		1	KJK	08/25/16 22:00	2.38	100	CH61720
Mercury	ND (0.034)		7471B		1	PJP	08/18/16 11:43	0.63	40	CH61722
Selenium	ND (0.45)		6020A		20	NAR	08/19/16 19:48	2.38	100	CH61720
Silver	ND (0.45)		6010C		1	KJK	08/25/16 22:00	2.38	100	CH61720



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-1  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 6.5  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-07  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,1,1-Trichloroethane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,1,2,2-Tetrachloroethane	ND (0.0016)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,1,2-Trichloroethane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,1-Dichloroethane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,1-Dichloroethene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,1-Dichloropropene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,2,3-Trichlorobenzene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,2,3-Trichloropropane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,2,4-Trichlorobenzene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
<b>1,2,4-Trimethylbenzene</b>	<b>0.0709</b> (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,2-Dibromo-3-Chloropropane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,2-Dibromoethane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,2-Dichlorobenzene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,2-Dichloroethane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,2-Dichloropropane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
<b>1,3,5-Trimethylbenzene</b>	<b>0.0177</b> (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,3-Dichlorobenzene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,3-Dichloropropane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,4-Dichlorobenzene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
1,4-Dioxane	ND (0.0825)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
2,2-Dichloropropane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
2-Butanone	ND (0.0082)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
2-Chlorotoluene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
2-Hexanone	ND (0.0082)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
4-Chlorotoluene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
4-Isopropyltoluene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
4-Methyl-2-Pentanone	ND (0.0082)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Acetone	ND (0.0082)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Benzene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Bromobenzene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Bromochloromethane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-1  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 6.5  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-07  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromodichloromethane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Bromoform	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Bromomethane	ND (0.0082)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Carbon Disulfide	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Carbon Tetrachloride	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Chlorobenzene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Chloroethane	ND (0.0082)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Chloroform	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Chloromethane	ND (0.0082)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
cis-1,2-Dichloroethene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
cis-1,3-Dichloropropene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Dibromochloromethane	ND (0.0016)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Dibromomethane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Dichlorodifluoromethane	ND (0.0082)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Diethyl Ether	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Di-isopropyl ether	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Ethyl tertiary-butyl ether	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
<b>Ethylbenzene</b>	<b>0.0144</b> (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Hexachlorobutadiene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Isopropylbenzene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Methyl tert-Butyl Ether	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Methylene Chloride	ND (0.0082)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
<b>Naphthalene</b>	<b>0.0159</b> (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
n-Butylbenzene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
<b>n-Propylbenzene</b>	<b>0.0069</b> (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
sec-Butylbenzene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Styrene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
tert-Butylbenzene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Tertiary-amyl methyl ether	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Tetrachloroethene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Tetrahydrofuran	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
<b>Toluene</b>	<b>0.0234</b> (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-1  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 6.5  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-07  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
trans-1,2-Dichloroethene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
trans-1,3-Dichloropropene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Trichloroethene	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Trichlorofluoromethane	ND (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
Vinyl Chloride	ND (0.0082)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
<b>Xylene O</b>	<b>0.0409</b> (0.0041)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
<b>Xylene P,M</b>	<b>0.0700</b> (0.0082)		8260B Low		1	08/19/16 15:53	CZH0376	CH61922
<b>Xylenes (Total)</b>	<b>0.111</b> (0.0082)		8260B Low		1	08/19/16 15:53		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>93 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>		<i>70-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-1  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 19.8  
Final Volume: 10  
Extraction Method: 3540C

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-07  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ML  
Prepared: 8/17/16 17:21  
Cleanup Method: 3665A

**8082A Polychlorinated Biphenyls (PCB)**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0542)		8082A		1	08/19/16 1:21		CH61703
Aroclor 1221	ND (0.0542)		8082A		1	08/19/16 1:21		CH61703
Aroclor 1232	ND (0.0542)		8082A		1	08/19/16 1:21		CH61703
Aroclor 1242	ND (0.0542)		8082A		1	08/19/16 1:21		CH61703
Aroclor 1248	ND (0.0542)		8082A		1	08/19/16 1:21		CH61703
Aroclor 1254	ND (0.0542)		8082A		1	08/19/16 1:21		CH61703
Aroclor 1260	ND (0.0542)		8082A		1	08/19/16 1:21		CH61703
Aroclor 1262	ND (0.0542)		8082A		1	08/19/16 1:21		CH61703
Aroclor 1268	ND (0.0542)		8082A		1	08/19/16 1:21		CH61703

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	76 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	77 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	78 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	82 %		30-150



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-1  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 19.2  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-07  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: DPS  
Prepared: 8/16/16 15:36

**8100M Total Petroleum Hydrocarbons**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	13.1 (11.2)		8100M		1	08/17/16 8:31	CZH0286	CH61613
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>94 %</i>		<i>40-140</i>				



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-1  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 14.5  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-07  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/17/16 15:32

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,2,4-Trichlorobenzene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
1,2-Dichlorobenzene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
1,3-Dichlorobenzene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
1,4-Dichlorobenzene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
2,4,5-Trichlorophenol	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
2,4,6-Trichlorophenol	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
2,4-Dichlorophenol	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
2,4-Dimethylphenol	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
2,4-Dinitrophenol	ND (1.85)		8270D		1	08/22/16 22:35	CZH0396	CH61708
2,4-Dinitrotoluene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
2,6-Dinitrotoluene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
2-Chloronaphthalene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
2-Chlorophenol	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
2-Methylnaphthalene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
2-Methylphenol	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
2-Nitrophenol	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
3,3'-Dichlorobenzidine	ND (0.740)		8270D		1	08/22/16 22:35	CZH0396	CH61708
3+4-Methylphenol	ND (0.740)		8270D		1	08/22/16 22:35	CZH0396	CH61708
4-Bromophenyl-phenylether	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
4-Chloroaniline	ND (0.740)		8270D		1	08/22/16 22:35	CZH0396	CH61708
4-Nitrophenol	ND (1.85)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Acenaphthene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Acenaphthylene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Acetophenone	ND (0.740)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Aniline	ND (1.85)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Anthracene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Azobenzene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Benzo(a)anthracene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Benzo(a)pyrene	ND (0.185)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Benzo(b)fluoranthene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Benzo(g,h,i)perylene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Benzo(k)fluoranthene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-1  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 14.5  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-07  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/17/16 15:32

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
bis(2-Chloroethoxy)methane	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
bis(2-Chloroethyl)ether	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
bis(2-chloroisopropyl)Ether	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
bis(2-Ethylhexyl)phthalate	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Butylbenzylphthalate	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Chrysene	ND (0.185)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Dibenzo(a,h)Anthracene	ND (0.185)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Dibenzofuran	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Diethylphthalate	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Dimethylphthalate	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Di-n-butylphthalate	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Di-n-octylphthalate	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Fluoranthene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Fluorene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Hexachlorobenzene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Hexachlorobutadiene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Hexachloroethane	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Indeno(1,2,3-cd)Pyrene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Isophorone	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
<b>Naphthalene</b>	<b>0.383</b> (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Nitrobenzene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
N-Nitrosodimethylamine	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Pentachlorophenol	ND (1.85)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Phenanthrene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Phenol	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708
Pyrene	ND (0.369)		8270D		1	08/22/16 22:35	CZH0396	CH61708

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	78 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	89 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	88 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	80 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	85 %		30-130





*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-1  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 14.5  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-07  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/17/16 15:32

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
<i>Surrogate: Nitrobenzene-d5</i>		88 %		30-130				
<i>Surrogate: Phenol-d6</i>		91 %		30-130				
<i>Surrogate: p-Terphenyl-d14</i>		90 %		30-130				



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-1  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-07  
Sample Matrix: Soil

**Classical Chemistry**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Conductivity	WL 341 (5)		9050A		1	MJV	08/17/16 12:32	umhos/cm	CH61725
Corrosivity (pH)	6.44 (N/A)		9045		1	JLK	08/16/16 21:26	S.U.	CH61646
Corrosivity (pH) Sample Temp	Soil pH measured in water at 22.8 °C.								
Flashpoint	> 200 (N/A)		1010		1	CRR	08/18/16 13:45	°F	CH61817
Reactive Cyanide	ND (2.0)		7.3.3.2		1	JLK	08/18/16 12:30	mg/kg	CH61823
Reactive Sulfide	ND (2.0)		7.3.4.1		1	JLK	08/18/16 12:30	mg/kg	CH61823



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-2  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-08  
Sample Matrix: Soil  
Units: mg/kg dry

Extraction Method: 3050B

**Total Metals**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	3.50 (2.37)		6010C		1	KJK	08/25/16 22:04	2.26	100	CH61720
Barium	15.3 (2.37)		6010C		1	KJK	08/25/16 22:04	2.26	100	CH61720
Cadmium	ND (0.47)		6010C		1	KJK	08/25/16 22:04	2.26	100	CH61720
Chromium	6.65 (0.95)		6010C		1	KJK	08/25/16 22:04	2.26	100	CH61720
Lead	9.74 (4.74)		6010C		1	KJK	08/25/16 22:04	2.26	100	CH61720
Mercury	ND (0.034)		7471B		1	PJP	08/18/16 11:45	0.62	40	CH61722
Selenium	ND (0.47)		6020A		20	NAR	08/19/16 19:54	2.26	100	CH61720
Silver	ND (0.47)		6010C		1	KJK	08/25/16 22:04	2.26	100	CH61720



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-2  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 7.8  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-08  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,1,1-Trichloroethane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,1,2,2-Tetrachloroethane	ND (0.0014)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,1,2-Trichloroethane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,1-Dichloroethane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,1-Dichloroethene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,1-Dichloropropene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,2,3-Trichlorobenzene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,2,3-Trichloropropane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,2,4-Trichlorobenzene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
<b>1,2,4-Trimethylbenzene</b>	<b>0.0643</b> (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,2-Dibromo-3-Chloropropane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,2-Dibromoethane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,2-Dichlorobenzene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,2-Dichloroethane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,2-Dichloropropane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
<b>1,3,5-Trimethylbenzene</b>	<b>0.0160</b> (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,3-Dichlorobenzene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,3-Dichloropropane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,4-Dichlorobenzene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
1,4-Dioxane	ND (0.0687)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
2,2-Dichloropropane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
2-Butanone	ND (0.0069)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
2-Chlorotoluene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
2-Hexanone	ND (0.0069)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
4-Chlorotoluene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
4-Isopropyltoluene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
4-Methyl-2-Pentanone	ND (0.0069)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Acetone	ND (0.0069)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Benzene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Bromobenzene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Bromochloromethane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
 Client Project ID: Swansea 2345  
 Client Sample ID: Disp-Area-2  
 Date Sampled: 08/16/16 09:30  
 Percent Solids: 93  
 Initial Volume: 7.8  
 Final Volume: 10  
 Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
 ESS Laboratory Sample ID: 1608422-08  
 Sample Matrix: Soil  
 Units: mg/kg dry  
 Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromodichloromethane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Bromoform	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Bromomethane	ND (0.0069)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Carbon Disulfide	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Carbon Tetrachloride	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Chlorobenzene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Chloroethane	ND (0.0069)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Chloroform	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Chloromethane	ND (0.0069)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
cis-1,2-Dichloroethene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
cis-1,3-Dichloropropene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Dibromochloromethane	ND (0.0014)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Dibromomethane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Dichlorodifluoromethane	ND (0.0069)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Diethyl Ether	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Di-isopropyl ether	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Ethyl tertiary-butyl ether	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
<b>Ethylbenzene</b>	<b>0.0133</b> (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Hexachlorobutadiene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Isopropylbenzene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Methyl tert-Butyl Ether	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Methylene Chloride	ND (0.0069)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
<b>Naphthalene</b>	<b>0.0184</b> (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
<b>n-Butylbenzene</b>	<b>0.0040</b> (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
n-Propylbenzene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
sec-Butylbenzene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Styrene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
tert-Butylbenzene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Tertiary-amyl methyl ether	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Tetrachloroethene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Tetrahydrofuran	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
<b>Toluene</b>	<b>0.0197</b> (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-2  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 7.8  
Final Volume: 10  
Extraction Method: 5035

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-08  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: MD

**5035/8260B Volatile Organic Compounds / Low Level**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
trans-1,2-Dichloroethene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
trans-1,3-Dichloropropene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Trichloroethene	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Trichlorofluoromethane	ND (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
Vinyl Chloride	ND (0.0069)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
<b>Xylene O</b>	<b>0.0335</b> (0.0034)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
<b>Xylene P,M</b>	<b>0.0621</b> (0.0069)		8260B Low		1	08/19/16 16:18	CZH0376	CH61922
<b>Xylenes (Total)</b>	<b>0.0956</b> (0.0069)		8260B Low		1	08/19/16 16:18		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>91 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>		<i>70-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-2  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 19.5  
Final Volume: 10  
Extraction Method: 3540C

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-08  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: ML  
Prepared: 8/17/16 17:21  
Cleanup Method: 3665A

**8082A Polychlorinated Biphenyls (PCB)**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0550)		8082A		1	08/19/16 3:33		CH61703
Aroclor 1221	ND (0.0550)		8082A		1	08/19/16 3:33		CH61703
Aroclor 1232	ND (0.0550)		8082A		1	08/19/16 3:33		CH61703
Aroclor 1242	ND (0.0550)		8082A		1	08/19/16 3:33		CH61703
Aroclor 1248	ND (0.0550)		8082A		1	08/19/16 3:33		CH61703
Aroclor 1254	ND (0.0550)		8082A		1	08/19/16 3:33		CH61703
Aroclor 1260	ND (0.0550)		8082A		1	08/19/16 3:33		CH61703
Aroclor 1262	ND (0.0550)		8082A		1	08/19/16 3:33		CH61703
Aroclor 1268	ND (0.0550)		8082A		1	08/19/16 3:33		CH61703

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	72 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	73 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	71 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	74 %		30-150



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-2  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 19.9  
Final Volume: 1  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-08  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: DPS  
Prepared: 8/16/16 15:36

**8100M Total Petroleum Hydrocarbons**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (10.8)		8100M		1	08/17/16 9:11	CZH0286	CH61613
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		88 %		40-140				





*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-2  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 14.2  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-08  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/17/16 15:32

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,2,4-Trichlorobenzene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
1,2-Dichlorobenzene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
1,3-Dichlorobenzene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
1,4-Dichlorobenzene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
2,4,5-Trichlorophenol	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
2,4,6-Trichlorophenol	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
2,4-Dichlorophenol	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
2,4-Dimethylphenol	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
2,4-Dinitrophenol	ND (1.89)		8270D		1	08/22/16 23:10	CZH0396	CH61708
2,4-Dinitrotoluene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
2,6-Dinitrotoluene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
2-Chloronaphthalene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
2-Chlorophenol	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
2-Methylnaphthalene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
2-Methylphenol	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
2-Nitrophenol	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
3,3'-Dichlorobenzidine	ND (0.756)		8270D		1	08/22/16 23:10	CZH0396	CH61708
3+4-Methylphenol	ND (0.756)		8270D		1	08/22/16 23:10	CZH0396	CH61708
4-Bromophenyl-phenylether	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
4-Chloroaniline	ND (0.756)		8270D		1	08/22/16 23:10	CZH0396	CH61708
4-Nitrophenol	ND (1.89)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Acenaphthene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Acenaphthylene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Acetophenone	ND (0.756)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Aniline	ND (1.89)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Anthracene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Azobenzene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Benzo(a)anthracene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Benzo(a)pyrene	ND (0.189)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Benzo(b)fluoranthene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Benzo(g,h,i)perylene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Benzo(k)fluoranthene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-2  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 14.2  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-08  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/17/16 15:32

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
bis(2-Chloroethoxy)methane	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
bis(2-Chloroethyl)ether	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
bis(2-chloroisopropyl)Ether	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
bis(2-Ethylhexyl)phthalate	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Butylbenzylphthalate	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Chrysene	ND (0.189)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Dibenzo(a,h)Anthracene	ND (0.189)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Dibenzofuran	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Diethylphthalate	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Dimethylphthalate	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Di-n-butylphthalate	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Di-n-octylphthalate	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Fluoranthene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Fluorene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Hexachlorobenzene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Hexachlorobutadiene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Hexachloroethane	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Indeno(1,2,3-cd)Pyrene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Isophorone	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Naphthalene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Nitrobenzene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
N-Nitrosodimethylamine	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Pentachlorophenol	ND (1.89)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Phenanthrene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Phenol	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708
Pyrene	ND (0.377)		8270D		1	08/22/16 23:10	CZH0396	CH61708

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>72 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>85 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>82 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>75 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>78 %</i>		<i>30-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-2  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93  
Initial Volume: 14.2  
Final Volume: 0.5  
Extraction Method: 3546

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-08  
Sample Matrix: Soil  
Units: mg/kg dry  
Analyst: TJ  
Prepared: 8/17/16 15:32

**8270D Semi-Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
<i>Surrogate: Nitrobenzene-d5</i>		86 %		30-130				
<i>Surrogate: Phenol-d6</i>		86 %		30-130				
<i>Surrogate: p-Terphenyl-d14</i>		91 %		30-130				



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345  
Client Sample ID: Disp-Area-2  
Date Sampled: 08/16/16 09:30  
Percent Solids: 93

ESS Laboratory Work Order: 1608422  
ESS Laboratory Sample ID: 1608422-08  
Sample Matrix: Soil

**Classical Chemistry**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Conductivity	WL 172 (5)		9050A		1	MJV	08/17/16 12:32	umhos/cm	CH61725
Corrosivity (pH)	6.40 (N/A)		9045		1	JLK	08/16/16 21:26	S.U.	CH61646
Corrosivity (pH) Sample Temp	Soil pH measured in water at 22.8 °C.								
Flashpoint	> 200 (N/A)		1010		1	CRR	08/18/16 13:45	°F	CH61817
Reactive Cyanide	ND (2.0)		7.3.3.2		1	JLK	08/18/16 12:30	mg/kg	CH61823
Reactive Sulfide	ND (2.0)		7.3.4.1		1	JLK	08/18/16 12:30	mg/kg	CH61823



CERTIFICATE OF ANALYSIS

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

**Batch CH61720 - 3050B**

**Blank**

Arsenic	ND	2.50	mg/kg wet
Barium	ND	2.50	mg/kg wet
Cadmium	ND	0.50	mg/kg wet
Chromium	ND	1.00	mg/kg wet
Lead	ND	5.00	mg/kg wet
Selenium	ND	0.50	mg/kg wet
Silver	ND	0.50	mg/kg wet

**LCS**

Arsenic	160	10.0	mg/kg wet	161.0	99	80-120
Barium	389	10.0	mg/kg wet	351.0	111	80-120
Cadmium	189	2.00	mg/kg wet	190.0	99	80-120
Chromium	85.6	4.00	mg/kg wet	87.90	97	80-120
Lead	143	20.0	mg/kg wet	138.0	104	80-120
Selenium	331	25.0	mg/kg wet	305.0	108	80-120
Silver	61.6	2.00	mg/kg wet	58.00	106	80-120

**LCS Dup**

Arsenic	156	10.0	mg/kg wet	161.0	97	80-120	2	20
Barium	395	10.0	mg/kg wet	351.0	113	80-120	2	20
Cadmium	187	2.00	mg/kg wet	190.0	98	80-120	1	20
Chromium	85.1	4.00	mg/kg wet	87.90	97	80-120	0.6	20
Lead	139	20.0	mg/kg wet	138.0	101	80-120	3	20
Selenium	313	25.0	mg/kg wet	305.0	103	80-120	5	30
Silver	61.2	2.00	mg/kg wet	58.00	105	80-120	0.7	20

**Batch CH61722 - 7471B**

**Blank**

Mercury	ND	0.033	mg/kg wet
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**LCS**

Mercury	11.9	1.94	mg/kg wet	9.700	123	51-148
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**LCS Dup**

Mercury	11.9	1.94	mg/kg wet	9.700	123	51-148	0.4	20
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH61824 - 5035**

**Blank**

1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet
1,1-Dichloroethane	ND	0.0050	mg/kg wet
1,1-Dichloroethene	ND	0.0050	mg/kg wet
1,1-Dichloropropene	ND	0.0050	mg/kg wet
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH61824 - 5035**

1,2,3-Trichloropropane	ND	0.0050	mg/kg wet
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet
1,2-Dibromoethane	ND	0.0050	mg/kg wet
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet
1,2-Dichloroethane	ND	0.0050	mg/kg wet
1,2-Dichloropropane	ND	0.0050	mg/kg wet
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet
1,3-Dichloropropane	ND	0.0050	mg/kg wet
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet
1,4-Dioxane	ND	0.100	mg/kg wet
2,2-Dichloropropane	ND	0.0050	mg/kg wet
2-Butanone	ND	0.0100	mg/kg wet
2-Chlorotoluene	ND	0.0050	mg/kg wet
2-Hexanone	ND	0.0100	mg/kg wet
4-Chlorotoluene	ND	0.0050	mg/kg wet
4-Isopropyltoluene	ND	0.0050	mg/kg wet
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet
Acetone	ND	0.0100	mg/kg wet
Benzene	ND	0.0050	mg/kg wet
Bromobenzene	ND	0.0050	mg/kg wet
Bromochloromethane	ND	0.0050	mg/kg wet
Bromodichloromethane	ND	0.0050	mg/kg wet
Bromoform	ND	0.0050	mg/kg wet
Bromomethane	ND	0.0100	mg/kg wet
Carbon Disulfide	ND	0.0050	mg/kg wet
Carbon Tetrachloride	ND	0.0050	mg/kg wet
Chlorobenzene	ND	0.0050	mg/kg wet
Chloroethane	ND	0.0100	mg/kg wet
Chloroform	ND	0.0050	mg/kg wet
Chloromethane	ND	0.0100	mg/kg wet
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet
Dibromochloromethane	ND	0.0020	mg/kg wet
Dibromomethane	ND	0.0050	mg/kg wet
Dichlorodifluoromethane	ND	0.0100	mg/kg wet
Diethyl Ether	ND	0.0050	mg/kg wet
Di-isopropyl ether	ND	0.0050	mg/kg wet
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet
Ethylbenzene	ND	0.0050	mg/kg wet
Hexachlorobutadiene	ND	0.0050	mg/kg wet
Isopropylbenzene	ND	0.0050	mg/kg wet
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH61824 - 5035**

Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0474		mg/kg wet	0.05000		95	70-130			
Surrogate: 4-Bromofluorobenzene	0.0471		mg/kg wet	0.05000		94	70-130			
Surrogate: Dibromofluoromethane	0.0467		mg/kg wet	0.05000		93	70-130			
Surrogate: Toluene-d8	0.0527		mg/kg wet	0.05000		105	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
1,1,1-Trichloroethane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,2,2-Tetrachloroethane	0.0474	0.0020	mg/kg wet	0.05000		95	70-130			
1,1,2-Trichloroethane	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
1,1-Dichloroethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
1,1-Dichloroethene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130			
1,1-Dichloropropene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
1,2,3-Trichlorobenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,2,3-Trichloropropane	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
1,2,4-Trichlorobenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
1,2,4-Trimethylbenzene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,2-Dibromo-3-Chloropropane	0.0391	0.0050	mg/kg wet	0.05000		78	70-130			
1,2-Dibromoethane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,2-Dichlorobenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
1,2-Dichloroethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
1,2-Dichloropropane	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
1,3,5-Trimethylbenzene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
1,3-Dichlorobenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
1,3-Dichloropropane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
1,4-Dichlorobenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
1,4-Dioxane	0.902	0.100	mg/kg wet	1.000		90	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH61824 - 5035**

2,2-Dichloropropane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
2-Butanone	0.231	0.0100	mg/kg wet	0.2500		92	70-130			
2-Chlorotoluene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
2-Hexanone	0.197	0.0100	mg/kg wet	0.2500		79	70-130			
4-Chlorotoluene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
4-Isopropyltoluene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
4-Methyl-2-Pentanone	0.190	0.0100	mg/kg wet	0.2500		76	70-130			
Acetone	0.206	0.0100	mg/kg wet	0.2500		82	70-130			
Benzene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
Bromobenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
Bromochloromethane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130			
Bromodichloromethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Bromoform	0.0414	0.0050	mg/kg wet	0.05000		83	70-130			
Bromomethane	0.0498	0.0100	mg/kg wet	0.05000		100	70-130			
Carbon Disulfide	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Carbon Tetrachloride	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Chlorobenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
Chloroethane	0.0399	0.0100	mg/kg wet	0.05000		80	70-130			
Chloroform	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Chloromethane	0.0477	0.0100	mg/kg wet	0.05000		95	70-130			
cis-1,2-Dichloroethene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130			
cis-1,3-Dichloropropene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
Dibromochloromethane	0.0532	0.0020	mg/kg wet	0.05000		106	70-130			
Dibromomethane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130			
Dichlorodifluoromethane	0.0459	0.0100	mg/kg wet	0.05000		92	70-130			
Diethyl Ether	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
Di-isopropyl ether	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Ethyl tertiary-butyl ether	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Ethylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
Hexachlorobutadiene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
Isopropylbenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
Methyl tert-Butyl Ether	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Methylene Chloride	0.0482	0.0100	mg/kg wet	0.05000		96	70-130			
Naphthalene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
n-Butylbenzene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
n-Propylbenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
sec-Butylbenzene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
Styrene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
tert-Butylbenzene	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
Tertiary-amyl methyl ether	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			
Tetrachloroethene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
Tetrahydrofuran	0.0373	0.0050	mg/kg wet	0.05000		75	70-130			
Toluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
trans-1,2-Dichloroethene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
trans-1,3-Dichloropropene	0.0420	0.0050	mg/kg wet	0.05000		84	70-130			





CERTIFICATE OF ANALYSIS

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH61824 - 5035**

Trichloroethene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Trichlorofluoromethane	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Vinyl Chloride	0.0519	0.0100	mg/kg wet	0.05000		104	70-130			
Xylene O	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Xylene P,M	0.101	0.0100	mg/kg wet	0.1000		101	70-130			
Xylenes (Total)	0.151	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0512		mg/kg wet	0.05000		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0509		mg/kg wet	0.05000		102	70-130			
Surrogate: Dibromofluoromethane	0.0520		mg/kg wet	0.05000		104	70-130			
Surrogate: Toluene-d8	0.0513		mg/kg wet	0.05000		103	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	0.5	25	
1,1,1-Trichloroethane	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	0.7	25	
1,1,2,2-Tetrachloroethane	0.0489	0.0020	mg/kg wet	0.05000		98	70-130	3	25	
1,1,2-Trichloroethane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	0.6	25	
1,1-Dichloroethane	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	0	25	
1,1-Dichloroethene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	0.8	25	
1,1-Dichloropropene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	1	25	
1,2,3-Trichlorobenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	3	25	
1,2,3-Trichloropropane	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
1,2,4-Trichlorobenzene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
1,2,4-Trimethylbenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	0.9	25	
1,2-Dibromo-3-Chloropropane	0.0399	0.0050	mg/kg wet	0.05000		80	70-130	2	25	
1,2-Dibromoethane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	2	25	
1,2-Dichlorobenzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
1,2-Dichloroethane	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	0.5	25	
1,2-Dichloropropane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	0.7	25	
1,3,5-Trimethylbenzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	1	25	
1,3-Dichlorobenzene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	3	25	
1,3-Dichloropropane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	2	25	
1,4-Dichlorobenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	0.4	25	
1,4-Dioxane	0.892	0.100	mg/kg wet	1.000		89	70-130	1	20	
2,2-Dichloropropane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	1	25	
2-Butanone	0.236	0.0100	mg/kg wet	0.2500		94	70-130	2	25	
2-Chlorotoluene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	0.1	25	
2-Hexanone	0.201	0.0100	mg/kg wet	0.2500		81	70-130	2	25	
4-Chlorotoluene	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	2	25	
4-Isopropyltoluene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	1	25	
4-Methyl-2-Pentanone	0.194	0.0100	mg/kg wet	0.2500		78	70-130	2	25	
Acetone	0.207	0.0100	mg/kg wet	0.2500		83	70-130	0.3	25	
Benzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	0.08	25	
Bromobenzene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
Bromochloromethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	1	25	
Bromodichloromethane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	0.7	25	
Bromoform	0.0418	0.0050	mg/kg wet	0.05000		84	70-130	0.9	25	



CERTIFICATE OF ANALYSIS

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH61824 - 5035**

Bromomethane	0.0531	0.0100	mg/kg wet	0.05000		106	70-130	6	25	
Carbon Disulfide	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	0.08	25	
Carbon Tetrachloride	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
Chlorobenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	0.7	25	
Chloroethane	0.0401	0.0100	mg/kg wet	0.05000		80	70-130	0.5	25	
Chloroform	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	0.7	25	
Chloromethane	0.0483	0.0100	mg/kg wet	0.05000		97	70-130	1	25	
cis-1,2-Dichloroethene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	0.08	25	
cis-1,3-Dichloropropene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	0.7	25	
Dibromochloromethane	0.0544	0.0020	mg/kg wet	0.05000		109	70-130	2	25	
Dibromomethane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	0.3	25	
Dichlorodifluoromethane	0.0449	0.0100	mg/kg wet	0.05000		90	70-130	2	25	
Diethyl Ether	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	1	25	
Di-isopropyl ether	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	1	25	
Ethyl tertiary-butyl ether	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
Ethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	0.8	25	
Hexachlorobutadiene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	0.9	25	
Isopropylbenzene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130	2	25	
Methyl tert-Butyl Ether	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
Methylene Chloride	0.0483	0.0100	mg/kg wet	0.05000		97	70-130	0.2	25	
Naphthalene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	5	25	
n-Butylbenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	1	25	
n-Propylbenzene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	1	25	
sec-Butylbenzene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130	0.4	25	
Styrene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	0.9	25	
tert-Butylbenzene	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	1	25	
Tertiary-amyl methyl ether	0.0442	0.0050	mg/kg wet	0.05000		88	70-130	2	25	
Tetrachloroethene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130	0.3	25	
Tetrahydrofuran	0.0381	0.0050	mg/kg wet	0.05000		76	70-130	2	25	
Toluene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	0.7	25	
trans-1,2-Dichloroethene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	0.8	25	
trans-1,3-Dichloropropene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130	1	25	
Trichloroethene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	0.2	25	
Trichlorofluoromethane	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	1	25	
Vinyl Chloride	0.0525	0.0100	mg/kg wet	0.05000		105	70-130	1	25	
Xylene O	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	0.5	25	
Xylene P,M	0.101	0.0100	mg/kg wet	0.1000		101	70-130	0.3	25	
Xylenes (Total)	0.151	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0519		mg/kg wet	0.05000		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.0514		mg/kg wet	0.05000		103	70-130			
Surrogate: Dibromofluoromethane	0.0518		mg/kg wet	0.05000		104	70-130			
Surrogate: Toluene-d8	0.0522		mg/kg wet	0.05000		104	70-130			

**Batch CH61922 - 5035**

<b>Blank</b>										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH61922 - 5035**

1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH61922 - 5035**

Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0469		mg/kg wet	0.05000		94	70-130			
Surrogate: 4-Bromofluorobenzene	0.0470		mg/kg wet	0.05000		94	70-130			
Surrogate: Dibromofluoromethane	0.0455		mg/kg wet	0.05000		91	70-130			
Surrogate: Toluene-d8	0.0518		mg/kg wet	0.05000		104	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	0.0563	0.0050	mg/kg wet	0.05000		113	70-130			
1,1,1-Trichloroethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
1,1,2,2-Tetrachloroethane	0.0487	0.0020	mg/kg wet	0.05000		97	70-130			
1,1,2-Trichloroethane	0.0481	0.0050	mg/kg wet	0.05000		96	70-130			
1,1-Dichloroethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
1,1-Dichloroethene	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,1-Dichloropropene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
1,2,3-Trichlorobenzene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
1,2,3-Trichloropropane	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,4-Trichlorobenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
1,2,4-Trimethylbenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
1,2-Dibromo-3-Chloropropane	0.0412	0.0050	mg/kg wet	0.05000		82	70-130			
1,2-Dibromoethane	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
1,2-Dichlorobenzene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH61922 - 5035**

1,2-Dichloroethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
1,2-Dichloropropane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,3,5-Trimethylbenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130			
1,3-Dichlorobenzene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,3-Dichloropropane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130			
1,4-Dichlorobenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
1,4-Dioxane	0.970	0.100	mg/kg wet	1.000		97	70-130			
2,2-Dichloropropane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
2-Butanone	0.243	0.0100	mg/kg wet	0.2500		97	70-130			
2-Chlorotoluene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
2-Hexanone	0.218	0.0100	mg/kg wet	0.2500		87	70-130			
4-Chlorotoluene	0.0526	0.0050	mg/kg wet	0.05000		105	70-130			
4-Isopropyltoluene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
4-Methyl-2-Pentanone	0.202	0.0100	mg/kg wet	0.2500		81	70-130			
Acetone	0.220	0.0100	mg/kg wet	0.2500		88	70-130			
Benzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Bromobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Bromochloromethane	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
Bromodichloromethane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130			
Bromoform	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Bromomethane	0.0551	0.0100	mg/kg wet	0.05000		110	70-130			
Carbon Disulfide	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Carbon Tetrachloride	0.0539	0.0050	mg/kg wet	0.05000		108	70-130			
Chlorobenzene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130			
Chloroethane	0.0433	0.0100	mg/kg wet	0.05000		87	70-130			
Chloroform	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
Chloromethane	0.0497	0.0100	mg/kg wet	0.05000		99	70-130			
cis-1,2-Dichloroethene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
cis-1,3-Dichloropropene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130			
Dibromochloromethane	0.0585	0.0020	mg/kg wet	0.05000		117	70-130			
Dibromomethane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
Dichlorodifluoromethane	0.0486	0.0100	mg/kg wet	0.05000		97	70-130			
Diethyl Ether	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
Di-isopropyl ether	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
Ethyl tertiary-butyl ether	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Ethylbenzene	0.0541	0.0050	mg/kg wet	0.05000		108	70-130			
Hexachlorobutadiene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Isopropylbenzene	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
Methyl tert-Butyl Ether	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Methylene Chloride	0.0516	0.0100	mg/kg wet	0.05000		103	70-130			
Naphthalene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
n-Butylbenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130			
n-Propylbenzene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
sec-Butylbenzene	0.0534	0.0050	mg/kg wet	0.05000		107	70-130			
Styrene	0.0540	0.0050	mg/kg wet	0.05000		108	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH61922 - 5035**

tert-Butylbenzene	0.0546	0.0050	mg/kg wet	0.05000		109	70-130			
Tertiary-amyl methyl ether	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
Tetrachloroethene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
Tetrahydrofuran	0.0404	0.0050	mg/kg wet	0.05000		81	70-130			
Toluene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
trans-1,2-Dichloroethene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
trans-1,3-Dichloropropene	0.0431	0.0050	mg/kg wet	0.05000		86	70-130			
Trichloroethene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Trichlorofluoromethane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Vinyl Chloride	0.0552	0.0100	mg/kg wet	0.05000		110	70-130			
Xylene O	0.0544	0.0050	mg/kg wet	0.05000		109	70-130			
Xylene P,M	0.110	0.0100	mg/kg wet	0.1000		110	70-130			
Xylenes (Total)	0.164	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0526		mg/kg wet	0.05000		105	70-130			
Surrogate: 4-Bromofluorobenzene	0.0546		mg/kg wet	0.05000		109	70-130			
Surrogate: Dibromofluoromethane	0.0525		mg/kg wet	0.05000		105	70-130			
Surrogate: Toluene-d8	0.0546		mg/kg wet	0.05000		109	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	0.0543	0.0050	mg/kg wet	0.05000		109	70-130	4	25	
1,1,1-Trichloroethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	5	25	
1,1,2,2-Tetrachloroethane	0.0476	0.0020	mg/kg wet	0.05000		95	70-130	2	25	
1,1,2-Trichloroethane	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
1,1-Dichloroethane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
1,1-Dichloroethene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	6	25	
1,1-Dichloropropene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
1,2,3-Trichlorobenzene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	0.2	25	
1,2,3-Trichloropropane	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
1,2,4-Trichlorobenzene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	0.5	25	
1,2,4-Trimethylbenzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	3	25	
1,2-Dibromo-3-Chloropropane	0.0399	0.0050	mg/kg wet	0.05000		80	70-130	3	25	
1,2-Dibromoethane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
1,2-Dichlorobenzene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
1,2-Dichloroethane	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
1,2-Dichloropropane	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	3	25	
1,3,5-Trimethylbenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	4	25	
1,3-Dichlorobenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
1,3-Dichloropropane	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	0.2	25	
1,4-Dichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	1	25	
1,4-Dioxane	0.989	0.100	mg/kg wet	1.000		99	70-130	2	20	
2,2-Dichloropropane	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	6	25	
2-Butanone	0.239	0.0100	mg/kg wet	0.2500		96	70-130	2	25	
2-Chlorotoluene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
2-Hexanone	0.220	0.0100	mg/kg wet	0.2500		88	70-130	0.8	25	
4-Chlorotoluene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	3	25	
4-Isopropyltoluene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	4	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH61922 - 5035**

4-Methyl-2-Pentanone	0.201	0.0100	mg/kg wet	0.2500		80	70-130	0.6	25	
Acetone	0.216	0.0100	mg/kg wet	0.2500		86	70-130	2	25	
Benzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	3	25	
Bromobenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
Bromochloromethane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	1	25	
Bromodichloromethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	3	25	
Bromoform	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	2	25	
Bromomethane	0.0525	0.0100	mg/kg wet	0.05000		105	70-130	5	25	
Carbon Disulfide	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	6	25	
Carbon Tetrachloride	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	7	25	
Chlorobenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	3	25	
Chloroethane	0.0405	0.0100	mg/kg wet	0.05000		81	70-130	7	25	
Chloroform	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	3	25	
Chloromethane	0.0486	0.0100	mg/kg wet	0.05000		97	70-130	2	25	
cis-1,2-Dichloroethene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
cis-1,3-Dichloropropene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
Dibromochloromethane	0.0577	0.0020	mg/kg wet	0.05000		115	70-130	1	25	
Dibromomethane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	1	25	
Dichlorodifluoromethane	0.0446	0.0100	mg/kg wet	0.05000		89	70-130	9	25	
Diethyl Ether	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	2	25	
Di-isopropyl ether	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	0.7	25	
Ethyl tertiary-butyl ether	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	1	25	
Ethylbenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	5	25	
Hexachlorobutadiene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
Isopropylbenzene	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	5	25	
Methyl tert-Butyl Ether	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	0.9	25	
Methylene Chloride	0.0499	0.0100	mg/kg wet	0.05000		100	70-130	3	25	
Naphthalene	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	1	25	
n-Butylbenzene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	4	25	
n-Propylbenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
sec-Butylbenzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	5	25	
Styrene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	3	25	
tert-Butylbenzene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	5	25	
Tertiary-amyl methyl ether	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	1	25	
Tetrachloroethene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	5	25	
Tetrahydrofuran	0.0400	0.0050	mg/kg wet	0.05000		80	70-130	1	25	
Toluene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
trans-1,2-Dichloroethene	0.0502	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
trans-1,3-Dichloropropene	0.0429	0.0050	mg/kg wet	0.05000		86	70-130	0.5	25	
Trichloroethene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	4	25	
Trichlorofluoromethane	0.0435	0.0050	mg/kg wet	0.05000		87	70-130	8	25	
Vinyl Chloride	0.0520	0.0100	mg/kg wet	0.05000		104	70-130	6	25	
Xylene O	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	4	25	
Xylene P,M	0.105	0.0100	mg/kg wet	0.1000		105	70-130	4	25	
Xylenes (Total)	0.157	0.0100	mg/kg wet							



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH61922 - 5035**

Surrogate: 1,2-Dichloroethane-d4	0.0520		mg/kg wet	0.05000		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.0549		mg/kg wet	0.05000		110	70-130			
Surrogate: Dibromofluoromethane	0.0512		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0540		mg/kg wet	0.05000		108	70-130			

**Batch CH62338 - 5035**

**Blank**

1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							





*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH62338 - 5035**

Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0481		mg/kg wet	0.05000		96	70-130			
Surrogate: 4-Bromofluorobenzene	0.0465		mg/kg wet	0.05000		93	70-130			
Surrogate: Dibromofluoromethane	0.0484		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0511		mg/kg wet	0.05000		102	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	0.0551	0.0050	mg/kg wet	0.05000		110	70-130			
1,1,1-Trichloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			
1,1,2,2-Tetrachloroethane	0.0479	0.0020	mg/kg wet	0.05000		96	70-130			
1,1,2-Trichloroethane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,1-Dichloroethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
1,1-Dichloroethene	0.0548	0.0050	mg/kg wet	0.05000		110	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH62338 - 5035**

1,1-Dichloropropene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
1,2,3-Trichlorobenzene	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
1,2,3-Trichloropropane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,4-Trichlorobenzene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
1,2,4-Trimethylbenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
1,2-Dibromo-3-Chloropropane	0.0404	0.0050	mg/kg wet	0.05000		81	70-130			
1,2-Dibromoethane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,2-Dichlorobenzene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
1,2-Dichloroethane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
1,2-Dichloropropane	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
1,3,5-Trimethylbenzene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130			
1,3-Dichlorobenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
1,3-Dichloropropane	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
1,4-Dichlorobenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
1,4-Dioxane	0.962	0.100	mg/kg wet	1.000		96	70-130			
2,2-Dichloropropane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
2-Butanone	0.235	0.0100	mg/kg wet	0.2500		94	70-130			
2-Chlorotoluene	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
2-Hexanone	0.209	0.0100	mg/kg wet	0.2500		84	70-130			
4-Chlorotoluene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
4-Isopropyltoluene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
4-Methyl-2-Pentanone	0.196	0.0100	mg/kg wet	0.2500		78	70-130			
Acetone	0.211	0.0100	mg/kg wet	0.2500		84	70-130			
Benzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
Bromobenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
Bromochloromethane	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
Bromodichloromethane	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
Bromoform	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Bromomethane	0.0567	0.0100	mg/kg wet	0.05000		113	70-130			
Carbon Disulfide	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
Carbon Tetrachloride	0.0543	0.0050	mg/kg wet	0.05000		109	70-130			
Chlorobenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
Chloroethane	0.0413	0.0100	mg/kg wet	0.05000		83	70-130			
Chloroform	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Chloromethane	0.0499	0.0100	mg/kg wet	0.05000		100	70-130			
cis-1,2-Dichloroethene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
cis-1,3-Dichloropropene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
Dibromochloromethane	0.0575	0.0020	mg/kg wet	0.05000		115	70-130			
Dibromomethane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
Dichlorodifluoromethane	0.0482	0.0100	mg/kg wet	0.05000		96	70-130			
Diethyl Ether	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Di-isopropyl ether	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Ethyl tertiary-butyl ether	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Ethylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Hexachlorobutadiene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH62338 - 5035**

Isopropylbenzene	0.0533	0.0050	mg/kg wet	0.05000		107	70-130			
Methyl tert-Butyl Ether	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
Methylene Chloride	0.0496	0.0100	mg/kg wet	0.05000		99	70-130			
Naphthalene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
n-Butylbenzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
n-Propylbenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
sec-Butylbenzene	0.0532	0.0050	mg/kg wet	0.05000		106	70-130			
Styrene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130			
tert-Butylbenzene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
Tertiary-amyl methyl ether	0.0401	0.0050	mg/kg wet	0.05000		80	70-130			
Tetrachloroethene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Tetrahydrofuran	0.0374	0.0050	mg/kg wet	0.05000		75	70-130			
Toluene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,2-Dichloroethene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
trans-1,3-Dichloropropene	0.0428	0.0050	mg/kg wet	0.05000		86	70-130			
Trichloroethene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
Trichlorofluoromethane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Vinyl Chloride	0.0557	0.0100	mg/kg wet	0.05000		111	70-130			
Xylene O	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
Xylene P,M	0.107	0.0100	mg/kg wet	0.1000		107	70-130			
Xylenes (Total)	0.160	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0516		mg/kg wet	0.05000		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.0529		mg/kg wet	0.05000		106	70-130			
Surrogate: Dibromofluoromethane	0.0519		mg/kg wet	0.05000		104	70-130			
Surrogate: Toluene-d8	0.0527		mg/kg wet	0.05000		105	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	0.0532	0.0050	mg/kg wet	0.05000		106	70-130	4	25	
1,1,1-Trichloroethane	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	5	25	
1,1,2,2-Tetrachloroethane	0.0481	0.0020	mg/kg wet	0.05000		96	70-130	0.4	25	
1,1,2-Trichloroethane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	0.5	25	
1,1-Dichloroethane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	3	25	
1,1-Dichloroethene	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	2	25	
1,1-Dichloropropene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
1,2,3-Trichlorobenzene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	0.3	25	
1,2,3-Trichloropropane	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	0.3	25	
1,2,4-Trichlorobenzene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	0.5	25	
1,2,4-Trimethylbenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	1	25	
1,2-Dibromo-3-Chloropropane	0.0410	0.0050	mg/kg wet	0.05000		82	70-130	1	25	
1,2-Dibromoethane	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	1	25	
1,2-Dichlorobenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	1	25	
1,2-Dichloroethane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
1,2-Dichloropropane	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	2	25	
1,3,5-Trimethylbenzene	0.0506	0.0050	mg/kg wet	0.05000		101	70-130	2	25	
1,3-Dichlorobenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
1,3-Dichloropropane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	2	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH62338 - 5035**

1,4-Dichlorobenzene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	1	25	
1,4-Dioxane	0.930	0.100	mg/kg wet	1.000		93	70-130	3	20	
2,2-Dichloropropane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
2-Butanone	0.233	0.0100	mg/kg wet	0.2500		93	70-130	0.9	25	
2-Chlorotoluene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
2-Hexanone	0.209	0.0100	mg/kg wet	0.2500		84	70-130	0.2	25	
4-Chlorotoluene	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	1	25	
4-Isopropyltoluene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	3	25	
4-Methyl-2-Pentanone	0.200	0.0100	mg/kg wet	0.2500		80	70-130	2	25	
Acetone	0.210	0.0100	mg/kg wet	0.2500		84	70-130	0.5	25	
Benzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
Bromobenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	2	25	
Bromochloromethane	0.0504	0.0050	mg/kg wet	0.05000		101	70-130	1	25	
Bromodichloromethane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	3	25	
Bromoform	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	1	25	
Bromomethane	0.0552	0.0100	mg/kg wet	0.05000		110	70-130	3	25	
Carbon Disulfide	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
Carbon Tetrachloride	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	6	25	
Chlorobenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
Chloroethane	0.0415	0.0100	mg/kg wet	0.05000		83	70-130	0.4	25	
Chloroform	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	4	25	
Chloromethane	0.0481	0.0100	mg/kg wet	0.05000		96	70-130	4	25	
cis-1,2-Dichloroethene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
cis-1,3-Dichloropropene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	2	25	
Dibromochloromethane	0.0558	0.0020	mg/kg wet	0.05000		112	70-130	3	25	
Dibromomethane	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	3	25	
Dichlorodifluoromethane	0.0452	0.0100	mg/kg wet	0.05000		90	70-130	6	25	
Diethyl Ether	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	0.7	25	
Di-isopropyl ether	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	0.9	25	
Ethyl tertiary-butyl ether	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	0.8	25	
Ethylbenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	4	25	
Hexachlorobutadiene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
Isopropylbenzene	0.0523	0.0050	mg/kg wet	0.05000		105	70-130	2	25	
Methyl tert-Butyl Ether	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	2	25	
Methylene Chloride	0.0484	0.0100	mg/kg wet	0.05000		97	70-130	2	25	
Naphthalene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	3	25	
n-Butylbenzene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
n-Propylbenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
sec-Butylbenzene	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	3	25	
Styrene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
tert-Butylbenzene	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	2	25	
Tertiary-amyl methyl ether	0.0399	0.0050	mg/kg wet	0.05000		80	70-130	0.4	25	
Tetrachloroethene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	5	25	
Tetrahydrofuran	0.0388	0.0050	mg/kg wet	0.05000		78	70-130	4	25	
Toluene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	3	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

**Batch CH62338 - 5035**

trans-1,2-Dichloroethene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
trans-1,3-Dichloropropene	0.0422	0.0050	mg/kg wet	0.05000		84	70-130	2	25	
Trichloroethene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	4	25	
Trichlorofluoromethane	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	5	25	
Vinyl Chloride	0.0524	0.0100	mg/kg wet	0.05000		105	70-130	6	25	
Xylene O	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	3	25	
Xylene P,M	0.103	0.0100	mg/kg wet	0.1000		103	70-130	4	25	
Xylenes (Total)	0.154	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0510		mg/kg wet	0.05000		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0512		mg/kg wet	0.05000		102	70-130			
Surrogate: Dibromofluoromethane	0.0512		mg/kg wet	0.05000		102	70-130			
Surrogate: Toluene-d8	0.0518		mg/kg wet	0.05000		104	70-130			

5035/8260B Volatile Organic Compounds / Methanol

**Batch CH61927 - 5035**

<b>Blank</b>										
1,1,1,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,1-Trichloroethane	ND	0.200	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,2-Trichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethene	ND	0.200	mg/kg wet							
1,1-Dichloropropene	ND	0.200	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,3-Trichloropropane	ND	0.200	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.200	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	1.00	mg/kg wet							
1,2-Dibromoethane	ND	0.200	mg/kg wet							
1,2-Dichlorobenzene	ND	0.200	mg/kg wet							
1,2-Dichloroethane	ND	0.200	mg/kg wet							
1,2-Dichloropropane	ND	0.200	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.200	mg/kg wet							
1,3-Dichlorobenzene	ND	0.200	mg/kg wet							
1,3-Dichloropropane	ND	0.200	mg/kg wet							
1,4-Dichlorobenzene	ND	0.200	mg/kg wet							
1,4-Dioxane - Screen	ND	40.0	mg/kg wet							
2,2-Dichloropropane	ND	0.200	mg/kg wet							
2-Butanone	ND	1.00	mg/kg wet							
2-Chlorotoluene	ND	0.200	mg/kg wet							
2-Hexanone	ND	1.00	mg/kg wet							
4-Chlorotoluene	ND	0.200	mg/kg wet							
4-Isopropyltoluene	ND	0.200	mg/kg wet							
4-Methyl-2-Pentanone	ND	1.00	mg/kg wet							
Acetone	1.15	1.00	mg/kg wet							



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

**Batch CH61927 - 5035**

Benzene	ND	0.200	mg/kg wet							
Bromobenzene	ND	0.200	mg/kg wet							
Bromochloromethane	ND	0.200	mg/kg wet							
Bromodichloromethane	ND	0.200	mg/kg wet							
Bromoform	ND	0.200	mg/kg wet							
Bromomethane	ND	0.200	mg/kg wet							
Carbon Disulfide	ND	0.200	mg/kg wet							
Carbon Tetrachloride	ND	0.200	mg/kg wet							
Chlorobenzene	ND	0.200	mg/kg wet							
Chloroethane	ND	0.200	mg/kg wet							
Chloroform	ND	0.200	mg/kg wet							
Chloromethane	ND	0.200	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.200	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Dibromochloromethane	ND	0.200	mg/kg wet							
Dibromomethane	ND	0.200	mg/kg wet							
Dichlorodifluoromethane	ND	0.200	mg/kg wet							
Diethyl Ether	ND	0.200	mg/kg wet							
Di-isopropyl ether	ND	0.200	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.200	mg/kg wet							
Ethylbenzene	ND	0.200	mg/kg wet							
Hexachlorobutadiene	ND	0.200	mg/kg wet							
Isopropylbenzene	ND	0.200	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.200	mg/kg wet							
Methylene Chloride	ND	0.400	mg/kg wet							
Naphthalene	ND	0.200	mg/kg wet							
n-Butylbenzene	ND	0.200	mg/kg wet							
n-Propylbenzene	ND	0.200	mg/kg wet							
sec-Butylbenzene	ND	0.200	mg/kg wet							
Styrene	ND	0.200	mg/kg wet							
tert-Butylbenzene	ND	0.200	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.200	mg/kg wet							
Tetrachloroethene	ND	0.200	mg/kg wet							
Tetrahydrofuran	ND	1.00	mg/kg wet							
Toluene	ND	0.200	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.200	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Trichloroethene	ND	0.200	mg/kg wet							
Trichlorofluoromethane	ND	0.200	mg/kg wet							
Vinyl Chloride	ND	0.200	mg/kg wet							
Xylene O	ND	0.200	mg/kg wet							
Xylene P,M	ND	0.400	mg/kg wet							
Xylenes (Total)	ND	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	4.49		mg/kg wet	5.000		90	70-130			
Surrogate: 4-Bromofluorobenzene	4.31		mg/kg wet	5.000		86	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

**Batch CH61927 - 5035**

Surrogate: Dibromofluoromethane	4.37		mg/kg wet	5.000		87	70-130			
Surrogate: Toluene-d8	4.20		mg/kg wet	5.000		84	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	1.95	0.200	mg/kg wet	2.000		97	70-130			
1,1,1-Trichloroethane	1.89	0.200	mg/kg wet	2.000		94	70-130			
1,1,2,2-Tetrachloroethane	1.86	0.200	mg/kg wet	2.000		93	70-130			
1,1,2-Trichloroethane	1.65	0.200	mg/kg wet	2.000		83	70-130			
1,1-Dichloroethane	1.81	0.200	mg/kg wet	2.000		91	70-130			
1,1-Dichloroethene	1.69	0.200	mg/kg wet	2.000		85	70-130			
1,1-Dichloropropene	1.80	0.200	mg/kg wet	2.000		90	70-130			
1,2,3-Trichlorobenzene	2.05	0.200	mg/kg wet	2.000		102	70-130			
1,2,3-Trichloropropane	1.94	0.200	mg/kg wet	2.000		97	70-130			
1,2,4-Trichlorobenzene	1.99	0.200	mg/kg wet	2.000		99	70-130			
1,2,4-Trimethylbenzene	1.91	0.200	mg/kg wet	2.000		95	70-130			
1,2-Dibromo-3-Chloropropane	1.63	1.00	mg/kg wet	2.000		82	70-130			
1,2-Dibromoethane	1.94	0.200	mg/kg wet	2.000		97	70-130			
1,2-Dichlorobenzene	2.08	0.200	mg/kg wet	2.000		104	70-130			
1,2-Dichloroethane	1.89	0.200	mg/kg wet	2.000		94	70-130			
1,2-Dichloropropane	1.71	0.200	mg/kg wet	2.000		86	70-130			
1,3,5-Trimethylbenzene	2.01	0.200	mg/kg wet	2.000		100	70-130			
1,3-Dichlorobenzene	2.15	0.200	mg/kg wet	2.000		108	70-130			
1,3-Dichloropropane	1.89	0.200	mg/kg wet	2.000		95	70-130			
1,4-Dichlorobenzene	2.04	0.200	mg/kg wet	2.000		102	70-130			
1,4-Dioxane - Screen	49.8	40.0	mg/kg wet	40.00		125	44-241			
2,2-Dichloropropane	1.75	0.200	mg/kg wet	2.000		88	70-130			
2-Butanone	9.30	1.00	mg/kg wet	10.00		93	70-130			
2-Chlorotoluene	1.95	0.200	mg/kg wet	2.000		98	70-130			
2-Hexanone	9.01	1.00	mg/kg wet	10.00		90	70-130			
4-Chlorotoluene	2.03	0.200	mg/kg wet	2.000		101	70-130			
4-Isopropyltoluene	2.06	0.200	mg/kg wet	2.000		103	70-130			
4-Methyl-2-Pentanone	8.92	1.00	mg/kg wet	10.00		89	70-130			
Acetone	9.23	1.00	mg/kg wet	10.00		92	70-130			
Benzene	1.70	0.200	mg/kg wet	2.000		85	70-130			
Bromobenzene	2.03	0.200	mg/kg wet	2.000		102	70-130			
Bromochloromethane	1.84	0.200	mg/kg wet	2.000		92	70-130			
Bromodichloromethane	1.94	0.200	mg/kg wet	2.000		97	70-130			
Bromoform	2.38	0.200	mg/kg wet	2.000		119	70-130			
Bromomethane	2.62	0.200	mg/kg wet	2.000		131	70-130			B+
Carbon Disulfide	1.96	0.200	mg/kg wet	2.000		98	70-130			
Carbon Tetrachloride	2.12	0.200	mg/kg wet	2.000		106	70-130			
Chlorobenzene	1.98	0.200	mg/kg wet	2.000		99	70-130			
Chloroethane	1.34	0.200	mg/kg wet	2.000		67	70-130			B-
Chloroform	1.78	0.200	mg/kg wet	2.000		89	70-130			
Chloromethane	1.16	0.200	mg/kg wet	2.000		58	70-130			B-



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

**Batch CH61927 - 5035**

cis-1,2-Dichloroethene	1.83	0.200	mg/kg wet	2.000		91	70-130			
cis-1,3-Dichloropropene	1.85	0.200	mg/kg wet	2.000		93	70-130			
Dibromochloromethane	2.03	0.200	mg/kg wet	2.000		102	70-130			
Dibromomethane	1.79	0.200	mg/kg wet	2.000		90	70-130			
Dichlorodifluoromethane	1.77	0.200	mg/kg wet	2.000		88	70-130			
Diethyl Ether	1.27	0.200	mg/kg wet	2.000		63	70-130			B-
Di-isopropyl ether	1.68	0.200	mg/kg wet	2.000		84	70-130			
Ethyl tertiary-butyl ether	1.73	0.200	mg/kg wet	2.000		86	70-130			
Ethylbenzene	1.86	0.200	mg/kg wet	2.000		93	70-130			
Hexachlorobutadiene	1.87	0.200	mg/kg wet	2.000		93	70-130			
Isopropylbenzene	2.07	0.200	mg/kg wet	2.000		104	70-130			
Methyl tert-Butyl Ether	1.74	0.200	mg/kg wet	2.000		87	70-130			
Methylene Chloride	1.73	0.400	mg/kg wet	2.000		87	70-130			
Naphthalene	2.03	0.200	mg/kg wet	2.000		102	70-130			
n-Butylbenzene	1.97	0.200	mg/kg wet	2.000		98	70-130			
n-Propylbenzene	1.94	0.200	mg/kg wet	2.000		97	70-130			
sec-Butylbenzene	2.07	0.200	mg/kg wet	2.000		103	70-130			
Styrene	1.93	0.200	mg/kg wet	2.000		96	70-130			
tert-Butylbenzene	2.18	0.200	mg/kg wet	2.000		109	70-130			
Tertiary-amyl methyl ether	1.77	0.200	mg/kg wet	2.000		88	70-130			
Tetrachloroethene	1.49	0.200	mg/kg wet	2.000		74	70-130			
Tetrahydrofuran	1.80	1.00	mg/kg wet	2.000		90	70-130			
Toluene	1.73	0.200	mg/kg wet	2.000		86	70-130			
trans-1,2-Dichloroethene	1.80	0.200	mg/kg wet	2.000		90	70-130			
trans-1,3-Dichloropropene	1.79	0.200	mg/kg wet	2.000		90	70-130			
Trichloroethene	1.80	0.200	mg/kg wet	2.000		90	70-130			
Trichlorofluoromethane	1.71	0.200	mg/kg wet	2.000		86	70-130			
Vinyl Chloride	1.62	0.200	mg/kg wet	2.000		81	70-130			
Xylene O	1.98	0.200	mg/kg wet	2.000		99	70-130			
Xylene P,M	4.00	0.400	mg/kg wet	4.000		100	70-130			
Xylenes (Total)	5.98	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	4.75		mg/kg wet	5.000		95	70-130			
Surrogate: 4-Bromofluorobenzene	4.82		mg/kg wet	5.000		96	70-130			
Surrogate: Dibromofluoromethane	5.05		mg/kg wet	5.000		101	70-130			
Surrogate: Toluene-d8	4.64		mg/kg wet	5.000		93	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	1.90	0.200	mg/kg wet	2.000		95	70-130	3	25	
1,1,1-Trichloroethane	1.85	0.200	mg/kg wet	2.000		93	70-130	2	25	
1,1,2,2-Tetrachloroethane	1.71	0.200	mg/kg wet	2.000		85	70-130	9	25	
1,1,2-Trichloroethane	1.55	0.200	mg/kg wet	2.000		77	70-130	7	25	
1,1-Dichloroethane	1.69	0.200	mg/kg wet	2.000		84	70-130	7	25	
1,1-Dichloroethene	1.60	0.200	mg/kg wet	2.000		80	70-130	5	25	
1,1-Dichloropropene	1.78	0.200	mg/kg wet	2.000		89	70-130	0.9	25	
1,2,3-Trichlorobenzene	1.92	0.200	mg/kg wet	2.000		96	70-130	6	25	
1,2,3-Trichloropropane	1.91	0.200	mg/kg wet	2.000		96	70-130	1	25	





*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

**Batch CH61927 - 5035**

1,2,4-Trichlorobenzene	1.83	0.200	mg/kg wet	2.000		91	70-130	8	25	
1,2,4-Trimethylbenzene	1.91	0.200	mg/kg wet	2.000		95	70-130	0	25	
1,2-Dibromo-3-Chloropropane	1.74	1.00	mg/kg wet	2.000		87	70-130	6	25	
1,2-Dibromoethane	1.77	0.200	mg/kg wet	2.000		89	70-130	9	25	
1,2-Dichlorobenzene	1.98	0.200	mg/kg wet	2.000		99	70-130	5	25	
1,2-Dichloroethane	1.83	0.200	mg/kg wet	2.000		92	70-130	3	25	
1,2-Dichloropropane	1.64	0.200	mg/kg wet	2.000		82	70-130	4	25	
1,3,5-Trimethylbenzene	1.84	0.200	mg/kg wet	2.000		92	70-130	9	25	
1,3-Dichlorobenzene	2.00	0.200	mg/kg wet	2.000		100	70-130	8	25	
1,3-Dichloropropane	1.84	0.200	mg/kg wet	2.000		92	70-130	3	25	
1,4-Dichlorobenzene	1.96	0.200	mg/kg wet	2.000		98	70-130	4	25	
1,4-Dioxane - Screen	38.0	40.0	mg/kg wet	40.00		95	44-241	27	200	
2,2-Dichloropropane	1.69	0.200	mg/kg wet	2.000		84	70-130	4	25	
2-Butanone	8.22	1.00	mg/kg wet	10.00		82	70-130	12	25	
2-Chlorotoluene	1.90	0.200	mg/kg wet	2.000		95	70-130	2	25	
2-Hexanone	8.47	1.00	mg/kg wet	10.00		85	70-130	6	25	
4-Chlorotoluene	1.89	0.200	mg/kg wet	2.000		94	70-130	7	25	
4-Isopropyltoluene	1.98	0.200	mg/kg wet	2.000		99	70-130	4	25	
4-Methyl-2-Pentanone	7.80	1.00	mg/kg wet	10.00		78	70-130	13	25	
Acetone	8.34	1.00	mg/kg wet	10.00		83	70-130	10	25	
Benzene	1.64	0.200	mg/kg wet	2.000		82	70-130	4	25	
Bromobenzene	2.03	0.200	mg/kg wet	2.000		101	70-130	0.3	25	
Bromochloromethane	1.81	0.200	mg/kg wet	2.000		90	70-130	2	25	
Bromodichloromethane	1.82	0.200	mg/kg wet	2.000		91	70-130	6	25	
Bromoform	2.33	0.200	mg/kg wet	2.000		117	70-130	2	25	
Bromomethane	2.25	0.200	mg/kg wet	2.000		112	70-130	15	25	
Carbon Disulfide	1.82	0.200	mg/kg wet	2.000		91	70-130	8	25	
Carbon Tetrachloride	2.05	0.200	mg/kg wet	2.000		102	70-130	3	25	
Chlorobenzene	1.94	0.200	mg/kg wet	2.000		97	70-130	2	25	
Chloroethane	1.27	0.200	mg/kg wet	2.000		64	70-130	6	25	B-
Chloroform	1.71	0.200	mg/kg wet	2.000		86	70-130	4	25	
Chloromethane	1.11	0.200	mg/kg wet	2.000		55	70-130	5	25	B-
cis-1,2-Dichloroethene	1.63	0.200	mg/kg wet	2.000		82	70-130	11	25	
cis-1,3-Dichloropropene	1.78	0.200	mg/kg wet	2.000		89	70-130	4	25	
Dibromochloromethane	1.93	0.200	mg/kg wet	2.000		96	70-130	5	25	
Dibromomethane	1.66	0.200	mg/kg wet	2.000		83	70-130	8	25	
Dichlorodifluoromethane	1.69	0.200	mg/kg wet	2.000		84	70-130	5	25	
Diethyl Ether	1.11	0.200	mg/kg wet	2.000		55	70-130	13	25	B-
Di-isopropyl ether	1.62	0.200	mg/kg wet	2.000		81	70-130	4	25	
Ethyl tertiary-butyl ether	1.69	0.200	mg/kg wet	2.000		84	70-130	3	25	
Ethylbenzene	1.81	0.200	mg/kg wet	2.000		90	70-130	3	25	
Hexachlorobutadiene	1.74	0.200	mg/kg wet	2.000		87	70-130	7	25	
Isopropylbenzene	1.93	0.200	mg/kg wet	2.000		97	70-130	7	25	
Methyl tert-Butyl Ether	1.57	0.200	mg/kg wet	2.000		78	70-130	11	25	
Methylene Chloride	1.59	0.400	mg/kg wet	2.000		79	70-130	9	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

**Batch CH61927 - 5035**

Naphthalene	1.79	0.200	mg/kg wet	2.000		90	70-130	13	25	
n-Butylbenzene	1.83	0.200	mg/kg wet	2.000		92	70-130	7	25	
n-Propylbenzene	1.85	0.200	mg/kg wet	2.000		92	70-130	5	25	
sec-Butylbenzene	1.91	0.200	mg/kg wet	2.000		96	70-130	8	25	
Styrene	1.87	0.200	mg/kg wet	2.000		94	70-130	3	25	
tert-Butylbenzene	1.96	0.200	mg/kg wet	2.000		98	70-130	11	25	
Tertiary-amyl methyl ether	1.66	0.200	mg/kg wet	2.000		83	70-130	7	25	
Tetrachloroethene	1.47	0.200	mg/kg wet	2.000		73	70-130	1	25	
Tetrahydrofuran	1.44	1.00	mg/kg wet	2.000		72	70-130	22	25	
Toluene	1.65	0.200	mg/kg wet	2.000		82	70-130	5	25	
trans-1,2-Dichloroethene	1.74	0.200	mg/kg wet	2.000		87	70-130	4	25	
trans-1,3-Dichloropropene	1.69	0.200	mg/kg wet	2.000		84	70-130	6	25	
Trichloroethene	1.63	0.200	mg/kg wet	2.000		81	70-130	10	25	
Trichlorofluoromethane	1.54	0.200	mg/kg wet	2.000		77	70-130	10	25	
Vinyl Chloride	1.42	0.200	mg/kg wet	2.000		71	70-130	13	25	
Xylene O	1.95	0.200	mg/kg wet	2.000		98	70-130	1	25	
Xylene P,M	3.96	0.400	mg/kg wet	4.000		99	70-130	1	25	
Xylenes (Total)	5.91	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	4.80		mg/kg wet	5.000		96	70-130			
Surrogate: 4-Bromofluorobenzene	4.94		mg/kg wet	5.000		99	70-130			
Surrogate: Dibromofluoromethane	4.90		mg/kg wet	5.000		98	70-130			
Surrogate: Toluene-d8	4.78		mg/kg wet	5.000		96	70-130			

8082A Polychlorinated Biphenyls (PCB)

**Batch CH61703 - 3540C**

<b>Blank</b>										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	0.0186		mg/kg wet	0.02500		74	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0185		mg/kg wet	0.02500		74	30-150			
Surrogate: Tetrachloro-m-xylene	0.0182		mg/kg wet	0.02500		73	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0191		mg/kg wet	0.02500		76	30-150			
<b>LCS</b>										
Aroclor 1016	0.437	0.0500	mg/kg wet	0.5000		87	40-140			
Aroclor 1260	0.435	0.0500	mg/kg wet	0.5000		87	40-140			
Surrogate: Decachlorobiphenyl	0.0192		mg/kg wet	0.02500		77	30-150			



CERTIFICATE OF ANALYSIS

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

**Batch CH61703 - 3540C**

Surrogate: Decachlorobiphenyl [2C]	0.0193		mg/kg wet	0.02500		77	30-150			
Surrogate: Tetrachloro-m-xylene	0.0191		mg/kg wet	0.02500		76	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0187		mg/kg wet	0.02500		75	30-150			

**LCS Dup**

Aroclor 1016	0.484	0.0500	mg/kg wet	0.5000		97	40-140	10	30	
Aroclor 1260	0.482	0.0500	mg/kg wet	0.5000		96	40-140	10	30	

Surrogate: Decachlorobiphenyl	0.0212		mg/kg wet	0.02500		85	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0213		mg/kg wet	0.02500		85	30-150			
Surrogate: Tetrachloro-m-xylene	0.0211		mg/kg wet	0.02500		84	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0206		mg/kg wet	0.02500		82	30-150			

8100M Total Petroleum Hydrocarbons

**Batch CH61613 - 3546**

**Blank**

Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Hexatriacontane (C36)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	10.0	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							

Surrogate: O-Terphenyl	4.55		mg/kg wet	5.000		91	40-140			
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**LCS**

Decane (C10)	1.7	0.2	mg/kg wet	2.500		69	40-140			
Docosane (C22)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Dodecane (C12)	1.7	0.2	mg/kg wet	2.500		67	40-140			
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Hexadecane (C16)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Hexatriacontane (C36)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Nonadecane (C19)	2.2	0.2	mg/kg wet	2.500		87	40-140			
Nonane (C9)	1.4	0.2	mg/kg wet	2.500		58	30-140			
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		90	40-140			
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		82	40-140			



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8100M Total Petroleum Hydrocarbons**

**Batch CH61613 - 3546**

Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Tetradecane (C14)	1.9	0.2	mg/kg wet	2.500		77	40-140			
Total Petroleum Hydrocarbons	28.7	10.0	mg/kg wet	35.00		82	40-140			
Triacontane (C30)	2.2	0.2	mg/kg wet	2.500		87	40-140			

<i>Surrogate: O-Terphenyl</i>	<i>4.39</i>		mg/kg wet	<i>5.000</i>		<i>88</i>	<i>40-140</i>			
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**LCS Dup**

Decane (C10)	1.9	0.2	mg/kg wet	2.500		76	40-140	10	25	
Docosane (C22)	2.2	0.2	mg/kg wet	2.500		87	40-140	0.8	25	
Dodecane (C12)	1.7	0.2	mg/kg wet	2.500		68	40-140	0.4	25	
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		86	40-140	1	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		86	40-140	2	25	
Hexadecane (C16)	2.1	0.2	mg/kg wet	2.500		86	40-140	3	25	
Hexatriacontane (C36)	2.1	0.2	mg/kg wet	2.500		83	40-140	2	25	
Nonadecane (C19)	2.2	0.2	mg/kg wet	2.500		88	40-140	1	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		65	30-140	12	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		86	40-140	4	25	
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		83	40-140	1	25	
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		87	40-140	1	25	
Tetradecane (C14)	2.0	0.2	mg/kg wet	2.500		81	40-140	5	25	
Total Petroleum Hydrocarbons	28.8	10.0	mg/kg wet	35.00		82	40-140	0.6	25	
Triacontane (C30)	2.1	0.2	mg/kg wet	2.500		85	40-140	2	25	

<i>Surrogate: O-Terphenyl</i>	<i>4.38</i>		mg/kg wet	<i>5.000</i>		<i>88</i>	<i>40-140</i>			
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**8270D Semi-Volatile Organic Compounds**

**Batch CH61614 - 3546**

**Blank**

1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							



CERTIFICATE OF ANALYSIS

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

**Batch CH61614 - 3546**

3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	1.67	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.333	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.51		mg/kg wet	3.333		75	30-130			
Surrogate: 2,4,6-Tribromophenol	4.44		mg/kg wet	5.000		89	30-130			
Surrogate: 2-Chlorophenol-d4	4.18		mg/kg wet	5.000		84	30-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

**Batch CH61614 - 3546**

Surrogate: 2-Fluorobiphenyl	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: 2-Fluorophenol	4.33		mg/kg wet	5.000		87	30-130			
Surrogate: Nitrobenzene-d5	2.87		mg/kg wet	3.333		86	30-130			
Surrogate: Phenol-d6	4.52		mg/kg wet	5.000		90	30-130			
Surrogate: p-Terphenyl-d14	2.81		mg/kg wet	3.333		84	30-130			

**LCS**

1,2,4-Trichlorobenzene	2.44	0.333	mg/kg wet	3.333		73	40-140			
1,2-Dichlorobenzene	2.44	0.333	mg/kg wet	3.333		73	40-140			
1,3-Dichlorobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140			
1,4-Dichlorobenzene	2.40	0.333	mg/kg wet	3.333		72	40-140			
2,4,5-Trichlorophenol	2.79	0.333	mg/kg wet	3.333		84	30-130			
2,4,6-Trichlorophenol	2.73	0.333	mg/kg wet	3.333		82	30-130			
2,4-Dichlorophenol	2.57	0.333	mg/kg wet	3.333		77	30-130			
2,4-Dimethylphenol	2.75	0.333	mg/kg wet	3.333		82	30-130			
2,4-Dinitrophenol	2.29	1.67	mg/kg wet	3.333		69	30-130			
2,4-Dinitrotoluene	2.64	0.333	mg/kg wet	3.333		79	40-140			
2,6-Dinitrotoluene	2.50	0.333	mg/kg wet	3.333		75	40-140			
2-Chloronaphthalene	2.27	0.333	mg/kg wet	3.333		68	40-140			
2-Chlorophenol	2.48	0.333	mg/kg wet	3.333		74	30-130			
2-Methylnaphthalene	2.38	0.333	mg/kg wet	3.333		72	40-140			
2-Methylphenol	2.56	0.333	mg/kg wet	3.333		77	30-130			
2-Nitrophenol	2.67	0.333	mg/kg wet	3.333		80	30-130			
3,3'-Dichlorobenzidine	2.81	0.667	mg/kg wet	3.333		84	40-140			
3+4-Methylphenol	5.25	0.667	mg/kg wet	6.667		79	30-130			
4-Bromophenyl-phenylether	2.77	0.333	mg/kg wet	3.333		83	40-140			
4-Chloroaniline	2.14	0.667	mg/kg wet	3.333		64	40-140			
4-Nitrophenol	2.48	1.67	mg/kg wet	3.333		74	30-130			
Acenaphthene	2.46	0.333	mg/kg wet	3.333		74	40-140			
Acenaphthylene	2.41	0.333	mg/kg wet	3.333		72	40-140			
Acetophenone	2.54	0.667	mg/kg wet	3.333		76	40-140			
Aniline	1.85	1.67	mg/kg wet	3.333		56	40-140			
Anthracene	2.64	0.333	mg/kg wet	3.333		79	40-140			
Azobenzene	2.99	0.333	mg/kg wet	3.333		90	40-140			
Benzo(a)anthracene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Benzo(a)pyrene	2.83	0.167	mg/kg wet	3.333		85	40-140			
Benzo(b)fluoranthene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Benzo(g,h,i)perylene	2.92	0.333	mg/kg wet	3.333		88	40-140			
Benzo(k)fluoranthene	2.84	0.333	mg/kg wet	3.333		85	40-140			
bis(2-Chloroethoxy)methane	2.58	0.333	mg/kg wet	3.333		77	40-140			
bis(2-Chloroethyl)ether	2.63	0.333	mg/kg wet	3.333		79	40-140			
bis(2-chloroisopropyl)Ether	2.51	0.333	mg/kg wet	3.333		75	40-140			
bis(2-Ethylhexyl)phthalate	3.07	0.333	mg/kg wet	3.333		92	40-140			
Butylbenzylphthalate	2.96	0.333	mg/kg wet	3.333		89	40-140			
Chrysene	2.53	0.167	mg/kg wet	3.333		76	40-140			
Dibenzo(a,h)Anthracene	2.92	0.167	mg/kg wet	3.333		88	40-140			



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

**Batch CH61614 - 3546**

Dibenzofuran	2.36	0.333	mg/kg wet	3.333		71	40-140			
Diethylphthalate	2.87	0.333	mg/kg wet	3.333		86	40-140			
Dimethylphthalate	2.66	0.333	mg/kg wet	3.333		80	40-140			
Di-n-butylphthalate	3.26	0.333	mg/kg wet	3.333		98	40-140			
Di-n-octylphthalate	3.17	0.333	mg/kg wet	3.333		95	40-140			
Fluoranthene	2.63	0.333	mg/kg wet	3.333		79	40-140			
Fluorene	2.49	0.333	mg/kg wet	3.333		75	40-140			
Hexachlorobenzene	2.53	0.333	mg/kg wet	3.333		76	40-140			
Hexachlorobutadiene	2.37	0.333	mg/kg wet	3.333		71	40-140			
Hexachloroethane	2.39	0.333	mg/kg wet	3.333		72	40-140			
Indeno(1,2,3-cd)Pyrene	2.90	0.333	mg/kg wet	3.333		87	40-140			
Isophorone	2.51	0.333	mg/kg wet	3.333		75	40-140			
Naphthalene	2.50	0.333	mg/kg wet	3.333		75	40-140			
Nitrobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140			
N-Nitrosodimethylamine	2.37	0.333	mg/kg wet	3.333		71	40-140			
Pentachlorophenol	2.76	1.67	mg/kg wet	3.333		83	30-130			
Phenanthrene	2.57	0.333	mg/kg wet	3.333		77	40-140			
Phenol	2.60	0.333	mg/kg wet	3.333		78	30-130			
Pyrene	3.00	0.333	mg/kg wet	3.333		90	40-140			
Pyridine	1.97	1.67	mg/kg wet	3.333		59	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.36		mg/kg wet	3.333		71	30-130			
Surrogate: 2,4,6-Tribromophenol	4.10		mg/kg wet	5.000		82	30-130			
Surrogate: 2-Chlorophenol-d4	3.97		mg/kg wet	5.000		79	30-130			
Surrogate: 2-Fluorobiphenyl	2.48		mg/kg wet	3.333		74	30-130			
Surrogate: 2-Fluorophenol	3.96		mg/kg wet	5.000		79	30-130			
Surrogate: Nitrobenzene-d5	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: Phenol-d6	4.13		mg/kg wet	5.000		83	30-130			
Surrogate: p-Terphenyl-d14	3.06		mg/kg wet	3.333		92	30-130			

**LCS Dup**

1,2,4-Trichlorobenzene	2.26	0.333	mg/kg wet	3.333		68	40-140	8	30	
1,2-Dichlorobenzene	2.25	0.333	mg/kg wet	3.333		67	40-140	8	30	
1,3-Dichlorobenzene	2.22	0.333	mg/kg wet	3.333		67	40-140	9	30	
1,4-Dichlorobenzene	2.19	0.333	mg/kg wet	3.333		66	40-140	9	30	
2,4,5-Trichlorophenol	2.67	0.333	mg/kg wet	3.333		80	30-130	4	30	
2,4,6-Trichlorophenol	2.56	0.333	mg/kg wet	3.333		77	30-130	6	30	
2,4-Dichlorophenol	2.38	0.333	mg/kg wet	3.333		71	30-130	8	30	
2,4-Dimethylphenol	2.57	0.333	mg/kg wet	3.333		77	30-130	7	30	
2,4-Dinitrophenol	2.44	1.67	mg/kg wet	3.333		73	30-130	6	30	
2,4-Dinitrotoluene	2.70	0.333	mg/kg wet	3.333		81	40-140	2	30	
2,6-Dinitrotoluene	2.44	0.333	mg/kg wet	3.333		73	40-140	3	30	
2-Chloronaphthalene	2.14	0.333	mg/kg wet	3.333		64	40-140	6	30	
2-Chlorophenol	2.31	0.333	mg/kg wet	3.333		69	30-130	7	30	
2-Methylnaphthalene	2.19	0.333	mg/kg wet	3.333		66	40-140	8	30	
2-Methylphenol	2.39	0.333	mg/kg wet	3.333		72	30-130	7	30	
2-Nitrophenol	2.47	0.333	mg/kg wet	3.333		74	30-130	8	30	



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

**Batch CH61614 - 3546**

3,3'-Dichlorobenzidine	2.93	0.667	mg/kg wet	3.333		88	40-140	4	30	
3+4-Methylphenol	4.84	0.667	mg/kg wet	6.667		73	30-130	8	30	
4-Bromophenyl-phenylether	2.64	0.333	mg/kg wet	3.333		79	40-140	5	30	
4-Chloroaniline	2.08	0.667	mg/kg wet	3.333		63	40-140	3	30	
4-Nitrophenol	2.67	1.67	mg/kg wet	3.333		80	30-130	7	30	
Acenaphthene	2.34	0.333	mg/kg wet	3.333		70	40-140	5	30	
Acenaphthylene	2.29	0.333	mg/kg wet	3.333		69	40-140	6	30	
Acetophenone	2.36	0.667	mg/kg wet	3.333		71	40-140	7	30	
Aniline	1.74	1.67	mg/kg wet	3.333		52	40-140	6	30	
Anthracene	2.67	0.333	mg/kg wet	3.333		80	40-140	1	30	
Azobenzene	2.79	0.333	mg/kg wet	3.333		84	40-140	7	30	
Benzo(a)anthracene	2.74	0.333	mg/kg wet	3.333		82	40-140	0.2	30	
Benzo(a)pyrene	2.84	0.167	mg/kg wet	3.333		85	40-140	0.5	30	
Benzo(b)fluoranthene	2.80	0.333	mg/kg wet	3.333		84	40-140	1	30	
Benzo(g,h,i)perylene	2.91	0.333	mg/kg wet	3.333		87	40-140	0.3	30	
Benzo(k)fluoranthene	2.86	0.333	mg/kg wet	3.333		86	40-140	0.8	30	
bis(2-Chloroethoxy)methane	2.39	0.333	mg/kg wet	3.333		72	40-140	8	30	
bis(2-Chloroethyl)ether	2.44	0.333	mg/kg wet	3.333		73	40-140	7	30	
bis(2-chloroisopropyl)Ether	2.37	0.333	mg/kg wet	3.333		71	40-140	5	30	
bis(2-Ethylhexyl)phthalate	3.01	0.333	mg/kg wet	3.333		90	40-140	2	30	
Butylbenzylphthalate	2.93	0.333	mg/kg wet	3.333		88	40-140	1	30	
Chrysene	2.51	0.167	mg/kg wet	3.333		75	40-140	1	30	
Dibenzo(a,h)Anthracene	2.93	0.167	mg/kg wet	3.333		88	40-140	0.2	30	
Dibenzofuran	2.29	0.333	mg/kg wet	3.333		69	40-140	3	30	
Diethylphthalate	2.84	0.333	mg/kg wet	3.333		85	40-140	0.8	30	
Dimethylphthalate	2.57	0.333	mg/kg wet	3.333		77	40-140	4	30	
Di-n-butylphthalate	3.36	0.333	mg/kg wet	3.333		101	40-140	3	30	
Di-n-octylphthalate	3.16	0.333	mg/kg wet	3.333		95	40-140	0.2	30	
Fluoranthene	2.84	0.333	mg/kg wet	3.333		85	40-140	8	30	
Fluorene	2.39	0.333	mg/kg wet	3.333		72	40-140	4	30	
Hexachlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	3	30	
Hexachlorobutadiene	2.19	0.333	mg/kg wet	3.333		66	40-140	8	30	
Hexachloroethane	2.24	0.333	mg/kg wet	3.333		67	40-140	7	30	
Indeno(1,2,3-cd)Pyrene	2.90	0.333	mg/kg wet	3.333		87	40-140	0.02	30	
Isophorone	2.33	0.333	mg/kg wet	3.333		70	40-140	7	30	
Naphthalene	2.32	0.333	mg/kg wet	3.333		70	40-140	7	30	
Nitrobenzene	2.38	0.333	mg/kg wet	3.333		71	40-140	8	30	
N-Nitrosodimethylamine	2.15	0.333	mg/kg wet	3.333		65	40-140	10	30	
Pentachlorophenol	2.76	1.67	mg/kg wet	3.333		83	30-130	0.2	30	
Phenanthrene	2.59	0.333	mg/kg wet	3.333		78	40-140	0.8	30	
Phenol	2.43	0.333	mg/kg wet	3.333		73	30-130	7	30	
Pyrene	2.90	0.333	mg/kg wet	3.333		87	40-140	3	30	
Pyridine	1.80	1.67	mg/kg wet	3.333		54	40-140	9	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.11		mg/kg wet	3.333		63	30-130			
Surrogate: 2,4,6-Tribromophenol	3.84		mg/kg wet	5.000		77	30-130			





CERTIFICATE OF ANALYSIS

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

**Batch CH61614 - 3546**

Surrogate: 2-Chlorophenol-d4	3.57		mg/kg wet	5.000		71	30-130			
Surrogate: 2-Fluorobiphenyl	2.26		mg/kg wet	3.333		68	30-130			
Surrogate: 2-Fluorophenol	3.55		mg/kg wet	5.000		71	30-130			
Surrogate: Nitrobenzene-d5	2.32		mg/kg wet	3.333		70	30-130			
Surrogate: Phenol-d6	3.71		mg/kg wet	5.000		74	30-130			
Surrogate: p-Terphenyl-d14	2.86		mg/kg wet	3.333		86	30-130			

**Batch CH61708 - 3546**

**Blank**

1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	1.67	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

**Batch CH61708 - 3546**

Butylbenzylphthalate	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.333	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.33		mg/kg wet	6.667		35	30-130			
Surrogate: 2,4,6-Tribromophenol	3.73		mg/kg wet	10.00		37	30-130			
Surrogate: 2-Chlorophenol-d4	3.75		mg/kg wet	10.00		38	30-130			
Surrogate: 2-Fluorobiphenyl	2.45		mg/kg wet	6.667		37	30-130			
Surrogate: 2-Fluorophenol	3.75		mg/kg wet	10.00		38	30-130			
Surrogate: Nitrobenzene-d5	2.67		mg/kg wet	6.667		40	30-130			
Surrogate: Phenol-d6	4.12		mg/kg wet	10.00		41	30-130			
Surrogate: p-Terphenyl-d14	2.74		mg/kg wet	6.667		41	30-130			

**LCS**

1,2,4-Trichlorobenzene	2.51	0.333	mg/kg wet	3.333		75	40-140			
1,2-Dichlorobenzene	2.67	0.333	mg/kg wet	3.333		80	40-140			
1,3-Dichlorobenzene	2.67	0.333	mg/kg wet	3.333		80	40-140			
1,4-Dichlorobenzene	2.62	0.333	mg/kg wet	3.333		79	40-140			
2,4,5-Trichlorophenol	2.69	0.333	mg/kg wet	3.333		81	30-130			
2,4,6-Trichlorophenol	2.58	0.333	mg/kg wet	3.333		77	30-130			
2,4-Dichlorophenol	2.59	0.333	mg/kg wet	3.333		78	30-130			
2,4-Dimethylphenol	2.66	0.333	mg/kg wet	3.333		80	30-130			
2,4-Dinitrophenol	1.66	1.67	mg/kg wet	3.333		50	30-130			
2,4-Dinitrotoluene	2.94	0.333	mg/kg wet	3.333		88	40-140			
2,6-Dinitrotoluene	2.65	0.333	mg/kg wet	3.333		79	40-140			
2-Chloronaphthalene	2.21	0.333	mg/kg wet	3.333		66	40-140			
2-Chlorophenol	2.54	0.333	mg/kg wet	3.333		76	30-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

**Batch CH61708 - 3546**

2-Methylnaphthalene	2.39	0.333	mg/kg wet	3.333		72	40-140			
2-Methylphenol	2.58	0.333	mg/kg wet	3.333		78	30-130			
2-Nitrophenol	2.66	0.333	mg/kg wet	3.333		80	30-130			
3,3'-Dichlorobenzidine	2.86	0.667	mg/kg wet	3.333		86	40-140			
3+4-Methylphenol	5.18	0.667	mg/kg wet	6.667		78	30-130			
4-Bromophenyl-phenylether	2.61	0.333	mg/kg wet	3.333		78	40-140			
4-Chloroaniline	2.19	0.667	mg/kg wet	3.333		66	40-140			
4-Nitrophenol	2.78	1.67	mg/kg wet	3.333		83	30-130			
Acenaphthene	2.52	0.333	mg/kg wet	3.333		76	40-140			
Acenaphthylene	2.43	0.333	mg/kg wet	3.333		73	40-140			
Acetophenone	2.60	0.667	mg/kg wet	3.333		78	40-140			
Aniline	2.42	1.67	mg/kg wet	3.333		73	40-140			
Anthracene	2.59	0.333	mg/kg wet	3.333		78	40-140			
Azobenzene	2.62	0.333	mg/kg wet	3.333		79	40-140			
Benzo(a)anthracene	2.61	0.333	mg/kg wet	3.333		78	40-140			
Benzo(a)pyrene	2.66	0.167	mg/kg wet	3.333		80	40-140			
Benzo(b)fluoranthene	2.58	0.333	mg/kg wet	3.333		77	40-140			
Benzo(g,h,i)perylene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Benzo(k)fluoranthene	2.61	0.333	mg/kg wet	3.333		78	40-140			
bis(2-Chloroethoxy)methane	2.44	0.333	mg/kg wet	3.333		73	40-140			
bis(2-Chloroethyl)ether	2.61	0.333	mg/kg wet	3.333		78	40-140			
bis(2-chloroisopropyl)Ether	2.56	0.333	mg/kg wet	3.333		77	40-140			
bis(2-Ethylhexyl)phthalate	2.62	0.333	mg/kg wet	3.333		79	40-140			
Butylbenzylphthalate	2.89	0.333	mg/kg wet	3.333		87	40-140			
Chrysene	2.45	0.167	mg/kg wet	3.333		74	40-140			
Dibenzo(a,h)Anthracene	3.04	0.167	mg/kg wet	3.333		91	40-140			
Dibenzofuran	2.48	0.333	mg/kg wet	3.333		74	40-140			
Diethylphthalate	2.87	0.333	mg/kg wet	3.333		86	40-140			
Dimethylphthalate	2.69	0.333	mg/kg wet	3.333		81	40-140			
Di-n-butylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140			
Di-n-octylphthalate	2.35	0.333	mg/kg wet	3.333		70	40-140			
Fluoranthene	2.82	0.333	mg/kg wet	3.333		84	40-140			
Fluorene	2.48	0.333	mg/kg wet	3.333		74	40-140			
Hexachlorobenzene	2.42	0.333	mg/kg wet	3.333		73	40-140			
Hexachlorobutadiene	2.53	0.333	mg/kg wet	3.333		76	40-140			
Hexachloroethane	2.65	0.333	mg/kg wet	3.333		80	40-140			
Indeno(1,2,3-cd)Pyrene	3.02	0.333	mg/kg wet	3.333		91	40-140			
Isophorone	2.55	0.333	mg/kg wet	3.333		76	40-140			
Naphthalene	2.57	0.333	mg/kg wet	3.333		77	40-140			
Nitrobenzene	2.78	0.333	mg/kg wet	3.333		84	40-140			
N-Nitrosodimethylamine	3.50	0.333	mg/kg wet	3.333		105	40-140			
Pentachlorophenol	1.65	1.67	mg/kg wet	3.333		50	30-130			
Phenanthrene	2.53	0.333	mg/kg wet	3.333		76	40-140			
Phenol	2.74	0.333	mg/kg wet	3.333		82	30-130			
Pyrene	2.61	0.333	mg/kg wet	3.333		78	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

**Batch CH61708 - 3546**

Pyridine	3.37	1.67	mg/kg wet	3.333		101	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.83		mg/kg wet	6.667		42	30-130			
Surrogate: 2,4,6-Tribromophenol	4.32		mg/kg wet	10.00		43	30-130			
Surrogate: 2-Chlorophenol-d4	4.44		mg/kg wet	10.00		44	30-130			
Surrogate: 2-Fluorobiphenyl	2.71		mg/kg wet	6.667		41	30-130			
Surrogate: 2-Fluorophenol	4.47		mg/kg wet	10.00		45	30-130			
Surrogate: Nitrobenzene-d5	3.00		mg/kg wet	6.667		45	30-130			
Surrogate: Phenol-d6	4.58		mg/kg wet	10.00		46	30-130			
Surrogate: p-Terphenyl-d14	3.00		mg/kg wet	6.667		45	30-130			

**LCS Dup**

1,2,4-Trichlorobenzene	2.46	0.333	mg/kg wet	3.333		74	40-140	2	30	
1,2-Dichlorobenzene	2.42	0.333	mg/kg wet	3.333		73	40-140	10	30	
1,3-Dichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	12	30	
1,4-Dichlorobenzene	2.39	0.333	mg/kg wet	3.333		72	40-140	9	30	
2,4,5-Trichlorophenol	2.75	0.333	mg/kg wet	3.333		82	30-130	2	30	
2,4,6-Trichlorophenol	2.51	0.333	mg/kg wet	3.333		75	30-130	3	30	
2,4-Dichlorophenol	2.50	0.333	mg/kg wet	3.333		75	30-130	4	30	
2,4-Dimethylphenol	2.62	0.333	mg/kg wet	3.333		79	30-130	1	30	
2,4-Dinitrophenol	1.80	1.67	mg/kg wet	3.333		54	30-130	8	30	
2,4-Dinitrotoluene	3.07	0.333	mg/kg wet	3.333		92	40-140	4	30	
2,6-Dinitrotoluene	2.69	0.333	mg/kg wet	3.333		81	40-140	2	30	
2-Chloronaphthalene	2.26	0.333	mg/kg wet	3.333		68	40-140	3	30	
2-Chlorophenol	2.37	0.333	mg/kg wet	3.333		71	30-130	7	30	
2-Methylnaphthalene	2.36	0.333	mg/kg wet	3.333		71	40-140	1	30	
2-Methylphenol	2.40	0.333	mg/kg wet	3.333		72	30-130	8	30	
2-Nitrophenol	2.72	0.333	mg/kg wet	3.333		82	30-130	2	30	
3,3'-Dichlorobenzidine	3.20	0.667	mg/kg wet	3.333		96	40-140	11	30	
3+4-Methylphenol	4.79	0.667	mg/kg wet	6.667		72	30-130	8	30	
4-Bromophenyl-phenylether	2.76	0.333	mg/kg wet	3.333		83	40-140	5	30	
4-Chloroaniline	2.33	0.667	mg/kg wet	3.333		70	40-140	6	30	
4-Nitrophenol	2.81	1.67	mg/kg wet	3.333		84	30-130	1	30	
Acenaphthene	2.49	0.333	mg/kg wet	3.333		75	40-140	1	30	
Acenaphthylene	2.39	0.333	mg/kg wet	3.333		72	40-140	1	30	
Acetophenone	2.38	0.667	mg/kg wet	3.333		71	40-140	9	30	
Aniline	2.29	1.67	mg/kg wet	3.333		69	40-140	6	30	
Anthracene	2.63	0.333	mg/kg wet	3.333		79	40-140	1	30	
Azobenzene	2.76	0.333	mg/kg wet	3.333		83	40-140	5	30	
Benzo(a)anthracene	2.74	0.333	mg/kg wet	3.333		82	40-140	5	30	
Benzo(a)pyrene	2.84	0.167	mg/kg wet	3.333		85	40-140	6	30	
Benzo(b)fluoranthene	2.68	0.333	mg/kg wet	3.333		80	40-140	4	30	
Benzo(g,h,i)perylene	2.89	0.333	mg/kg wet	3.333		87	40-140	0.3	30	
Benzo(k)fluoranthene	2.85	0.333	mg/kg wet	3.333		85	40-140	9	30	
bis(2-Chloroethoxy)methane	2.39	0.333	mg/kg wet	3.333		72	40-140	2	30	
bis(2-Chloroethyl)ether	2.44	0.333	mg/kg wet	3.333		73	40-140	7	30	
bis(2-chloroisopropyl)Ether	2.46	0.333	mg/kg wet	3.333		74	40-140	4	30	



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

**Batch CH61708 - 3546**

bis(2-Ethylhexyl)phthalate	2.67	0.333	mg/kg wet	3.333		80	40-140	2	30	
Butylbenzylphthalate	2.95	0.333	mg/kg wet	3.333		89	40-140	2	30	
Chrysene	2.50	0.167	mg/kg wet	3.333		75	40-140	2	30	
Dibenzo(a,h)Anthracene	3.00	0.167	mg/kg wet	3.333		90	40-140	2	30	
Dibenzofuran	2.51	0.333	mg/kg wet	3.333		75	40-140	1	30	
Diethylphthalate	2.97	0.333	mg/kg wet	3.333		89	40-140	4	30	
Dimethylphthalate	2.79	0.333	mg/kg wet	3.333		84	40-140	4	30	
Di-n-butylphthalate	3.22	0.333	mg/kg wet	3.333		97	40-140	5	30	
Di-n-octylphthalate	2.71	0.333	mg/kg wet	3.333		81	40-140	14	30	
Fluoranthene	2.92	0.333	mg/kg wet	3.333		88	40-140	4	30	
Fluorene	2.54	0.333	mg/kg wet	3.333		76	40-140	2	30	
Hexachlorobenzene	2.53	0.333	mg/kg wet	3.333		76	40-140	4	30	
Hexachlorobutadiene	2.38	0.333	mg/kg wet	3.333		71	40-140	6	30	
Hexachloroethane	2.41	0.333	mg/kg wet	3.333		72	40-140	10	30	
Indeno(1,2,3-cd)Pyrene	2.99	0.333	mg/kg wet	3.333		90	40-140	0.8	30	
Isophorone	2.48	0.333	mg/kg wet	3.333		74	40-140	3	30	
Naphthalene	2.50	0.333	mg/kg wet	3.333		75	40-140	3	30	
Nitrobenzene	2.74	0.333	mg/kg wet	3.333		82	40-140	2	30	
N-Nitrosodimethylamine	3.17	0.333	mg/kg wet	3.333		95	40-140	10	30	
Pentachlorophenol	1.70	1.67	mg/kg wet	3.333		51	30-130	3	30	
Phenanthrene	2.58	0.333	mg/kg wet	3.333		78	40-140	2	30	
Phenol	2.65	0.333	mg/kg wet	3.333		80	30-130	3	30	
Pyrene	2.51	0.333	mg/kg wet	3.333		75	40-140	4	30	
Pyridine	2.89	1.67	mg/kg wet	3.333		87	40-140	15	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.38		mg/kg wet	6.667		36	30-130			
Surrogate: 2,4,6-Tribromophenol	4.34		mg/kg wet	10.00		43	30-130			
Surrogate: 2-Chlorophenol-d4	3.91		mg/kg wet	10.00		39	30-130			
Surrogate: 2-Fluorobiphenyl	2.52		mg/kg wet	6.667		38	30-130			
Surrogate: 2-Fluorophenol	3.99		mg/kg wet	10.00		40	30-130			
Surrogate: Nitrobenzene-d5	2.86		mg/kg wet	6.667		43	30-130			
Surrogate: Phenol-d6	4.11		mg/kg wet	10.00		41	30-130			
Surrogate: p-Terphenyl-d14	2.81		mg/kg wet	6.667		42	30-130			

Classical Chemistry

**Batch CH61725 - General Preparation**

**Blank**

Conductivity	ND	5	umhos/cm							
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**LCS**

Conductivity	1360		umhos/cm	1411	97	90-110				
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**Batch CH61726 - General Preparation**

**Blank**

Reactive Cyanide	ND	2.0	mg/kg							
Reactive Sulfide	ND	2.0	mg/kg							

**LCS**



CERTIFICATE OF ANALYSIS

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Classical Chemistry

**Batch CH61726 - General Preparation**

Reactive Cyanide	3.9	2.0	mg/kg	100.3		4	0.68-5.41			
Reactive Sulfide	0.2	2.0	mg/kg	10.00		2	0-44			

**Batch CH61817 - General Preparation**

**Reference**

Flashpoint	80		°F	81.00		98	97.9-102.1			
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**Batch CH61823 - General Preparation**

**Blank**

Reactive Cyanide	ND	2.0	mg/kg							
Reactive Sulfide	ND	2.0	mg/kg							

**LCS**

Reactive Cyanide	3.8	2.0	mg/kg	100.3		4	0.68-5.41			
Reactive Sulfide	0.2	2.0	mg/kg	10.00		2	0-44			

MADEP-VPH Volatile Petroleum Hydrocarbon

**Batch CH61925 - 5035**

**Blank**

1,2,4-Trimethylbenzene	ND	0.20	mg/kg wet							
2,2,4-Trimethylpentane	ND	5.00	mg/kg wet							
2-Methylpentane	ND	5.00	mg/kg wet							
Benzene	ND	0.20	mg/kg wet							
C5-C8 Aliphatics1,2	ND	10.0	mg/kg wet							
C5-C8 Unadjusted Aliphatics	ND	10.0	mg/kg wet							
C9-C10 Aromatics	ND	10.0	mg/kg wet							
C9-C12 Aliphatics2,3	ND	10.0	mg/kg wet							
C9-C12 Unadjusted Aliphatics	ND	10.0	mg/kg wet							
Ethylbenzene	ND	0.20	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.05	mg/kg wet							
Naphthalene	ND	0.20	mg/kg wet							
n-Butylcyclohexane	ND	5.00	mg/kg wet							
n-Decane	ND	5.00	mg/kg wet							
Nonane (C9)	ND	5.00	mg/kg wet							
Pentane	ND	5.00	mg/kg wet							
Toluene	ND	0.20	mg/kg wet							
Xylene O	ND	0.20	mg/kg wet							
Xylene P,M	ND	0.40	mg/kg wet							

Surrogate: 2,5-Dibromotoluene - FID	5.46		mg/kg wet	5.000		109	70-130			
Surrogate: 2,5-Dibromotoluene - PID	5.44		mg/kg wet	5.000		109	70-130			
Surrogate: Trifluorotoluene - FID	5.02		mg/kg wet	5.333		94	70-130			
Surrogate: Trifluorotoluene - PID	4.81		mg/kg wet	5.333		90	70-130			

**LCS**

1,2,4-Trimethylbenzene	9.97	0.20	mg/kg wet	10.00		100	70-130			
2,2,4-Trimethylpentane	17.5	5.00	mg/kg wet	15.00		117	70-130			
2-Methylpentane	19.1	5.00	mg/kg wet	15.00		127	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**MADEP-VPH Volatile Petroleum Hydrocarbon**

**Batch CH61925 - 5035**

Benzene	5.44	0.20	mg/kg wet	5.000		109	70-130			
C5-C8 Aliphatics1,2	8.21	10.0	mg/kg wet							
C5-C8 Unadjusted Aliphatics	45.5	10.0	mg/kg wet	40.00		114	70-130			
C9-C10 Aromatics	9.09	10.0	mg/kg wet	10.00		91	70-130			
C9-C12 Aliphatics2,3	ND	10.0	mg/kg wet							
C9-C12 Unadjusted Aliphatics	33.1	10.0	mg/kg wet	30.00		110	70-130			
Ethylbenzene	5.31	0.20	mg/kg wet	5.000		106	70-130			
Methyl tert-Butyl Ether	16.2	0.05	mg/kg wet	15.00		108	70-130			
Naphthalene	10.8	0.20	mg/kg wet	10.00		108	70-130			
n-Butylcyclohexane	10.3	5.00	mg/kg wet	10.00		103	70-130			
n-Decane	11.8	5.00	mg/kg wet	10.00		118	70-130			
Nonane (C9)	11.1	5.00	mg/kg wet	10.00		111	30-130			
Pentane	14.2	5.00	mg/kg wet	10.00		142	70-130			B+
Toluene	15.7	0.20	mg/kg wet	15.00		104	70-130			
Xylene O	10.1	0.20	mg/kg wet	10.00		101	70-130			
Xylene P,M	20.7	0.40	mg/kg wet	20.00		103	70-130			
<hr/>										
Surrogate: 2,5-Dibromotoluene - FID	5.96		mg/kg wet	5.000		119	70-130			
Surrogate: 2,5-Dibromotoluene - PID	5.84		mg/kg wet	5.000		117	70-130			
Surrogate: Trifluorotoluene - FID	5.57		mg/kg wet	5.333		104	70-130			
Surrogate: Trifluorotoluene - PID	5.36		mg/kg wet	5.333		101	70-130			

**LCS Dup**

1,2,4-Trimethylbenzene	9.67	0.20	mg/kg wet	10.00		97	70-130	3	25	
2,2,4-Trimethylpentane	15.8	5.00	mg/kg wet	15.00		105	70-130	11	25	
2-Methylpentane	16.9	5.00	mg/kg wet	15.00		112	70-130	12	25	
Benzene	5.09	0.20	mg/kg wet	5.000		102	70-130	7	25	
C5-C8 Aliphatics1,2	ND	10.0	mg/kg wet							
C5-C8 Unadjusted Aliphatics	41.3	10.0	mg/kg wet	40.00		103	70-130	10	25	
C9-C10 Aromatics	8.60	10.0	mg/kg wet	10.00		86	70-130	6	25	
C9-C12 Aliphatics2,3	ND	10.0	mg/kg wet							
C9-C12 Unadjusted Aliphatics	28.0	10.0	mg/kg wet	30.00		93	70-130	17	25	
Ethylbenzene	5.04	0.20	mg/kg wet	5.000		101	70-130	5	25	
Methyl tert-Butyl Ether	15.5	0.05	mg/kg wet	15.00		103	70-130	4	25	
Naphthalene	11.1	0.20	mg/kg wet	10.00		111	70-130	3	25	
n-Butylcyclohexane	9.16	5.00	mg/kg wet	10.00		92	70-130	12	25	
n-Decane	10.0	5.00	mg/kg wet	10.00		100	70-130	17	25	
Nonane (C9)	9.66	5.00	mg/kg wet	10.00		97	30-130	14	25	
Pentane	11.9	5.00	mg/kg wet	10.00		119	70-130	17	25	
Toluene	14.7	0.20	mg/kg wet	15.00		98	70-130	6	25	
Xylene O	9.69	0.20	mg/kg wet	10.00		97	70-130	4	25	
Xylene P,M	19.6	0.40	mg/kg wet	20.00		98	70-130	5	25	
<hr/>										
Surrogate: 2,5-Dibromotoluene - FID	5.97		mg/kg wet	5.000		119	70-130			
Surrogate: 2,5-Dibromotoluene - PID	5.94		mg/kg wet	5.000		119	70-130			
Surrogate: Trifluorotoluene - FID	4.67		mg/kg wet	5.333		87	70-130			
Surrogate: Trifluorotoluene - PID	4.42		mg/kg wet	5.333		83	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**Notes and Definitions**

- Z-10a Soil pH measured in water at 22.8 °C.
- Z-10 Soil pH measured in water at 22.7 °C.
- Z-04 MeOH - covered
- WL Results obtained from a deionized water leach of the sample.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- E Reported above the quantitation limit; Estimated value (E).
- D Diluted.
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- B+ Blank Spike recovery is above upper control limit (B+).
- B- Blank Spike recovery is below lower control limit (B-).
- > Greater than.
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report





*CERTIFICATE OF ANALYSIS*

Client Name: Tg2 Solutions  
Client Project ID: Swansea 2345

ESS Laboratory Work Order: 1608422

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/find/labs/analytical/ESS.pdf>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

[http://www.ct.gov/dph/lib/dph/environmental\\_health/environmental\\_laboratories/pdf/OutOfStateCommercialLaboratories.pdf](http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf)

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002

<http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

[http://datamine2.state.nj.us/DEP\\_OPRA/OpraMain/pi\\_main?mode=pi\\_by\\_site&sort\\_order=PI\\_NAMEA&Select+a+Site:=58715](http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715)

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

[http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory\\_accreditation\\_program/590095](http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095)

## ESS Laboratory Sample and Cooler Receipt Checklist

Client: Tg2 TB/HDM  
 Shipped/Delivered Via: Client

ESS Project ID: 1608422  
 Date Received: 8/16/2016  
 Project Due Date: 8/23/2016  
 Days for Project: 5 Day

- |   |  |
|---|--|
| 1. Air bill manifest present? <input type="checkbox"/> No<br>Air No.: <u>NA</u><br>2. Were custody seals present? <input type="checkbox"/> No<br>3. Is radiation count <100 CPM? <input type="checkbox"/> Yes<br>4. Is a Cooler Present? <input type="checkbox"/> Yes<br>Temp: <u>25.5</u> Iced with: <u>Ice</u><br>5. Was COC signed and dated by client? <input type="checkbox"/> Yes | 6. Does COC match bottles? <input type="checkbox"/> Yes<br>7. Is COC complete and correct? <input type="checkbox"/> Yes<br>8. Were samples received intact? <input type="checkbox"/> Yes<br>9. Were labs informed about short holds & rushes? <input checked="" type="checkbox"/> Yes / No / NA<br>10. Were any analyses received outside of hold time? Yes / <input checked="" type="checkbox"/> No |
|---|--|

- |   |  |
|---|--|
| 11. Any Subcontracting needed? Yes / <input checked="" type="checkbox"/> No<br>ESS Sample IDs: _____<br>Analysis: _____<br>TAT: _____ | 12. Were VOAs received? <input checked="" type="checkbox"/> Yes / No<br>a. Air bubbles in aqueous VOAs? <input type="checkbox"/> Yes / No<br>b. Does methanol cover soil completely? <input checked="" type="checkbox"/> Yes / No / NA |
|---|--|

13. Are the samples properly preserved?  Yes / No
- a. If metals preserved upon receipt: Date: \_\_\_\_\_ Time: \_\_\_\_\_ By: \_\_\_\_\_
- b. Low Level VOAs brought to freezer: Date: 8/16/16 Time: 1330 By: JL

Sample Receiving Notes:

14. Was there a need to contact Project Manager?  Yes /  No JL 8/16/16
- a. Was there a need to contact the client? Yes / No
- Who was contacted? \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ By: \_\_\_\_\_

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	61349	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	61350	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	61351	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	61367	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	61373	Yes	NA	Yes	VOA Vial - Other	other	
01	61374	Yes	NA	Yes	VOA Vial - Other	other	
02	61352	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	61353	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	61354	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	61355	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	61356	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	61357	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	61368	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
05	61369	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
05	61375	Yes	NA	Yes	VOA Vial - Other	other	
05	61376	Yes	NA	Yes	VOA Vial - Other	other	
05	61377	Yes	NA	Yes	VOA Vial - Other	other	
05	61378	Yes	NA	Yes	VOA Vial - Other	other	
06	61358	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
06	61359	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
06	61360	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
06	61372	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
06	61383	Yes	NA	Yes	VOA Vial - Other	other	

## ESS Laboratory Sample and Cooler Receipt Checklist

Client: Tg2 TB/HDM

ESS Project ID: 1608422

Date Received: 8/16/2016

06	61384	Yes	NA	Yes	VOA Vial - Other	other
07	61361	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	61362	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	61363	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	61371	Yes	NA	Yes	VOA Vial - Methanol	MeOH
07	61381	Yes	NA	Yes	VOA Vial - Other	other
07	61382	Yes	NA	Yes	VOA Vial - Other	other
08	61364	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	61365	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	61366	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	61370	Yes	NA	Yes	VOA Vial - Methanol	MeOH
08	61379	Yes	NA	Yes	VOA Vial - Other	other
08	61380	Yes	NA	Yes	VOA Vial - Other	other

**2nd Review**

Are barcode labels on correct containers?

Yes / No

Completed

By: [Signature]

Date & Time: 8/16/16 1153

Reviewed

By: [Signature]

Date & Time: 8/16/16 1330

Delivered

By: [Signature]

8/16/16 1330

1330

# ESS Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston, RI 02910-2211  
 Tel. (401) 461-7181 Fax (401) 461-4486  
 www.esslaboratory.com

## CHAIN OF CUSTODY

ESS Lab #

1608422

Turn Time Standard Other 5-Day

Reporting Limits - Man-MCP-S-1

Regulatory State MA RI CT NH NJ NY ME Other \_\_\_\_\_

Is this project for any of the following: (please circle)

MA-MCP Navy USACE CT DEP Other \_\_\_\_\_

Electronic Deliverables Excel Access PDF

Co. Name <u>T2 Solutions, LLC</u>		Project # <u>Colbea-Swansea</u>		Project Name <u>Swansea 2345</u>	
Contact Person <u>Eric Simpson</u>		Address <u>2345 G.A.R. Highway</u>			
City <u>Needham</u>		State <u>MA</u>		Zip <u>02474</u>	
Tel. <u>508-298-8686</u>		Fax		email: <u>esimpson@t2solutions.com</u>	

Analysis	TPH	SVOCs, PCBs, VOCs	PCRA-8, PH	Flush Cond	C/S Residues	VPH

ESS Lab ID	Date	Collection Time	Grab-G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Val of Container	TPH	SVOCs, PCBs, VOCs	PCRA-8, PH	Flush Cond	C/S Residues	VPH
1	<u>8/16/16</u>	<u>8:30</u>	<u>C</u>	<u>Soil</u>	<u>UST Area-1</u>	<u>6</u>	<u>6</u>	<u>Amber J0A</u>	<u>9oz + J0A</u>	X	X	X	X	X	
2		<u>8:30</u>	<u>C</u>		<u>UST-Area-2</u>	<u>6</u>	<u>1</u>			X					
3		<u>8:30</u>	<u>C</u>		<u>UST-Area-3</u>	<u>6</u>	<u>1</u>			X					
4		<u>8:30</u>	<u>C</u>		<u>UST-Area-4</u>	<u>6</u>	<u>1</u>			X					
5		<u>8:55</u>	<u>C</u>		<u>Building-Area-1</u>	<u>6</u>	<u>9</u>			X	X	X	X	X	X
6		<u>8:55</u>	<u>C</u>		<u>Building-Area-2</u>	<u>6</u>	<u>6</u>			X	X	X	X	X	
7		<u>9:30</u>	<u>C</u>		<u>Disp-Area-1</u>	<u>6</u>	<u>6</u>			X	X	X	X	X	
8		<u>9:30</u>	<u>C</u>		<u>Disp-Area-2</u>	<u>6</u>	<u>6</u>			X	X	X	X	X	

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present  Yes  No Internal Use Only

Seals Intact  Yes  No NA:  [ ] Pickup

Cooler Temperature: 25.5°C w  Technician \_\_\_\_\_

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-\_\_\_\_\_

Sampled by: ES/RV

Comments: pls run TCLP on metals if totals exceed.

Relinquished by: (Signature, Date & Time) <u>[Signature]</u> <u>8/16/16</u> <u>10:30</u>	Received by: (Signature, Date & Time) <u>[Signature]</u> <u>8/16/16</u> <u>1040</u>	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)

\* By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

1 (White) Lab Copy  
2 (Yellow) Client Receipt

February 27, 2017

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 4th Quarter 2016  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and March 18, 2014 and most recently renewed on September 9, 2014. On September 20, 2015 the BUDA expired.

This report covers activities conducted during the period of October 1, 2016 to December 31, 2016.

### **Construction Activities**

Construction activities during this reporting period consisted of:

- The delivery and management of newly accepted final capping soil; and
- Erosion control activities.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. The required laboratory analysis data for the soil reported on the table was provided in the 3<sup>rd</sup> quarter report.

**Complaints**

No complaints were received directly by APE during this reporting period.

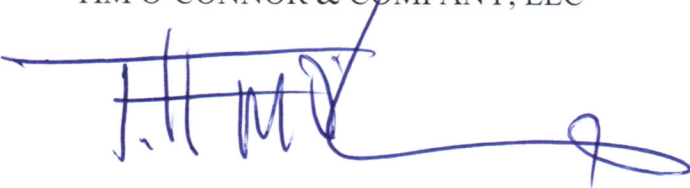
**Schedule**

The APE project team estimates that approximately 18,000 cubic yards will be required to complete the capping project. It is important to note that due to settlement and compaction, the final volume of capping soil required to cap the landfill is driven by existing conditions and the elevations in the approved final site grading plan and will not be determined until the project is very close to meeting the elevations in the grading plan.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely

TIM O'CONNOR & COMPANY, LLC

A handwritten signature in blue ink, appearing to read 'T.M. O'Connor', with a long horizontal flourish extending to the right.

Timothy M. O'Connor, PE, LEED-AP  
Principal

**Former Portsmouth Landfill Soils Accepted  
4th Quarter 2016**

<b>Delivery Dates</b>	<b>Source</b>	<b>Consultant</b>	<b>Quantity (tons)</b>
November 30, 2016	2345 Grand Army Highway, Swansea, MA	EST Associates, Inc.	478.25
<b>Notes</b>		Total	478.25

# Appendix A – Photographs





**Photo 1 – Along Park Avenue Looking East**



**Photo 2 – Along Eastern Limit of Disturbance Looking South**



**Photo 3 – Along Eastern Limit of Disturbance Looking North**



**Photo 4 – Along Northern Limit of Disturbance**



**Photo 5 – Western Limit of Disturbance**



**Photo 6 – Central Portion of Site**

May 20, 2017

Mr. Mark Dennen  
Principal Environmental Scientist  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

Re: Quarterly Report – 1st Quarter 2017  
Former Portsmouth Landfill

Dear: Mr. Dennen:

This Quarterly Report is submitted on behalf of AP Enterprise, LLC (APE) regarding the Portsmouth Landfill (the Property) per the Beneficial Use Determination Approval (BUDA) which was issued by the Rhode Island Department of Environmental Management (RIDEM) on September 20, 2010, amended on March 11, 2011 and March 18, 2014 and most recently renewed on September 9, 2014. On September 20, 2015 the BUDA expired.

This report covers activities conducted during the period of January 1 to March 31, 2017.

### **Construction Activities**

Construction activities during this reporting period consisted of:

- The delivery and management of newly accepted final capping soil; and
- Erosion control activities.

Photos of the Property are attached as Appendix A.

### **Soil Accepted**

The attached table summarizes the soils delivered to the Property during this reporting period. The supporting laboratory analysis data reports for the soil reported on the table is provided electronically on the enclosed disk. Please note that the data package also contains data for soil that was not taken to the landfill. In order identify the data for the soil accepted at Portsmouth, a table developed by the generator's consultant is included with the data package.

### **Complaints**

No complaints were received directly by APE during this reporting period. RIDEM reported that a complaint was received by their office regarding concerns about erosion. RIDEM conducted a site walkover with Arthur Palmer of AP Enterprise. It was observed that drainage patterns on the site surface were observed in an area that had not yet received the required two feet of final cap soil. The drainage was not leaving the site and was collecting behind the perimeter berm which was designed and constructed to retain storm water on site.

### **Schedule**

The APE project team estimates that approximately 14,000 cubic yards will be required to complete the capping project. It is important to note that due to settlement and compaction, the final volume of capping soil required to cap the landfill is driven by existing conditions and the elevations in the approved final site grading plan and will not be determined until the project is very close to meeting the elevations in the grading plan.

### **Monitoring**

APE submitted their proposed site monitoring plan on March 3, 2017 and RIDEM approved the plan on March 28, 2017.

Please feel free to contact me should you have any questions regarding this matter.

Sincerely  
TIM O'CONNOR & COMPANY, LLC



Timothy M. O'Connor, PE, LEED-AP  
Principal

**Former Portsmouth Landfill Soils Accepted  
1st Quarter 2017**

Delivery Dates	Source	Consultant	Quantity (tons)
March 16 - 27	Route 18 Bridge, New Bedford, MA	Green Environmental	5,846.47
<b>Notes</b>	Total		5,846.47

# Appendix A – Photographs



**Photo 1 – Along Park Avenue Looking East**



**Photo 2 – Along Eastern Limit of Disturbance Looking North**





**Photo 3 – Along Eastern Limit of Disturbance Looking North**



**Photo 4 – Along Northern Limit of Disturbance**



**Photo 5 – Western Limit of Disturbance**



**Photo 6 – Western Limit of Disturbance**

# **Appendix B – Analytical Data**

(on disk)

## **Appendix B – Analytical Data**

(all data for this period was previously submitted)



## ANALYTICAL REPORT

Lab Number:	L1427785
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	11/24/14

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), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

---

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



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1427785-01	D-23S	SOIL	BOSTON, MA	11/18/14 13:15	11/18/14
L1427785-02	D-23 30-42 CLAY	SOIL	BOSTON, MA	11/18/14 13:15	11/18/14

Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

### Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1427785-01, did not meet the method required minimum response factor on the lowest calibration standard for acetone (0.07793), 2-butanone (0.07590) and trichloroethene (0.19010), as well as the average response factor for acetone and 2-butanone. The initial calibration verification is outside acceptance criteria for dichlorodifluoromethane (151%), but within overall method criteria. The continuing calibration standard, associated with L1427785-01, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

##### Metals

L1427785-02 has an elevated detection limit for cadmium due to the dilution required by matrix interferences encountered during analysis.

In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question I:

All samples were analyzed for a subset of MCP elements per the Chain of Custody.

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: 11/24/14

# ORGANICS

# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

Lab ID: L1427785-01  
 Client ID: D-23S  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 11/20/14 17:03  
 Analyst: BN  
 Percent Solids: 75%

Date Collected: 11/18/14 13:15  
 Date Received: 11/18/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	20	--	1
1,1-Dichloroethane	ND		ug/kg	3.0	--	1
Chloroform	ND		ug/kg	3.0	--	1
Carbon tetrachloride	ND		ug/kg	2.0	--	1
1,2-Dichloropropane	ND		ug/kg	7.1	--	1
Dibromochloromethane	ND		ug/kg	2.0	--	1
1,1,2-Trichloroethane	ND		ug/kg	3.0	--	1
Tetrachloroethene	ND		ug/kg	2.0	--	1
Chlorobenzene	ND		ug/kg	2.0	--	1
Trichlorofluoromethane	ND		ug/kg	8.1	--	1
1,2-Dichloroethane	ND		ug/kg	2.0	--	1
1,1,1-Trichloroethane	ND		ug/kg	2.0	--	1
Bromodichloromethane	ND		ug/kg	2.0	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.0	--	1
cis-1,3-Dichloropropene	ND		ug/kg	2.0	--	1
1,3-Dichloropropene, Total	ND		ug/kg	2.0	--	1
1,1-Dichloropropene	ND		ug/kg	8.1	--	1
Bromoform	ND		ug/kg	8.1	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	2.0	--	1
Benzene	ND		ug/kg	2.0	--	1
Toluene	ND		ug/kg	3.0	--	1
Ethylbenzene	ND		ug/kg	2.0	--	1
Chloromethane	ND		ug/kg	8.1	--	1
Bromomethane	ND		ug/kg	4.0	--	1
Vinyl chloride	ND		ug/kg	4.0	--	1
Chloroethane	ND		ug/kg	4.0	--	1
1,1-Dichloroethene	ND		ug/kg	2.0	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.0	--	1
Trichloroethene	ND		ug/kg	2.0	--	1
1,2-Dichlorobenzene	ND		ug/kg	8.1	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

## SAMPLE RESULTS

Lab ID: L1427785-01  
 Client ID: D-23S  
 Sample Location: BOSTON, MA

Date Collected: 11/18/14 13:15  
 Date Received: 11/18/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	8.1	--	1
1,4-Dichlorobenzene	ND		ug/kg	8.1	--	1
Methyl tert butyl ether	ND		ug/kg	4.0	--	1
p/m-Xylene	ND		ug/kg	4.0	--	1
o-Xylene	ND		ug/kg	4.0	--	1
Xylenes, Total	ND		ug/kg	4.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.0	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.0	--	1
Dibromomethane	ND		ug/kg	8.1	--	1
1,2,3-Trichloropropane	ND		ug/kg	8.1	--	1
Styrene	ND		ug/kg	4.0	--	1
Dichlorodifluoromethane	ND		ug/kg	20	--	1
Acetone	ND		ug/kg	73	--	1
Carbon disulfide	ND		ug/kg	8.1	--	1
Methyl ethyl ketone	ND		ug/kg	20	--	1
Methyl isobutyl ketone	ND		ug/kg	20	--	1
2-Hexanone	ND		ug/kg	20	--	1
Bromochloromethane	ND		ug/kg	8.1	--	1
Tetrahydrofuran	ND		ug/kg	8.1	--	1
2,2-Dichloropropane	ND		ug/kg	10	--	1
1,2-Dibromoethane	ND		ug/kg	8.1	--	1
1,3-Dichloropropane	ND		ug/kg	8.1	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	2.0	--	1
Bromobenzene	ND		ug/kg	10	--	1
n-Butylbenzene	ND		ug/kg	2.0	--	1
sec-Butylbenzene	ND		ug/kg	2.0	--	1
tert-Butylbenzene	ND		ug/kg	8.1	--	1
o-Chlorotoluene	ND		ug/kg	8.1	--	1
p-Chlorotoluene	ND		ug/kg	8.1	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	8.1	--	1
Hexachlorobutadiene	ND		ug/kg	8.1	--	1
Isopropylbenzene	ND		ug/kg	2.0	--	1
p-Isopropyltoluene	ND		ug/kg	2.0	--	1
Naphthalene	ND		ug/kg	8.1	--	1
n-Propylbenzene	ND		ug/kg	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	8.1	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	8.1	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	8.1	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	8.1	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

Lab ID: L1427785-01  
 Client ID: D-23S  
 Sample Location: BOSTON, MA

Date Collected: 11/18/14 13:15  
 Date Received: 11/18/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	10	--	1
Diisopropyl Ether	ND		ug/kg	8.1	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	8.1	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	8.1	--	1
1,4-Dioxane	ND		ug/kg	81	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	108		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 11/20/14 08:41  
**Analyst:** BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG742702-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 11/20/14 08:41  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG742702-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 11/20/14 08:41  
**Analyst:** BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG742702-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	103		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG742702-1 WG742702-2								
Methylene chloride	111		106		70-130	5		20
1,1-Dichloroethane	115		110		70-130	4		20
Chloroform	116		114		70-130	2		20
Carbon tetrachloride	121		111		70-130	9		20
1,2-Dichloropropane	112		111		70-130	1		20
Dibromochloromethane	101		102		70-130	1		20
1,1,2-Trichloroethane	99		100		70-130	1		20
Tetrachloroethene	105		100		70-130	5		20
Chlorobenzene	98		98		70-130	0		20
Trichlorofluoromethane	110		103		70-130	7		20
1,2-Dichloroethane	114		114		70-130	0		20
1,1,1-Trichloroethane	116		109		70-130	6		20
Bromodichloromethane	114		112		70-130	2		20
trans-1,3-Dichloropropene	100		102		70-130	2		20
cis-1,3-Dichloropropene	114		113		70-130	1		20
1,1-Dichloropropene	116		108		70-130	7		20
Bromoform	90		92		70-130	2		20
1,1,2,2-Tetrachloroethane	88		90		70-130	2		20
Benzene	111		107		70-130	4		20
Toluene	99		95		70-130	4		20
Ethylbenzene	98		95		70-130	3		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG742702-1 WG742702-2								
Chloromethane	116		112		70-130	4		20
Bromomethane	120		115		70-130	4		20
Vinyl chloride	117		105		70-130	11		20
Chloroethane	124		118		70-130	5		20
1,1-Dichloroethene	118		110		70-130	7		20
trans-1,2-Dichloroethene	113		108		70-130	5		20
Trichloroethene	112		106		70-130	6		20
1,2-Dichlorobenzene	91		91		70-130	0		20
1,3-Dichlorobenzene	92		92		70-130	0		20
1,4-Dichlorobenzene	92		91		70-130	1		20
Methyl tert butyl ether	111		112		70-130	1		20
p/m-Xylene	100		96		70-130	4		20
o-Xylene	98		96		70-130	2		20
cis-1,2-Dichloroethene	115		111		70-130	4		20
Dibromomethane	118		117		70-130	1		20
1,2,3-Trichloropropane	89		90		70-130	1		20
Styrene	86		85		70-130	1		20
Dichlorodifluoromethane	112		101		70-130	10		20
Acetone	109		104		70-130	5		20
Carbon disulfide	108		101		70-130	7		20
Methyl ethyl ketone	104		102		70-130	2		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG742702-1 WG742702-2								
Methyl isobutyl ketone	97		95		70-130	2		20
2-Hexanone	84		84		70-130	0		20
Bromochloromethane	118		119		70-130	1		20
Tetrahydrofuran	110		103		70-130	7		20
2,2-Dichloropropane	119		112		70-130	6		20
1,2-Dibromoethane	102		102		70-130	0		20
1,3-Dichloropropane	99		100		70-130	1		20
1,1,1,2-Tetrachloroethane	98		100		70-130	2		20
Bromobenzene	92		93		70-130	1		20
n-Butylbenzene	92		89		70-130	3		20
sec-Butylbenzene	92		89		70-130	3		20
tert-Butylbenzene	91		90		70-130	1		20
o-Chlorotoluene	97		74		70-130	27	Q	20
p-Chlorotoluene	92		91		70-130	1		20
1,2-Dibromo-3-chloropropane	88		90		70-130	2		20
Hexachlorobutadiene	98		95		70-130	3		20
Isopropylbenzene	90		87		70-130	3		20
p-Isopropyltoluene	93		90		70-130	3		20
Naphthalene	89		91		70-130	2		20
n-Propylbenzene	90		87		70-130	3		20
1,2,3-Trichlorobenzene	96		98		70-130	2		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG742702-1 WG742702-2								
1,2,4-Trichlorobenzene	97		97		70-130	0		20
1,3,5-Trimethylbenzene	92		90		70-130	2		20
1,2,4-Trimethylbenzene	93		92		70-130	1		20
Diethyl ether	130		130		70-130	0		20
Diisopropyl Ether	111		110		70-130	1		20
Ethyl-Tert-Butyl-Ether	109		109		70-130	0		20
Tertiary-Amyl Methyl Ether	111		110		70-130	1		20
1,4-Dioxane	98		100		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		97		70-130
Toluene-d8	94		94		70-130
4-Bromofluorobenzene	98		99		70-130
Dibromofluoromethane	102		103		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

Lab ID: L1427785-02  
 Client ID: D-23 30-42 CLAY  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 11/21/14 01:08  
 Analyst: JC  
 Percent Solids: 75%

Date Collected: 11/18/14 13:15  
 Date Received: 11/18/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/19/14 17:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	220	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	200	--	1
2-Chloronaphthalene	ND		ug/kg	220	--	1
1,2-Dichlorobenzene	ND		ug/kg	220	--	1
1,3-Dichlorobenzene	ND		ug/kg	220	--	1
1,4-Dichlorobenzene	ND		ug/kg	220	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	220	--	1
2,4-Dinitrotoluene	ND		ug/kg	220	--	1
2,6-Dinitrotoluene	ND		ug/kg	220	--	1
Azobenzene	ND		ug/kg	220	--	1
Fluoranthene	ND		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	220	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	260	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	240	--	1
Hexachlorobutadiene	ND		ug/kg	220	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	200	--	1
Naphthalene	ND		ug/kg	220	--	1
Nitrobenzene	ND		ug/kg	200	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	220	--	1
Butyl benzyl phthalate	ND		ug/kg	220	--	1
Di-n-butylphthalate	ND		ug/kg	220	--	1
Di-n-octylphthalate	ND		ug/kg	220	--	1
Diethyl phthalate	ND		ug/kg	220	--	1
Dimethyl phthalate	ND		ug/kg	220	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

**Lab ID:** L1427785-02  
**Client ID:** D-23 30-42 CLAY  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/18/14 13:15  
**Date Received:** 11/18/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	220	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	130	--	1
Aniline	ND		ug/kg	260	--	1
4-Chloroaniline	ND		ug/kg	220	--	1
Dibenzofuran	ND		ug/kg	220	--	1
2-Methylnaphthalene	ND		ug/kg	260	--	1
Acetophenone	ND		ug/kg	220	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	220	--	1
2,4-Dichlorophenol	ND		ug/kg	200	--	1
2,4-Dimethylphenol	ND		ug/kg	220	--	1
2-Nitrophenol	ND		ug/kg	470	--	1
4-Nitrophenol	ND		ug/kg	300	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	440	--	1
Phenol	ND		ug/kg	220	--	1
2-Methylphenol	ND		ug/kg	220	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	310	--	1
2,4,5-Trichlorophenol	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	39		30-130
Phenol-d6	38		30-130
Nitrobenzene-d5	36		30-130
2-Fluorobiphenyl	39		30-130
2,4,6-Tribromophenol	37		30-130
4-Terphenyl-d14	38		30-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/20/14 18:25  
**Analyst:** JC

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/19/14 17:29

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02 Batch: WG742096-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	99	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	99	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/20/14 18:25  
**Analyst:** JC

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/19/14 17:29

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02 Batch: WG742096-1					
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	99	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	99	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	360	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	790	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 97,8270D  
 Analytical Date: 11/20/14 18:25  
 Analyst: JC

Extraction Method: EPA 3546  
 Extraction Date: 11/19/14 17:29

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02 Batch: WG742096-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	87		30-130
Phenol-d6	87		30-130
Nitrobenzene-d5	85		30-130
2-Fluorobiphenyl	90		30-130
2,4,6-Tribromophenol	88		30-130
4-Terphenyl-d14	90		30-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG742096-2 WG742096-3								
Acenaphthene	55		55		40-140	0		30
1,2,4-Trichlorobenzene	59		60		40-140	2		30
Hexachlorobenzene	54		52		40-140	4		30
Bis(2-chloroethyl)ether	54		52		40-140	4		30
2-Chloronaphthalene	61		59		40-140	3		30
1,2-Dichlorobenzene	58		57		40-140	2		30
1,3-Dichlorobenzene	55		56		40-140	2		30
1,4-Dichlorobenzene	56		57		40-140	2		30
3,3'-Dichlorobenzidine	47		45		40-140	4		30
2,4-Dinitrotoluene	55		55		40-140	0		30
2,6-Dinitrotoluene	60		57		40-140	5		30
Azobenzene	61		60		40-140	2		30
Fluoranthene	55		55		40-140	0		30
4-Bromophenyl phenyl ether	56		56		40-140	0		30
Bis(2-chloroisopropyl)ether	60		58		40-140	3		30
Bis(2-chloroethoxy)methane	58		54		40-140	7		30
Hexachlorobutadiene	56		58		40-140	4		30
Hexachloroethane	53		53		40-140	0		30
Isophorone	59		55		40-140	7		30
Naphthalene	54		55		40-140	2		30
Nitrobenzene	57		57		40-140	0		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG742096-2 WG742096-3								
Bis(2-Ethylhexyl)phthalate	54		55		40-140	2		30
Butyl benzyl phthalate	49		51		40-140	4		30
Di-n-butylphthalate	56		57		40-140	2		30
Di-n-octylphthalate	51		53		40-140	4		30
Diethyl phthalate	58		56		40-140	4		30
Dimethyl phthalate	58		57		40-140	2		30
Benzo(a)anthracene	57		57		40-140	0		30
Benzo(a)pyrene	58		58		40-140	0		30
Benzo(b)fluoranthene	58		59		40-140	2		30
Benzo(k)fluoranthene	57		56		40-140	2		30
Chrysene	53		54		40-140	2		30
Acenaphthylene	60		58		40-140	3		30
Anthracene	57		57		40-140	0		30
Benzo(ghi)perylene	52		54		40-140	4		30
Fluorene	57		56		40-140	2		30
Phenanthrene	58		58		40-140	0		30
Dibenzo(a,h)anthracene	55		57		40-140	4		30
Indeno(1,2,3-cd)Pyrene	55		58		40-140	5		30
Pyrene	53		54		40-140	2		30
Aniline	40		37	Q	40-140	8		30
4-Chloroaniline	60		58		40-140	3		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG742096-2 WG742096-3								
Dibenzofuran	60		60		40-140	0		30
2-Methylnaphthalene	61		59		40-140	3		30
Acetophenone	62		59		40-140	5		30
2,4,6-Trichlorophenol	66		62		30-130	6		30
2-Chlorophenol	63		61		30-130	3		30
2,4-Dichlorophenol	66		65		30-130	2		30
2,4-Dimethylphenol	63		61		30-130	3		30
2-Nitrophenol	62		59		30-130	5		30
4-Nitrophenol	76		73		30-130	4		30
2,4-Dinitrophenol	23	Q	24	Q	30-130	4		30
Pentachlorophenol	50		51		30-130	2		30
Phenol	66		62		30-130	6		30
2-Methylphenol	66		63		30-130	5		30
3-Methylphenol/4-Methylphenol	66		62		30-130	6		30
2,4,5-Trichlorophenol	66		64		30-130	3		30

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
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MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG742096-2 WG742096-3

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>
2-Fluorophenol	66		62		30-130
Phenol-d6	67		60		30-130
Nitrobenzene-d5	64		58		30-130
2-Fluorobiphenyl	65		60		30-130
2,4,6-Tribromophenol	64		62		30-130
4-Terphenyl-d14	60		59		30-130

# PETROLEUM HYDROCARBONS



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

Lab ID: L1427785-02  
 Client ID: D-23 30-42 CLAY  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 11/24/14 10:34  
 Analyst: SR  
 Percent Solids: 75%

Date Collected: 11/18/14 13:15  
 Date Received: 11/18/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/22/14 13:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
--	--	--	--	--	--	--

TPH	ND		ug/kg	42200	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	74		40-140

Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 1,8015C(M)  
 Analytical Date: 11/24/14 09:59  
 Analyst: SR

Extraction Method: EPA 3546  
 Extraction Date: 11/22/14 13:23

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 02 Batch: WG743021-1					
TPH	ND		ug/kg	31500	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	86		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02 Batch: WG743021-2								
TPH	46		-		40-140	-		40

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>
o-Terphenyl	94				40-140

**Lab Duplicate Analysis**  
**Batch Quality Control**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02 QC Batch ID: WG743021-3 QC Sample: L1427741-01 Client ID: DUP Sample						
TPH	ND	ND	ug/kg	NC		40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	82		91		40-140



# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

**Lab ID:** L1427785-02  
**Client ID:** D-23 30-42 CLAY  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil  
**Analytical Method:** 97,8082  
**Analytical Date:** 11/20/14 18:26  
**Analyst:** JW  
**Percent Solids:** 75%

**Date Collected:** 11/18/14 13:15  
**Date Received:** 11/18/14  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3546  
**Extraction Date:** 11/19/14 16:20  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 11/20/14  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 11/20/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	43.0	--	1	A
Aroclor 1221	ND		ug/kg	43.0	--	1	A
Aroclor 1232	ND		ug/kg	43.0	--	1	A
Aroclor 1242	ND		ug/kg	43.0	--	1	A
Aroclor 1248	ND		ug/kg	43.0	--	1	A
Aroclor 1254	ND		ug/kg	43.0	--	1	A
Aroclor 1260	ND		ug/kg	43.0	--	1	A
Aroclor 1262	ND		ug/kg	43.0	--	1	A
Aroclor 1268	ND		ug/kg	43.0	--	1	A
PCBs, Total	ND		ug/kg	43.0	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	43		30-150	A
Decachlorobiphenyl	42		30-150	A
2,4,5,6-Tetrachloro-m-xylene	52		30-150	B
Decachlorobiphenyl	52		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8082  
 Analytical Date: 11/20/14 20:30  
 Analyst: JW

Extraction Method: EPA 3546  
 Extraction Date: 11/19/14 16:20  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/20/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/20/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 02 Batch: WG742064-1						
Aroclor 1016	ND		ug/kg	32.5	--	A
Aroclor 1221	ND		ug/kg	32.5	--	A
Aroclor 1232	ND		ug/kg	32.5	--	A
Aroclor 1242	ND		ug/kg	32.5	--	A
Aroclor 1248	ND		ug/kg	32.5	--	A
Aroclor 1254	ND		ug/kg	32.5	--	A
Aroclor 1260	ND		ug/kg	32.5	--	A
Aroclor 1262	ND		ug/kg	32.5	--	A
Aroclor 1268	ND		ug/kg	32.5	--	A
PCBs, Total	ND		ug/kg	32.5	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	65		30-150	B



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02 Batch: WG742064-2 WG742064-3									
Aroclor 1016	73		65		40-140	12		30	A
Aroclor 1260	70		64		40-140	9		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		57		30-150	A
Decachlorobiphenyl	65		58		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		66		30-150	B
Decachlorobiphenyl	69		58		30-150	B



## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

Lab ID: L1427785-02  
 Client ID: D-23 30-42 CLAY  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 75%

Date Collected: 11/18/14 13:15  
 Date Received: 11/18/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	5.7		mg/kg	0.50	--	1	11/20/14 15:46	11/20/14 19:31	EPA 3050B	97,6010C	JH
Barium, Total	63		mg/kg	0.50	--	1	11/20/14 15:46	11/20/14 19:31	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	2.5	--	5	11/20/14 15:46	11/20/14 21:29	EPA 3050B	97,6010C	JH
Chromium, Total	38		mg/kg	0.50	--	1	11/20/14 15:46	11/20/14 19:31	EPA 3050B	97,6010C	JH
Lead, Total	3.1		mg/kg	2.5	--	1	11/20/14 15:46	11/20/14 19:31	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.090	--	1	11/19/14 08:58	11/19/14 15:04	EPA 7471B	97,7471B	MC
Selenium, Total	ND		mg/kg	2.5	--	1	11/20/14 15:46	11/20/14 19:31	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.50	--	1	11/20/14 15:46	11/20/14 19:31	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02 Batch: WG741790-1									
Mercury, Total	ND	mg/kg	0.083	--	1	11/19/14 08:58	11/19/14 14:15	97,7471B	MC

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02 Batch: WG742389-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	11/20/14 15:46	11/20/14 19:04	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	11/20/14 15:46	11/20/14 19:04	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	11/20/14 15:46	11/20/14 19:04	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	11/20/14 15:46	11/20/14 19:04	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	11/20/14 15:46	11/20/14 19:04	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	11/20/14 15:46	11/20/14 19:04	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	11/20/14 15:46	11/20/14 19:04	97,6010C	JH

### Prep Information

Digestion Method: EPA 3050B

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 02 Batch: WG741790-2 WG741790-3 SRM Lot Number: D083-540								
Mercury, Total	114		112		75-126	2		30
MCP Total Metals - Westborough Lab Associated sample(s): 02 Batch: WG742389-2 WG742389-3 SRM Lot Number: D083-540								
Arsenic, Total	115		106		78-122	8		30
Barium, Total	102		96		82-117	6		30
Cadmium, Total	103		100		82-118	3		30
Chromium, Total	108		108		79-121	0		30
Lead, Total	100		96		81-119	4		30
Selenium, Total	115		109		78-123	5		30
Silver, Total	111		108		74-125	3		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

### SAMPLE RESULTS

**Lab ID:** L1427785-02  
**Client ID:** D-23 30-42 CLAY  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/18/14 13:15  
**Date Received:** 11/18/14  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	11/19/14 12:30	1,1030	MD



Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

## SAMPLE RESULTS

Lab ID: L1427785-01

Date Collected: 11/18/14 13:15

Client ID: D-23S

Date Received: 11/18/14

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.0		%	0.100	NA	1	-	11/18/14 23:40	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

**Lab ID:** L1427785-02  
**Client ID:** D-23 30-42 CLAY  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/18/14 13:15  
**Date Received:** 11/18/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	1200		umhos/cm	10	--	1	-	11/19/14 01:58	1,9050A	LH
Solids, Total	75.0		%	0.100	NA	1	-	11/18/14 23:40	30,2540G	RT
pH (H)	8.1		SU	-	NA	1	-	11/19/14 02:40	1,9045D	LH
Cyanide, Reactive	ND		mg/kg	10	--	1	11/19/14 19:30	11/19/14 21:36	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	11/19/14 19:30	11/19/14 21:29	1,7.3	TL





Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG742041-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	11/19/14 19:30	11/19/14 21:34	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG742042-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	11/19/14 19:30	11/19/14 21:25	1,7.3	TL

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1427785

Report Date: 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG741778-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG741780-1								
Specific Conductance	97		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG742041-2								
Cyanide, Reactive	94		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG742042-2								
Sulfide, Reactive	117		-		60-125	-		40

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG741744-1 QC Sample: L1427741-01 Client ID: DUP Sample						
Solids, Total	88.6	88.8	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG741778-2 QC Sample: L1427747-02 Client ID: DUP Sample						
pH	8.6	8.6	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG741780-2 QC Sample: L1427747-02 Client ID: DUP Sample						
Specific Conductance	260	240	umhos/cm	8		20
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG742041-3 QC Sample: L1427789-08 Client ID: DUP Sample						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG742042-3 QC Sample: L1427789-08 Client ID: DUP Sample						
Sulfide, Reactive	ND	ND	mg/kg	NC		40

Project Name: FAN PIER PARCEL D

Lab Number: L1427785

Project Number: 4426.9.1D

Report Date: 11/24/14

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 11/18/2014 21:39

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1427785-01A	Vial MeOH preserved	A	N/A	2.0	Y	Absent	MCP-8260HLW-10(14)
L1427785-01B	Vial water preserved	A	N/A	2.0	Y	Absent	MCP-8260HLW-10(14)
L1427785-01C	Vial water preserved	A	N/A	2.0	Y	Absent	MCP-8260HLW-10(14)
L1427785-02A	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427785-02B	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D**Project Number:** 4426.9.1D**Lab Number:** L1427785**Report Date:** 11/24/14**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1427785-02C	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

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

### Terms

**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.
- 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.

**Report Format:** Data Usability Report



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

#### **Data Qualifiers**

- 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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427785  
**Report Date:** 11/24/14

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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 April 15, 2014

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

### **Westborough Facility**

**EPA 524.2:** Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.

**EPA 8330A/B:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.

**EPA 8270D:** 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**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.

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**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**

**EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4,**

**SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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



7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1427785

Instrument ID: Voal00.i      Calibration Date: 20-NOV-2014      Time: 07:22

Lab File ID: 1120A02      Init. Calib. Date(s): 13-NOV-2      13-NOV-2

Sample No: 8260 ccal      Init. Calib. Times : 16:13      19:17

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.14533	.16305	.1	12	20	
chloromethane	.19741	.22885	.1	16	20	
vinyl chloride	.27284	.31961	.1	17	20	
bromomethane	.30366	.36527	.1	20	20	F
chloroethane	.248	.30654	.1	24	20	F
trichlorofluoromethane	.54147	.5945	.1	10	20	
ethyl ether	.17015	.22113	.05	30	20	F
1,1,-dichloroethene	.18774	.22062	.1	18	20	
carbon disulfide	.62406	.67507	.1	8	20	
methylene chloride	.24797	.27521	.1	11	20	
acetone	.06164	.06736	.1	9	20	F
trans-1,2-dichloroethene	.22216	.25158	.1	13	20	
methyl tert butyl ether	.57302	.63452	.1	11	20	
Diisopropyl Ether	.58476	.65073	.05	11	20	
1,1-dichloroethane	.38267	.43979	.2	15	20	
Ethyl-Tert-Butyl-Ether	.63564	.69342	.05	9	20	
cis-1,2-dichloroethene	.24598	.28287	.1	15	20	
2,2-dichloropropane	.2916	.34645	.05	19	20	
bromochloromethane	.13567	.16038	.05	18	20	
chloroform	.40578	.47274	.2	17	20	
carbontetrachloride	.29498	.35589	.1	21	20	F
tetrahydrofuran	100	110	.05	10	20	
1,1,1-trichloroethane	.33604	.38928	.1	16	20	
2-butanone	.09409	.09762	.1	4	20	F
1,1-dichloropropene	.26644	.30915	.05	16	20	
benzene	.85692	.95276	.5	11	20	
Tertiary-Amyl Methyl Ether	.57687	.63933	.05	11	20	
1,2-dichloroethane	.29887	.34076	.1	14	20	
trichloroethene	.23606	.26565	.2	13	20	
dibromomethane	.14862	.17588	.05	18	20	
1,2-dichloropropane	.21144	.23781	.1	12	20	
bromodichloromethane	.32129	.3667	.2	14	20	
1,4-dioxane	5000	4922	.05	-2	20	
cis-1,3-dichloropropene	.34812	.39795	.2	14	20	
toluene	.62214	.61864	.4	-1	20	
4-methyl-2-pentanone	100	97.424	.1	-3	20	
tetrachloroethene	.28997	.30359	.2	5	20	
trans-1,3-dichloropropene	.37257	.37445	.1	1	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1427785

Instrument ID: Voal00.i      Calibration Date: 20-NOV-2014      Time: 07:22

Lab File ID: 1120A02      Init. Calib. Date(s): 13-NOV-2      13-NOV-2

Sample No: 8260 ccal      Init. Calib. Times : 16:13      19:17

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.19991	.19809	.1	-1	20
chlorodibromomethane	.32069	.32491	.1	1	20
1,3-dichloropropane	.38959	.38475	.05	-1	20
1,2-dibromoethane	.25127	.25772	.1	3	20
2-hexanone	.15296	.12877	.1	-16	20
chlorobenzene	.78079	.76692	.5	-2	20
ethyl benzene	1.1781	1.1532	.1	-2	20
1,1,1,2-tetrachloroethane	.30881	.30267	.05	-2	20
p/m xylene	.4832	.48172	.1	0	20
o xylene	.46472	.45602	.3	-2	20
styrene	200	172	.3	-14	20
bromoform	.42105	.38123	.1	-9	20
isopropylbenzene	1.9537	1.7657	.1	-10	20
bromobenzene	.61081	.56511	.05	-7	20
n-propylbenzene	2.3659	2.1188	.05	-10	20
1,1,2,2,-tetrachloroethane	.62214	.54596	.3	-12	20
2-chlorotoluene	1.4993	1.4491	.05	-3	20
1,3,5-trimethylbenzene	1.7443	1.6067	.05	-8	20
1,2,3-trichloropropane	.47281	.41873	.05	-11	20
4-chorotoluene	1.4391	1.3239	.05	-8	20
tert-butylbenzene	1.4635	1.3311	.05	-9	20
1,2,4-trimethylbenzene	1.7362	1.6149	.05	-7	20
sec-butylbenzene	2.1909	2.0148	.05	-8	20
p-isopropyltoluene	1.8918	1.7623	.05	-7	20
1,3-dichlorobenzene	1.1726	1.0841	.6	-8	20
1,4-dichlorobenzene	1.2154	1.1205	.5	-8	20
n-butylbenzene	1.7078	1.5773	.05	-8	20
1,2-dichlorobenzene	1.1178	1.0182	.4	-9	20
1,2-dibromo-3-chloropropane	.12738	.11143	.05	-13	20
hexachlorobutadiene	.34438	.33837	.05	-2	20
1,2,4-trichlorobenzene	.76576	.74073	.2	-3	20
naphthalene	2.0247	1.8026	.05	-11	20
1,2,3-trichlorobenzene	.74577	.71991	.05	-3	20
dibromofluoromethane	.29405	.30019	.05	2	30
1,2-dichloroethane-d4	.27565	.27045	.05	-2	30
toluene-d8	1.0971	1.0297	.05	-6	30
4-bromofluorobenzene	.74663	.73037	.05	-2	30

FORM VII MCP-8260HLW-10



## ANALYTICAL REPORT

Lab Number:	L1427789
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	11/24/14

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), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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



Project Name: FAN PIER PARCEL D  
Project Number: 4426.9.1D

Lab Number: L1427789  
Report Date: 11/24/14

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
<del>L1427789-01</del>	<del>D-23 S2 4-6</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/18/14 08:45</del>	<del>11/18/14</del>
<del>L1427789-02</del>	<del>D-23 0-6 FILL</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/18/14 08:45</del>	<del>11/18/14</del>
L1427789-03	D-23 S5 8-10	SOIL	BOSTON, MA	11/18/14 10:00	11/18/14
<del>L1427789-04</del>	<del>D-23 6-12 FILL</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/18/14 10:00</del>	<del>11/18/14</del>
<del>L1427789-05</del>	<del>D-23 S9 16-18</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/18/14 10:45</del>	<del>11/18/14</del>
<del>L1427789-06</del>	<del>D-23 12-18 FILL</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/18/14 10:45</del>	<del>11/18/14</del>
L1427789-07	D-23 S12 22-24	SOIL	BOSTON, MA	11/18/14 11:30	11/18/14
L1427789-08	D-23 18-24 FILL	SOIL	BOSTON, MA	11/18/14 11:30	11/18/14
<del>L1427789-09</del>	<del>D-23 S2 2-4</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/18/14 08:45</del>	<del>11/18/14</del>

Project Name: FAN PIER PARCEL D

Lab Number: L1427789

Project Number: 4426.9.1D

Report Date: 11/24/14

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

### Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

The samples submitted for Volatile Organics were received without raw soil for the Total Solids analysis. The Total Solids results from the corresponding composite samples were utilized in the dry weight calculation of the Volatile Organics data.

A vial for "D-23 S2 2-4" was received in the laboratory but not listed on the Chain of Custody. At the client's request, this sample was not analyzed.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

#### Volatile Organics

In reference to question G:

L1427789-03: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question H:

The initial calibration, associated with L1427789-01, -03, -05, and -07, did not meet the method required minimum response factor on the lowest calibration standard for acetone (0.07793), 2-butanone (0.07590) and trichloroethene (0.19010), as well as the average response factor for acetone and 2-butanone. The initial calibration verification is outside acceptance criteria for dichlorodifluoromethane (151%), but within overall method criteria.

The continuing calibration standard, associated with L1427789-01, -03, -05, and -07, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

#### Metals

In reference to question G:

L1427789-06 has an elevated detection limit for cadmium due to the dilution required by matrix interferences encountered during analysis. This analyte did not achieve the requested CAM reporting limit.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Case Narrative (continued)**

In reference to question I:

All samples were analyzed for a subset of MCP elements per the Chain of Custody.

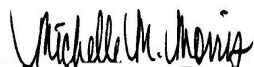
Non-MCP Related Narratives

Petroleum Hydrocarbon Quantitation

L1427789-02 has an elevated detection limit due to the dilution required by the sample matrix.

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:



Michelle M. Morris

Title: Technical Director/Representative

Date: 11/24/14

# ORGANICS

# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

Lab ID: L1427789-07  
 Client ID: D-23 S12 22-24  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 11/21/14 10:15  
 Analyst: MV  
 Percent Solids: 78%

Date Collected: 11/18/14 11:30  
 Date Received: 11/18/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	24	--	1
1,1-Dichloroethane	ND		ug/kg	3.6	--	1
Chloroform	ND		ug/kg	3.6	--	1
Carbon tetrachloride	ND		ug/kg	2.4	--	1
1,2-Dichloropropane	ND		ug/kg	8.3	--	1
Dibromochloromethane	ND		ug/kg	2.4	--	1
1,1,2-Trichloroethane	ND		ug/kg	3.6	--	1
Tetrachloroethene	ND		ug/kg	2.4	--	1
Chlorobenzene	ND		ug/kg	2.4	--	1
Trichlorofluoromethane	ND		ug/kg	9.5	--	1
1,2-Dichloroethane	ND		ug/kg	2.4	--	1
1,1,1-Trichloroethane	ND		ug/kg	2.4	--	1
Bromodichloromethane	ND		ug/kg	2.4	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.4	--	1
cis-1,3-Dichloropropene	ND		ug/kg	2.4	--	1
1,3-Dichloropropene, Total	ND		ug/kg	2.4	--	1
1,1-Dichloropropene	ND		ug/kg	9.5	--	1
Bromoform	ND		ug/kg	9.5	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	2.4	--	1
Benzene	ND		ug/kg	2.4	--	1
Toluene	ND		ug/kg	3.6	--	1
Ethylbenzene	ND		ug/kg	2.4	--	1
Chloromethane	ND		ug/kg	9.5	--	1
Bromomethane	ND		ug/kg	4.8	--	1
Vinyl chloride	ND		ug/kg	4.8	--	1
Chloroethane	ND		ug/kg	4.8	--	1
1,1-Dichloroethene	ND		ug/kg	2.4	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.6	--	1
Trichloroethene	ND		ug/kg	2.4	--	1
1,2-Dichlorobenzene	ND		ug/kg	9.5	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

**Lab ID:** L1427789-07  
**Client ID:** D-23 S12 22-24  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/18/14 11:30  
**Date Received:** 11/18/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	9.5	--	1
1,4-Dichlorobenzene	ND		ug/kg	9.5	--	1
Methyl tert butyl ether	ND		ug/kg	4.8	--	1
p/m-Xylene	ND		ug/kg	4.8	--	1
o-Xylene	ND		ug/kg	4.8	--	1
Xylenes, Total	ND		ug/kg	4.8	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.4	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.4	--	1
Dibromomethane	ND		ug/kg	9.5	--	1
1,2,3-Trichloropropane	ND		ug/kg	9.5	--	1
Styrene	ND		ug/kg	4.8	--	1
Dichlorodifluoromethane	ND		ug/kg	24	--	1
Acetone	90		ug/kg	86	--	1
Carbon disulfide	ND		ug/kg	9.5	--	1
Methyl ethyl ketone	ND		ug/kg	24	--	1
Methyl isobutyl ketone	ND		ug/kg	24	--	1
2-Hexanone	ND		ug/kg	24	--	1
Bromochloromethane	ND		ug/kg	9.5	--	1
Tetrahydrofuran	ND		ug/kg	9.5	--	1
2,2-Dichloropropane	ND		ug/kg	12	--	1
1,2-Dibromoethane	ND		ug/kg	9.5	--	1
1,3-Dichloropropane	ND		ug/kg	9.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	2.4	--	1
Bromobenzene	ND		ug/kg	12	--	1
n-Butylbenzene	ND		ug/kg	2.4	--	1
sec-Butylbenzene	ND		ug/kg	2.4	--	1
tert-Butylbenzene	ND		ug/kg	9.5	--	1
o-Chlorotoluene	ND		ug/kg	9.5	--	1
p-Chlorotoluene	ND		ug/kg	9.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	9.5	--	1
Hexachlorobutadiene	ND		ug/kg	9.5	--	1
Isopropylbenzene	ND		ug/kg	2.4	--	1
p-Isopropyltoluene	ND		ug/kg	2.4	--	1
Naphthalene	ND		ug/kg	9.5	--	1
n-Propylbenzene	ND		ug/kg	2.4	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	9.5	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	9.5	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	9.5	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	9.5	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

Lab ID: L1427789-07  
 Client ID: D-23 S12 22-24  
 Sample Location: BOSTON, MA

Date Collected: 11/18/14 11:30  
 Date Received: 11/18/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	12	--	1
Diisopropyl Ether	ND		ug/kg	9.5	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	9.5	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	9.5	--	1
1,4-Dioxane	ND		ug/kg	95	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	111		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 11/21/14 08:56  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,05,07 Batch: WG742794-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 11/21/14 08:56  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,05,07 Batch: WG742794-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 11/21/14 08:56  
**Analyst:** MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,05,07 Batch: WG742794-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	100		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 11/21/14 08:56  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 03 Batch: WG743169-3					
Methylene chloride	ND		ug/kg	500	--
1,1-Dichloroethane	ND		ug/kg	75	--
Chloroform	ND		ug/kg	75	--
Carbon tetrachloride	ND		ug/kg	50	--
1,2-Dichloropropane	ND		ug/kg	180	--
Dibromochloromethane	ND		ug/kg	50	--
1,1,2-Trichloroethane	ND		ug/kg	75	--
Tetrachloroethene	ND		ug/kg	50	--
Chlorobenzene	ND		ug/kg	50	--
Trichlorofluoromethane	ND		ug/kg	200	--
1,2-Dichloroethane	ND		ug/kg	50	--
1,1,1-Trichloroethane	ND		ug/kg	50	--
Bromodichloromethane	ND		ug/kg	50	--
trans-1,3-Dichloropropene	ND		ug/kg	50	--
cis-1,3-Dichloropropene	ND		ug/kg	50	--
1,3-Dichloropropene, Total	ND		ug/kg	50	--
1,1-Dichloropropene	ND		ug/kg	200	--
Bromoform	ND		ug/kg	200	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	50	--
Benzene	ND		ug/kg	50	--
Toluene	ND		ug/kg	75	--
Ethylbenzene	ND		ug/kg	50	--
Chloromethane	ND		ug/kg	200	--
Bromomethane	ND		ug/kg	100	--
Vinyl chloride	ND		ug/kg	100	--
Chloroethane	ND		ug/kg	100	--
1,1-Dichloroethene	ND		ug/kg	50	--
trans-1,2-Dichloroethene	ND		ug/kg	75	--
Trichloroethene	ND		ug/kg	50	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 11/21/14 08:56  
**Analyst:** MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 03 Batch: WG743169-3					
1,2-Dichlorobenzene	ND		ug/kg	200	--
1,3-Dichlorobenzene	ND		ug/kg	200	--
1,4-Dichlorobenzene	ND		ug/kg	200	--
Methyl tert butyl ether	ND		ug/kg	100	--
p/m-Xylene	ND		ug/kg	100	--
o-Xylene	ND		ug/kg	100	--
Xylenes, Total	ND		ug/kg	100	--
cis-1,2-Dichloroethene	ND		ug/kg	50	--
1,2-Dichloroethene, Total	ND		ug/kg	50	--
Dibromomethane	ND		ug/kg	200	--
1,2,3-Trichloropropane	ND		ug/kg	200	--
Styrene	ND		ug/kg	100	--
Dichlorodifluoromethane	ND		ug/kg	500	--
Acetone	ND		ug/kg	1800	--
Carbon disulfide	ND		ug/kg	200	--
Methyl ethyl ketone	ND		ug/kg	500	--
Methyl isobutyl ketone	ND		ug/kg	500	--
2-Hexanone	ND		ug/kg	500	--
Bromochloromethane	ND		ug/kg	200	--
Tetrahydrofuran	ND		ug/kg	200	--
2,2-Dichloropropane	ND		ug/kg	250	--
1,2-Dibromoethane	ND		ug/kg	200	--
1,3-Dichloropropane	ND		ug/kg	200	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	50	--
Bromobenzene	ND		ug/kg	250	--
n-Butylbenzene	ND		ug/kg	50	--
sec-Butylbenzene	ND		ug/kg	50	--
tert-Butylbenzene	ND		ug/kg	200	--
o-Chlorotoluene	ND		ug/kg	200	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 11/21/14 08:56  
**Analyst:** MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 03 Batch: WG743169-3					
p-Chlorotoluene	ND		ug/kg	200	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	200	--
Hexachlorobutadiene	ND		ug/kg	200	--
Isopropylbenzene	ND		ug/kg	50	--
p-Isopropyltoluene	ND		ug/kg	50	--
Naphthalene	ND		ug/kg	200	--
n-Propylbenzene	ND		ug/kg	50	--
1,2,3-Trichlorobenzene	ND		ug/kg	200	--
1,2,4-Trichlorobenzene	ND		ug/kg	200	--
1,3,5-Trimethylbenzene	ND		ug/kg	200	--
1,2,4-Trimethylbenzene	ND		ug/kg	200	--
Diethyl ether	ND		ug/kg	250	--
Diisopropyl Ether	ND		ug/kg	200	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	200	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	200	--
1,4-Dioxane	ND		ug/kg	5000	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	100		70-130

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,05,07 Batch: WG742794-1 WG742794-2								
Methylene chloride	112		117		70-130	4		20
1,1-Dichloroethane	116		119		70-130	3		20
Chloroform	116		118		70-130	2		20
Carbon tetrachloride	124		124		70-130	0		20
1,2-Dichloropropane	113		120		70-130	6		20
Dibromochloromethane	97		102		70-130	5		20
1,1,2-Trichloroethane	99		102		70-130	3		20
Tetrachloroethene	104		107		70-130	3		20
Chlorobenzene	97		99		70-130	2		20
Trichlorofluoromethane	109		118		70-130	8		20
1,2-Dichloroethane	115		120		70-130	4		20
1,1,1-Trichloroethane	118		119		70-130	1		20
Bromodichloromethane	113		119		70-130	5		20
trans-1,3-Dichloropropene	99		104		70-130	5		20
cis-1,3-Dichloropropene	115		119		70-130	3		20
1,1-Dichloropropene	121		121		70-130	0		20
Bromoform	88		93		70-130	6		20
1,1,2,2-Tetrachloroethane	86		90		70-130	5		20
Benzene	112		115		70-130	3		20
Toluene	97		101		70-130	4		20
Ethylbenzene	99		100		70-130	1		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,05,07 Batch: WG742794-1 WG742794-2								
Chloromethane	121		124		70-130	2		20
Bromomethane	120		121		70-130	1		20
Vinyl chloride	119		121		70-130	2		20
Chloroethane	126		130		70-130	3		20
1,1-Dichloroethene	120		122		70-130	2		20
trans-1,2-Dichloroethene	116		117		70-130	1		20
Trichloroethene	115		116		70-130	1		20
1,2-Dichlorobenzene	90		92		70-130	2		20
1,3-Dichlorobenzene	92		94		70-130	2		20
1,4-Dichlorobenzene	91		92		70-130	1		20
Methyl tert butyl ether	111		117		70-130	5		20
p/m-Xylene	99		101		70-130	2		20
o-Xylene	97		100		70-130	3		20
cis-1,2-Dichloroethene	115		119		70-130	3		20
Dibromomethane	117		123		70-130	5		20
1,2,3-Trichloropropane	87		92		70-130	6		20
Styrene	85		87		70-130	2		20
Dichlorodifluoromethane	114		117		70-130	3		20
Acetone	107		114		70-130	6		20
Carbon disulfide	113		113		70-130	0		20
Methyl ethyl ketone	104		109		70-130	5		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,05,07 Batch: WG742794-1 WG742794-2								
Methyl isobutyl ketone	96		100		70-130	4		20
2-Hexanone	82		89		70-130	8		20
Bromochloromethane	118		122		70-130	3		20
Tetrahydrofuran	112		118		70-130	5		20
2,2-Dichloropropane	122		124		70-130	2		20
1,2-Dibromoethane	97		103		70-130	6		20
1,3-Dichloropropane	98		102		70-130	4		20
1,1,1,2-Tetrachloroethane	98		101		70-130	3		20
Bromobenzene	90		93		70-130	3		20
n-Butylbenzene	95		95		70-130	0		20
sec-Butylbenzene	94		95		70-130	1		20
tert-Butylbenzene	93		94		70-130	1		20
o-Chlorotoluene	97		76		70-130	24	Q	20
p-Chlorotoluene	91		93		70-130	2		20
1,2-Dibromo-3-chloropropane	84		87		70-130	4		20
Hexachlorobutadiene	100		101		70-130	1		20
Isopropylbenzene	91		92		70-130	1		20
p-Isopropyltoluene	94		95		70-130	1		20
Naphthalene	86		89		70-130	3		20
n-Propylbenzene	91		92		70-130	1		20
1,2,3-Trichlorobenzene	94		97		70-130	3		20



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,05,07 Batch: WG742794-1 WG742794-2								
1,2,4-Trichlorobenzene	95		96		70-130	1		20
1,3,5-Trimethylbenzene	93		94		70-130	1		20
1,2,4-Trimethylbenzene	93		94		70-130	1		20
Diethyl ether	128		127		70-130	1		20
Diisopropyl Ether	112		118		70-130	5		20
Ethyl-Tert-Butyl-Ether	110		115		70-130	4		20
Tertiary-Amyl Methyl Ether	110		116		70-130	5		20
1,4-Dioxane	91		102		70-130	11		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		98		70-130
Toluene-d8	92		93		70-130
4-Bromofluorobenzene	99		99		70-130
Dibromofluoromethane	102		102		70-130

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG743169-1 WG743169-2								
Methylene chloride	112		117		70-130	4		20
1,1-Dichloroethane	116		119		70-130	3		20
Chloroform	116		118		70-130	2		20
Carbon tetrachloride	124		124		70-130	0		20
1,2-Dichloropropane	113		120		70-130	6		20
Dibromochloromethane	97		102		70-130	5		20
1,1,2-Trichloroethane	99		102		70-130	3		20
Tetrachloroethene	104		107		70-130	3		20
Chlorobenzene	97		99		70-130	2		20
Trichlorofluoromethane	109		118		70-130	8		20
1,2-Dichloroethane	115		120		70-130	4		20
1,1,1-Trichloroethane	118		119		70-130	1		20
Bromodichloromethane	113		119		70-130	5		20
trans-1,3-Dichloropropene	99		104		70-130	5		20
cis-1,3-Dichloropropene	115		119		70-130	3		20
1,1-Dichloropropene	121		121		70-130	0		20
Bromoform	88		93		70-130	6		20
1,1,2,2-Tetrachloroethane	86		90		70-130	5		20
Benzene	112		115		70-130	3		20
Toluene	97		101		70-130	4		20
Ethylbenzene	99		100		70-130	1		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG743169-1 WG743169-2								
Chloromethane	121		124		70-130	2		20
Bromomethane	120		121		70-130	1		20
Vinyl chloride	119		121		70-130	2		20
Chloroethane	126		130		70-130	3		20
1,1-Dichloroethene	120		122		70-130	2		20
trans-1,2-Dichloroethene	116		117		70-130	1		20
Trichloroethene	115		116		70-130	1		20
1,2-Dichlorobenzene	90		92		70-130	2		20
1,3-Dichlorobenzene	92		94		70-130	2		20
1,4-Dichlorobenzene	91		92		70-130	1		20
Methyl tert butyl ether	111		117		70-130	5		20
p/m-Xylene	99		101		70-130	2		20
o-Xylene	97		100		70-130	3		20
cis-1,2-Dichloroethene	115		119		70-130	3		20
Dibromomethane	117		123		70-130	5		20
1,2,3-Trichloropropane	87		92		70-130	6		20
Styrene	85		87		70-130	2		20
Dichlorodifluoromethane	114		117		70-130	3		20
Acetone	107		114		70-130	6		20
Carbon disulfide	113		113		70-130	0		20
Methyl ethyl ketone	104		109		70-130	5		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG743169-1 WG743169-2								
Methyl isobutyl ketone	96		100		70-130	4		20
2-Hexanone	82		89		70-130	8		20
Bromochloromethane	118		122		70-130	3		20
Tetrahydrofuran	112		118		70-130	5		20
2,2-Dichloropropane	122		124		70-130	2		20
1,2-Dibromoethane	97		103		70-130	6		20
1,3-Dichloropropane	98		102		70-130	4		20
1,1,1,2-Tetrachloroethane	98		101		70-130	3		20
Bromobenzene	90		93		70-130	3		20
n-Butylbenzene	95		95		70-130	0		20
sec-Butylbenzene	94		95		70-130	1		20
tert-Butylbenzene	93		94		70-130	1		20
o-Chlorotoluene	97		76		70-130	24	Q	20
p-Chlorotoluene	91		93		70-130	2		20
1,2-Dibromo-3-chloropropane	84		87		70-130	4		20
Hexachlorobutadiene	100		101		70-130	1		20
Isopropylbenzene	91		92		70-130	1		20
p-Isopropyltoluene	94		95		70-130	1		20
Naphthalene	86		89		70-130	3		20
n-Propylbenzene	91		92		70-130	1		20
1,2,3-Trichlorobenzene	94		97		70-130	3		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG743169-1 WG743169-2								
1,2,4-Trichlorobenzene	95		96		70-130	1		20
1,3,5-Trimethylbenzene	93		94		70-130	1		20
1,2,4-Trimethylbenzene	93		94		70-130	1		20
Diethyl ether	128		127		70-130	1		20
Diisopropyl Ether	112		118		70-130	5		20
Ethyl-Tert-Butyl-Ether	110		115		70-130	4		20
Tertiary-Amyl Methyl Ether	110		116		70-130	5		20
1,4-Dioxane	91		102		70-130	11		20

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
1,2-Dichloroethane-d4	97		98		70-130
Toluene-d8	92		93		70-130
4-Bromofluorobenzene	99		99		70-130
Dibromofluoromethane	102		102		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

Lab ID: L1427789-08  
 Client ID: D-23 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 11/21/14 02:49  
 Analyst: JC  
 Percent Solids: 78%

Date Collected: 11/18/14 11:30  
 Date Received: 11/18/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/19/14 17:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

**Lab ID:** L1427789-08  
**Client ID:** D-23 18-24 FILL  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/18/14 11:30  
**Date Received:** 11/18/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	420	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	53		30-130
Phenol-d6	53		30-130
Nitrobenzene-d5	52		30-130
2-Fluorobiphenyl	55		30-130
2,4,6-Tribromophenol	55		30-130
4-Terphenyl-d14	49		30-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/20/14 18:25  
**Analyst:** JC

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/19/14 17:29

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742096-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	99	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	99	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/20/14 18:25  
**Analyst:** JC

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/19/14 17:29

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742096-1					
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	99	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	99	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	360	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	790	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/20/14 18:25  
**Analyst:** JC

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/19/14 17:29

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742096-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	87		30-130
Phenol-d6	87		30-130
Nitrobenzene-d5	85		30-130
2-Fluorobiphenyl	90		30-130
2,4,6-Tribromophenol	88		30-130
4-Terphenyl-d14	90		30-130

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742096-2 WG742096-3								
Acenaphthene	55		55		40-140	0		30
1,2,4-Trichlorobenzene	59		60		40-140	2		30
Hexachlorobenzene	54		52		40-140	4		30
Bis(2-chloroethyl)ether	54		52		40-140	4		30
2-Chloronaphthalene	61		59		40-140	3		30
1,2-Dichlorobenzene	58		57		40-140	2		30
1,3-Dichlorobenzene	55		56		40-140	2		30
1,4-Dichlorobenzene	56		57		40-140	2		30
3,3'-Dichlorobenzidine	47		45		40-140	4		30
2,4-Dinitrotoluene	55		55		40-140	0		30
2,6-Dinitrotoluene	60		57		40-140	5		30
Azobenzene	61		60		40-140	2		30
Fluoranthene	55		55		40-140	0		30
4-Bromophenyl phenyl ether	56		56		40-140	0		30
Bis(2-chloroisopropyl)ether	60		58		40-140	3		30
Bis(2-chloroethoxy)methane	58		54		40-140	7		30
Hexachlorobutadiene	56		58		40-140	4		30
Hexachloroethane	53		53		40-140	0		30
Isophorone	59		55		40-140	7		30
Naphthalene	54		55		40-140	2		30
Nitrobenzene	57		57		40-140	0		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742096-2 WG742096-3								
Bis(2-Ethylhexyl)phthalate	54		55		40-140	2		30
Butyl benzyl phthalate	49		51		40-140	4		30
Di-n-butylphthalate	56		57		40-140	2		30
Di-n-octylphthalate	51		53		40-140	4		30
Diethyl phthalate	58		56		40-140	4		30
Dimethyl phthalate	58		57		40-140	2		30
Benzo(a)anthracene	57		57		40-140	0		30
Benzo(a)pyrene	58		58		40-140	0		30
Benzo(b)fluoranthene	58		59		40-140	2		30
Benzo(k)fluoranthene	57		56		40-140	2		30
Chrysene	53		54		40-140	2		30
Acenaphthylene	60		58		40-140	3		30
Anthracene	57		57		40-140	0		30
Benzo(ghi)perylene	52		54		40-140	4		30
Fluorene	57		56		40-140	2		30
Phenanthrene	58		58		40-140	0		30
Dibenzo(a,h)anthracene	55		57		40-140	4		30
Indeno(1,2,3-cd)Pyrene	55		58		40-140	5		30
Pyrene	53		54		40-140	2		30
Aniline	40		37	Q	40-140	8		30
4-Chloroaniline	60		58		40-140	3		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742096-2 WG742096-3								
Dibenzofuran	60		60		40-140	0		30
2-Methylnaphthalene	61		59		40-140	3		30
Acetophenone	62		59		40-140	5		30
2,4,6-Trichlorophenol	66		62		30-130	6		30
2-Chlorophenol	63		61		30-130	3		30
2,4-Dichlorophenol	66		65		30-130	2		30
2,4-Dimethylphenol	63		61		30-130	3		30
2-Nitrophenol	62		59		30-130	5		30
4-Nitrophenol	76		73		30-130	4		30
2,4-Dinitrophenol	23	Q	24	Q	30-130	4		30
Pentachlorophenol	50		51		30-130	2		30
Phenol	66		62		30-130	6		30
2-Methylphenol	66		63		30-130	5		30
3-Methylphenol/4-Methylphenol	66		62		30-130	6		30
2,4,5-Trichlorophenol	66		64		30-130	3		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742096-2 WG742096-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
2-Fluorophenol	66		62		30-130
Phenol-d6	67		60		30-130
Nitrobenzene-d5	64		58		30-130
2-Fluorobiphenyl	65		60		30-130
2,4,6-Tribromophenol	64		62		30-130
4-Terphenyl-d14	60		59		30-130

# PETROLEUM HYDROCARBONS



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

Lab ID: L1427789-08  
 Client ID: D-23 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 11/24/14 12:18  
 Analyst: SR  
 Percent Solids: 78%

Date Collected: 11/18/14 11:30  
 Date Received: 11/18/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/22/14 13:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	81800		ug/kg	41000	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	80		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8015C(M)  
**Analytical Date:** 11/24/14 09:59  
**Analyst:** SR

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/22/14 13:23

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 02,04,06,08 Batch: WG743021-1					
TPH	ND		ug/kg	31500	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	86		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG743021-2								
TPH	46		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	94				40-140

**Lab Duplicate Analysis**  
**Batch Quality Control**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02,04,06,08 QC Batch ID: WG743021-3 QC Sample: L1427741-01 Client ID: DUP Sample						
TPH	ND	ND	ug/kg	NC		40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	82		91		40-140

# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

Lab ID: L1427789-08  
 Client ID: D-23 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082  
 Analytical Date: 11/20/14 19:03  
 Analyst: JW  
 Percent Solids: 78%

Date Collected: 11/18/14 11:30  
 Date Received: 11/18/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/19/14 16:20  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/20/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/20/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	40.6	--	1	A
Aroclor 1221	ND		ug/kg	40.6	--	1	A
Aroclor 1232	ND		ug/kg	40.6	--	1	A
Aroclor 1242	ND		ug/kg	40.6	--	1	A
Aroclor 1248	ND		ug/kg	40.6	--	1	A
Aroclor 1254	ND		ug/kg	40.6	--	1	A
Aroclor 1260	ND		ug/kg	40.6	--	1	A
Aroclor 1262	ND		ug/kg	40.6	--	1	A
Aroclor 1268	ND		ug/kg	40.6	--	1	A
PCBs, Total	ND		ug/kg	40.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	42		30-150	A
Decachlorobiphenyl	35		30-150	A
2,4,5,6-Tetrachloro-m-xylene	50		30-150	B
Decachlorobiphenyl	40		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Method Blank Analysis  
 Batch Quality Control**

Analytical Method: 97,8082  
 Analytical Date: 11/20/14 20:30  
 Analyst: JW

Extraction Method: EPA 3546  
 Extraction Date: 11/19/14 16:20  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/20/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/20/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 02,04,08 Batch: WG742064-1						
Aroclor 1016	ND		ug/kg	32.5	--	A
Aroclor 1221	ND		ug/kg	32.5	--	A
Aroclor 1232	ND		ug/kg	32.5	--	A
Aroclor 1242	ND		ug/kg	32.5	--	A
Aroclor 1248	ND		ug/kg	32.5	--	A
Aroclor 1254	ND		ug/kg	32.5	--	A
Aroclor 1260	ND		ug/kg	32.5	--	A
Aroclor 1262	ND		ug/kg	32.5	--	A
Aroclor 1268	ND		ug/kg	32.5	--	A
PCBs, Total	ND		ug/kg	32.5	--	A

Surrogate	%Recovery	Qualifier	Acceptance	Column
			Criteria	
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	65		30-150	B



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Method Blank Analysis  
 Batch Quality Control**

Analytical Method: 97,8082  
 Analytical Date: 11/21/14 17:57  
 Analyst: KB

Extraction Method: EPA 3546  
 Extraction Date: 11/20/14 00:29  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/20/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/20/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 06 Batch: WG742168-1						
Aroclor 1016	ND		ug/kg	31.5	--	A
Aroclor 1221	ND		ug/kg	31.5	--	A
Aroclor 1232	ND		ug/kg	31.5	--	A
Aroclor 1242	ND		ug/kg	31.5	--	A
Aroclor 1248	ND		ug/kg	31.5	--	A
Aroclor 1254	ND		ug/kg	31.5	--	A
Aroclor 1260	ND		ug/kg	31.5	--	A
Aroclor 1262	ND		ug/kg	31.5	--	A
Aroclor 1268	ND		ug/kg	31.5	--	A
PCBs, Total	ND		ug/kg	31.5	--	A

Surrogate	%Recovery	Qualifier	Acceptance	Column
			Criteria	
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	90		30-150	A
2,4,5,6-Tetrachloro-m-xylene	84		30-150	B
Decachlorobiphenyl	101		30-150	B





## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427789

Project Number: 4426.9.1D

Report Date: 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02,04,08 Batch: WG742064-2 WG742064-3									
Aroclor 1016	73		65		40-140	12		30	A
Aroclor 1260	70		64		40-140	9		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		57		30-150	A
Decachlorobiphenyl	65		58		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		66		30-150	B
Decachlorobiphenyl	69		58		30-150	B

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 06 Batch: WG742168-2 WG742168-3									
Aroclor 1016	66		73		40-140	10		30	A
Aroclor 1260	69		74		40-140	7		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		61		30-150	A
Decachlorobiphenyl	69		70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	60		61		30-150	B
Decachlorobiphenyl	78		79		30-150	B

## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

Lab ID: L1427789-08  
 Client ID: D-23 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 78%

Date Collected: 11/18/14 11:30  
 Date Received: 11/18/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	5.0		mg/kg	0.49	--	1	11/20/14 15:46	11/20/14 19:49	EPA 3050B	97,6010C	JH
Barium, Total	22		mg/kg	0.49	--	1	11/20/14 15:46	11/20/14 19:49	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.49	--	1	11/20/14 15:46	11/20/14 19:49	EPA 3050B	97,6010C	JH
Chromium, Total	18		mg/kg	0.49	--	1	11/20/14 15:46	11/20/14 19:49	EPA 3050B	97,6010C	JH
Lead, Total	22		mg/kg	2.5	--	1	11/20/14 15:46	11/20/14 19:49	EPA 3050B	97,6010C	JH
Mercury, Total	0.114		mg/kg	0.088	--	1	11/20/14 08:57	11/20/14 11:59	EPA 7471B	97,7471B	MC
Selenium, Total	ND		mg/kg	2.5	--	1	11/20/14 15:46	11/20/14 19:49	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.49	--	1	11/20/14 15:46	11/20/14 19:49	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

### Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742187-1									
Mercury, Total	ND	mg/kg	0.083	--	1	11/20/14 08:57	11/20/14 11:34	97,7471B	MC

#### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742389-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	11/20/14 15:46	11/20/14 19:04	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	11/20/14 15:46	11/20/14 19:04	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	11/20/14 15:46	11/20/14 19:04	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	11/20/14 15:46	11/20/14 19:04	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	11/20/14 15:46	11/20/14 19:04	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	11/20/14 15:46	11/20/14 19:04	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	11/20/14 15:46	11/20/14 19:04	97,6010C	JH

#### Prep Information

Digestion Method: EPA 3050B

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742187-2 WG742187-3 SRM Lot Number: D083-540								
Mercury, Total	115		102		75-126	12		30
MCP Total Metals - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742389-2 WG742389-3 SRM Lot Number: D083-540								
Arsenic, Total	115		106		78-122	8		30
Barium, Total	102		96		82-117	6		30
Cadmium, Total	103		100		82-118	3		30
Chromium, Total	108		108		79-121	0		30
Lead, Total	100		96		81-119	4		30
Selenium, Total	115		109		78-123	5		30
Silver, Total	111		108		74-125	3		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

### SAMPLE RESULTS

**Lab ID:** L1427789-08  
**Client ID:** D-23 18-24 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/18/14 11:30  
**Date Received:** 11/18/14  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	11/19/14 12:30	1,1030	MD





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

**Lab ID:** L1427789-07  
**Client ID:** D-23 S12 22-24  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/18/14 11:30  
**Date Received:** 11/18/14  
**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	77.9		%	0.100	NA	1	-	11/20/14 01:56	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**SAMPLE RESULTS**

**Lab ID:** L1427789-08  
**Client ID:** D-23 18-24 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/18/14 11:30  
**Date Received:** 11/18/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	350		umhos/cm	10	--	1	-	11/20/14 01:44	1,9050A	LH
Solids, Total	77.9		%	0.100	NA	1	-	11/20/14 01:56	30,2540G	RT
pH (H)	8.6		SU	-	NA	1	-	11/19/14 18:13	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	11/19/14 19:30	11/19/14 21:37	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	11/19/14 19:30	11/19/14 21:30	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1427789

Project Number: 4426.9.1D

Report Date: 11/24/14

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742041-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	11/19/14 19:30	11/19/14 21:34	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742042-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	11/19/14 19:30	11/19/14 21:25	1,7.3	TL

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04,06 Batch: WG741778-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 02,04,06 Batch: WG741780-1								
Specific Conductance	97		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742041-2								
Cyanide, Reactive	94		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742042-2								
Sulfide, Reactive	117		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 08 Batch: WG742101-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 08 Batch: WG742176-1								
Specific Conductance	98		-		80-120	-		

## Lab Duplicate Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG741744-1 QC Sample: L1427741-01 Client ID: DUP Sample						
Solids, Total	88.6	88.8	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 02,04,06 QC Batch ID: WG741778-2 QC Sample: L1427747-02 Client ID: DUP Sample						
pH	8.6	8.6	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 02,04,06 QC Batch ID: WG741780-2 QC Sample: L1427747-02 Client ID: DUP Sample						
Specific Conductance	260	240	umhos/cm	8		20
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 QC Batch ID: WG742041-3 QC Sample: L1427789-08 Client ID: D-23 18-24 FILL						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 QC Batch ID: WG742042-3 QC Sample: L1427789-08 Client ID: D-23 18-24 FILL						
Sulfide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 08 QC Batch ID: WG742101-2 QC Sample: L1427746-01 Client ID: DUP Sample						
pH	7.4	7.5	SU	1		5
General Chemistry - Westborough Lab Associated sample(s): 08 QC Batch ID: WG742176-2 QC Sample: L1427789-08 Client ID: D-23 18-24 FILL						
Specific Conductance	350	360	umhos/cm	3		20
General Chemistry - Westborough Lab Associated sample(s): 07-08 QC Batch ID: WG742177-1 QC Sample: L1427789-08 Client ID: D-23 18-24 FILL						
Solids, Total	77.9	79.3	%	2		20

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** 11/18/2014 21:39

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1427789-01A	Vial MeOH preserved	A	N/A	2.0	Y	Absent	MCP-8260HLW-10(14)
L1427789-01A1	Vial MeOH preserved	A	N/A	2.0	Y	Absent	MCP-8260HLW-10(14)
L1427789-01B	Vial water preserved	A	N/A	2.0	Y	Absent	MCP-8260HLW-10(14)
L1427789-01C	Vial water preserved	A	N/A	2.0	Y	Absent	MCP-8260HLW-10(14)
L1427789-02A	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427789-02B	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1427789-02C	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427789-03A	Vial MeOH preserved	A	N/A	2.0	Y	Absent	MCP-8260H-10(14)
L1427789-03A1	Vial MeOH preserved	A	N/A	2.0	Y	Absent	MCP-8260H-10(14)
L1427789-03B	Vial MeOH preserved	A	N/A	2.0	Y	Absent	MCP-8260H-10(14)
L1427789-03C	Vial MeOH preserved	A	N/A	2.0	Y	Absent	MCP-8260H-10(14)
L1427789-04A	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427789-04B	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1427789-04C	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427789-05A	Vial MeOH preserved	A	N/A	2.0	Y	Absent	MCP-8260HLW-10(14)
L1427789-05B	Vial water preserved	A	N/A	2.0	Y	Absent	MCP-8260HLW-10(14)
L1427789-05C	Vial water preserved	A	N/A	2.0	Y	Absent	MCP-8260HLW-10(14)
L1427789-06A	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427789-06B	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427789-06C	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1427789-07A	Vial MeOH preserved	A	N/A	2.0	Y	Absent	MCP-8260HLW-10(14)
L1427789-07B	Vial water preserved	A	N/A	2.0	Y	Absent	MCP-8260HLW-10(14)
L1427789-07C	Vial water preserved	A	N/A	2.0	Y	Absent	MCP-8260HLW-10(14)
L1427789-08A	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427789-08B	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427789-08C	Glass 250ml/8oz unpreserved	A	N/A	2.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427789-09C	Vial water preserved	A	N/A	2.0	Y	Absent	HOLD-8260HLW(14)

**Container Comments**

L1427789-01B

L1427789-02B

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

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

### Terms

**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.
- 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.

Report Format: Data Usability Report



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

#### **Data Qualifiers**

- 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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427789  
**Report Date:** 11/24/14

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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 April 15, 2014

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

### Westborough Facility

**EPA 524.2:** Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.

**EPA 8330A/B:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.

**EPA 8270D:** 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**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.

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**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**

**EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4,**

**SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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

# CHAIN OF CUSTODY

PAGE 1 OF 11



Westborough, MA Mansfield, MA  
 TEL: 508-898-9220 TEL: 508-822-9300  
 FAX: 508-898-9193 FAX: 508-822-3288

### Client Information

Client: McPhail Associates, LLC  
 Address: 2269 Massachusetts Avenue  
 Cambridge, MA 02140  
 Phone: 6178681420

Fax: 6178681423

Email: bdowning@mcphailgeo.com

These samples have been Previously analyzed by Alpha

### Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT  
 \*Denotes obtain total solid sample from composite sample.  
 \*\*Minus VOCs

### Project Information

Project Name: Fan Pier Parcel D

Project Location: Boston, MA

Project #: 4426.9.1D

Project Manager: Ben Downing/Peter DeChaves

ALPHA Quote #: Fan Pier Pricing

### Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: 11/21/14 Time:

Date Rec'd in Lab: 11/18/14 ALPHA Job #: L1427789

### Report Information Data Deliverables Billing Information

FAX  EMAIL  Same as Client info PO#:  
 ADEx  Add'l Deliverables

### Regulatory Requirements/Report Limits

State/Fed Program: MA Criteria: RCS-1

### MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

### ANALYSIS

VOCs (8260)*	Soil Management Package IV**																	SAMPLE HANDLING Filtration <input type="checkbox"/> Done <input checked="" type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)	TOTAL # BOTTLES
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
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ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
27789-01	D-23 S2 4-6	11/19/14	845	Fill	TMC
02	D-23 O-6 Fill		845		
03	D-23 S5 8-10		1000		
04	D-23 G-12 Fill		1000		
05	D-23 S9 16-18		1045		
06	D-23 12-18 Fill				
	D-23 S12 22-24	11/18/14	11:30		
	D-23 18-24 Fill	11/18/14	11:30		

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-

**IS YOUR PROJECT MA MCP or CT RCP?**  
 FORM NO: 01-01(1)  
 (rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
<i>Tom Gormica</i>	11/18/14 1730	<i>[Signature]</i>	11/18/14 1420
	11/18/14 1805		11/18/14 1805

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

# CHAIN OF CUSTODY

PAGE 1 OF 11



Westborough, MA    Mansfield, MA  
 TEL: 508-898-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3288

### Client Information

Client: McPhail Associates, LLC  
 Address: 2269 Massachusetts Avenue  
 Cambridge, MA 02140  
 Phone: 6178681420  
 Fax: 6178681423  
 Email: bdowning@mcphailgeo.com

These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:  
 Standard TAT  
 \*Denotes obtain total solid sample from composite sample.  
 \*\*Minus VOCs

### Project Information

Project Name: Fan Pier Parcel D

Project Location: Boston, MA

Project #: 4426.9.1D

Project Manager: Ben Downing/Peter DeChaves

ALPHA Quote #: Fan Pier Pricing

### Turn-Around Time

Standard     Rush (ONLY IF PRE-APPROVED)

Due Date: 11/21/17    Time:

Date Rec'd in Lab: 11/18/17    ALPHA Job #: L1427789

### Report Information Data Deliverables Billing Information

FAX     EMAIL     Same as Client info    PO #:  
 ADEx     Add'l Deliverables

### Regulatory Requirements/Report Limits

State/Fed Program: MA    Criteria: RCS-1

### MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes     No    Are MCP Analytical Methods Required?  
 Yes     No    Are CT RCP (Reasonable Confidence Protocols) Required?

### ANALYSIS

VOCs (8260)*	Soil Management Package IV**	ANALYSIS																SAMPLE HANDLING Filtration <input type="checkbox"/> Done <input checked="" type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)	TOTAL # BOTTLES	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
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ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	VOCs (8260)*	Soil Management Package IV**	ANALYSIS																SAMPLE HANDLING Filtration <input type="checkbox"/> Done <input checked="" type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)	TOTAL # BOTTLES
		Date	Time					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
27789-01	D-23 S2 4-6	11/17/17	845	Fu	TRC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4				
02	D-23 0-6 Fu		845			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3				
03	D-23 S5 8-10		1000			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4				
04	D-23 G-12 Fu		1000			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3				
05	D-23 S9 16-18		1045			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3				
06	D-23 12-18 Fu					<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3				

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**IS YOUR PROJECT MA MCP or CT RCP?**

FORM NO: 01-01(1)  
 (rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
<i>Tom Gormica</i>	11/18/17 1730	<i>AKC</i>	11/18/17 1420
	11/18/17 1805		11/18/17 1805

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

7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1427789

Instrument ID: Voal00.i      Calibration Date: 21-NOV-2014      Time: 07:37

Lab File ID: 1121A02      Init. Calib. Date(s): 13-NOV-2      13-NOV-2

Sample No: 8260 CCAL      Init. Calib. Times : 16:13      19:17

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.14533	.1659	.1	14	20	
chloromethane	.19741	.2392	.1	21	20	F
vinyl chloride	.27284	.32552	.1	19	20	
bromomethane	.30366	.3643	.1	20	20	
chloroethane	.248	.31173	.1	26	20	F
trichlorofluoromethane	.54147	.59288	.1	9	20	
ethyl ether	.17015	.21785	.05	28	20	F
1,1,-dichloroethene	.18774	.2264	.1	21	20	F
carbon disulfide	.62406	.70669	.1	13	20	
methylene chloride	.24797	.2784	.1	12	20	
acetone	.06164	.06614	.1	7	20	F
trans-1,2-dichloroethene	.22216	.25723	.1	16	20	
methyl tert butyl ether	.57302	.6381	.1	11	20	
Diisopropyl Ether	.58476	.65366	.05	12	20	
1,1-dichloroethane	.38267	.44536	.2	16	20	
Ethyl-Tert-Butyl-Ether	.63564	.69657	.05	10	20	
cis-1,2-dichloroethene	.24598	.28207	.1	15	20	
2,2-dichloropropane	.2916	.35623	.05	22	20	F
bromochloromethane	.13567	.16061	.05	18	20	
chloroform	.40578	.47061	.2	16	20	
carbontetrachloride	.29498	.36503	.1	24	20	F
tetrahydrofuran	100	112	.05	12	20	
1,1,1-trichloroethane	.33604	.39565	.1	18	20	
2-butanone	.09409	.09754	.1	4	20	F
1,1-dichloropropene	.26644	.32328	.05	21	20	F
benzene	.85692	.96166	.5	12	20	
Tertiary-Amyl Methyl Ether	.57687	.6366	.05	10	20	
1,2-dichloroethane	.29887	.34466	.1	15	20	
trichloroethene	.23606	.27221	.2	15	20	
dibromomethane	.14862	.17419	.05	17	20	
1,2-dichloropropane	.21144	.23977	.1	13	20	
bromodichloromethane	.32129	.36405	.2	13	20	
1,4-dioxane	5000	4570	.05	-9	20	
cis-1,3-dichloropropene	.34812	.40207	.2	15	20	
toluene	.62214	.60467	.4	-3	20	
4-methyl-2-pentanone	100	95.544	.1	-4	20	
tetrachloroethene	.28997	.30135	.2	4	20	
trans-1,3-dichloropropene	.37257	.3693	.1	-1	20	

FORM VII MCP-8260HLW-10



7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1427789

Instrument ID: Voal00.i      Calibration Date: 21-NOV-2014      Time: 07:37

Lab File ID: 1121A02      Init. Calib. Date(s): 13-NOV-2      13-NOV-2

Sample No: 8260 CCAL      Init. Calib. Times : 16:13      19:17

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.19991	.19743	.1	-1	20
chlorodibromomethane	.32069	.30976	.1	-3	20
1,3-dichloropropane	.38959	.38016	.05	-2	20
1,2-dibromoethane	.25127	.2431	.1	-3	20
2-hexanone	.15296	.12482	.1	-18	20
chlorobenzene	.78079	.756	.5	-3	20
ethyl benzene	1.1781	1.1623	.1	-1	20
1,1,1,2-tetrachloroethane	.30881	.30304	.05	-2	20
p/m xylene	.4832	.47666	.1	-1	20
o xylene	.46472	.45238	.3	-3	20
styrene	200	170	.3	-15	20
bromoform	.42105	.36867	.1	-12	20
isopropylbenzene	1.9537	1.7761	.1	-9	20
bromobenzene	.61081	.5505	.05	-10	20
n-propylbenzene	2.3659	2.1424	.05	-9	20
1,1,2,2,-tetrachloroethane	.62214	.5335	.3	-14	20
2-chlorotoluene	1.4993	1.4579	.05	-3	20
1,3,5-trimethylbenzene	1.7443	1.6152	.05	-7	20
1,2,3-trichloropropane	.47281	.41029	.05	-13	20
4-chorotoluene	1.4391	1.3138	.05	-9	20
tert-butylbenzene	1.4635	1.3551	.05	-7	20
1,2,4-trimethylbenzene	1.7362	1.6156	.05	-7	20
sec-butylbenzene	2.1909	2.0613	.05	-6	20
p-isopropyltoluene	1.8918	1.7757	.05	-6	20
1,3-dichlorobenzene	1.1726	1.0727	.6	-9	20
1,4-dichlorobenzene	1.2154	1.1047	.5	-9	20
n-butylbenzene	1.7078	1.6181	.05	-5	20
1,2-dichlorobenzene	1.1178	1.0060	.4	-10	20
1,2-dibromo-3-chloropropane	.12738	.10723	.05	-16	20
hexachlorobutadiene	.34438	.34416	.05	0	20
1,2,4-trichlorobenzene	.76576	.72429	.2	-5	20
naphthalene	2.0247	1.7305	.05	-15	20
1,2,3-trichlorobenzene	.74577	.70282	.05	-6	20
dibromofluoromethane	.29405	.30003	.05	2	30
1,2-dichloroethane-d4	.27565	.26729	.05	-3	30
toluene-d8	1.0971	1.0097	.05	-8	30
4-bromofluorobenzene	.74663	.73751	.05	-1	30

FORM VII MCP-8260HLW-10



## ANALYTICAL REPORT

Lab Number:	L1427955
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	11/25/14

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), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1427955-01	D-20 S17 35-37	SOIL	BOSTON, MA	11/19/14 14:30	11/19/14
L1427955-02	D-20 28-42 CLAY	SOIL	BOSTON, MA	11/19/14 14:30	11/19/14

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

### MADEP MCP Response Action Analytical Report Certification

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

### Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

The sample submitted for Volatile Organics was received without raw soil for the Total Solids analysis. The Total Solids result from the corresponding composite sample was utilized in the dry weight calculation of the Volatile Organics data.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1427955-01, did not meet the method required minimum response factor on the lowest calibration standard for acetone (0.09563), 4-methyl-2-pentanone (0.09049), and 1,4-dioxane (0.00251), as well as the average response factor for acetone and 1,4-dioxane. The initial calibration verification is outside acceptance criteria for dichlorodifluoromethane (133%), but within overall method criteria. The continuing calibration standard, associated with L1427955-01, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

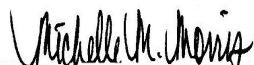
##### Metals

In reference to question I:

All samples were analyzed for a subset of MCP elements per the Chain of Custody.

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:

 Michelle M. Morris

Title: Technical Director/Representative

Date: 11/25/14

# ORGANICS

# VOLATILES



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427955-01  
 Client ID: D-20 S17 35-37  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 11/21/14 18:13  
 Analyst: MV  
 Percent Solids: 80%

Date Collected: 11/19/14 14:30  
 Date Received: 11/19/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	22	--	1
1,1-Dichloroethane	ND		ug/kg	3.2	--	1
Chloroform	ND		ug/kg	3.2	--	1
Carbon tetrachloride	ND		ug/kg	2.2	--	1
1,2-Dichloropropane	ND		ug/kg	7.6	--	1
Dibromochloromethane	ND		ug/kg	2.2	--	1
1,1,2-Trichloroethane	ND		ug/kg	3.2	--	1
Tetrachloroethene	ND		ug/kg	2.2	--	1
Chlorobenzene	ND		ug/kg	2.2	--	1
Trichlorofluoromethane	ND		ug/kg	8.7	--	1
1,2-Dichloroethane	ND		ug/kg	2.2	--	1
1,1,1-Trichloroethane	ND		ug/kg	2.2	--	1
Bromodichloromethane	ND		ug/kg	2.2	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.2	--	1
cis-1,3-Dichloropropene	ND		ug/kg	2.2	--	1
1,3-Dichloropropene, Total	ND		ug/kg	2.2	--	1
1,1-Dichloropropene	ND		ug/kg	8.7	--	1
Bromoform	ND		ug/kg	8.7	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	2.2	--	1
Benzene	ND		ug/kg	2.2	--	1
Toluene	ND		ug/kg	3.2	--	1
Ethylbenzene	ND		ug/kg	2.2	--	1
Chloromethane	ND		ug/kg	8.7	--	1
Bromomethane	ND		ug/kg	4.3	--	1
Vinyl chloride	ND		ug/kg	4.3	--	1
Chloroethane	ND		ug/kg	4.3	--	1
1,1-Dichloroethene	ND		ug/kg	2.2	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.2	--	1
Trichloroethene	ND		ug/kg	2.2	--	1
1,2-Dichlorobenzene	ND		ug/kg	8.7	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

**Lab ID:** L1427955-01  
**Client ID:** D-20 S17 35-37  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/19/14 14:30  
**Date Received:** 11/19/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	8.7	--	1
1,4-Dichlorobenzene	ND		ug/kg	8.7	--	1
Methyl tert butyl ether	ND		ug/kg	4.3	--	1
p/m-Xylene	ND		ug/kg	4.3	--	1
o-Xylene	ND		ug/kg	4.3	--	1
Xylenes, Total	ND		ug/kg	4.3	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.2	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.2	--	1
Dibromomethane	ND		ug/kg	8.7	--	1
1,2,3-Trichloropropane	ND		ug/kg	8.7	--	1
Styrene	ND		ug/kg	4.3	--	1
Dichlorodifluoromethane	ND		ug/kg	22	--	1
Acetone	ND		ug/kg	78	--	1
Carbon disulfide	ND		ug/kg	8.7	--	1
Methyl ethyl ketone	ND		ug/kg	22	--	1
Methyl isobutyl ketone	ND		ug/kg	22	--	1
2-Hexanone	ND		ug/kg	22	--	1
Bromochloromethane	ND		ug/kg	8.7	--	1
Tetrahydrofuran	ND		ug/kg	8.7	--	1
2,2-Dichloropropane	ND		ug/kg	11	--	1
1,2-Dibromoethane	ND		ug/kg	8.7	--	1
1,3-Dichloropropane	ND		ug/kg	8.7	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	2.2	--	1
Bromobenzene	ND		ug/kg	11	--	1
n-Butylbenzene	ND		ug/kg	2.2	--	1
sec-Butylbenzene	ND		ug/kg	2.2	--	1
tert-Butylbenzene	ND		ug/kg	8.7	--	1
o-Chlorotoluene	ND		ug/kg	8.7	--	1
p-Chlorotoluene	ND		ug/kg	8.7	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	8.7	--	1
Hexachlorobutadiene	ND		ug/kg	8.7	--	1
Isopropylbenzene	ND		ug/kg	2.2	--	1
p-Isopropyltoluene	ND		ug/kg	2.2	--	1
Naphthalene	ND		ug/kg	8.7	--	1
n-Propylbenzene	ND		ug/kg	2.2	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	8.7	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	8.7	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	8.7	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	8.7	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427955-01  
 Client ID: D-20 S17 35-37  
 Sample Location: BOSTON, MA

Date Collected: 11/19/14 14:30  
 Date Received: 11/19/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	11	--	1
Diisopropyl Ether	ND		ug/kg	8.7	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	8.7	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	8.7	--	1
1,4-Dioxane	ND		ug/kg	87	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	108		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 11/21/14 08:55  
**Analyst:** MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG742778-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 11/21/14 08:55  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG742778-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 11/21/14 08:55  
**Analyst:** MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG742778-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	103		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427955

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG742778-1 WG742778-2								
Methylene chloride	111		114		70-130	3		20
1,1-Dichloroethane	113		109		70-130	4		20
Chloroform	118		115		70-130	3		20
Carbon tetrachloride	118		113		70-130	4		20
1,2-Dichloropropane	108		106		70-130	2		20
Dibromochloromethane	95		94		70-130	1		20
1,1,2-Trichloroethane	91		90		70-130	1		20
Tetrachloroethene	98		95		70-130	3		20
Chlorobenzene	94		93		70-130	1		20
Trichlorofluoromethane	146	Q	139	Q	70-130	5		20
1,2-Dichloroethane	112		114		70-130	2		20
1,1,1-Trichloroethane	125		122		70-130	2		20
Bromodichloromethane	117		114		70-130	3		20
trans-1,3-Dichloropropene	93		94		70-130	1		20
cis-1,3-Dichloropropene	114		114		70-130	0		20
1,1-Dichloropropene	116		113		70-130	3		20
Bromoform	77		77		70-130	0		20
1,1,2,2-Tetrachloroethane	79		81		70-130	3		20
Benzene	113		111		70-130	2		20
Toluene	92		91		70-130	1		20
Ethylbenzene	96		93		70-130	3		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427955

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG742778-1 WG742778-2								
Chloromethane	97		93		70-130	4		20
Bromomethane	151	Q	144	Q	70-130	5		20
Vinyl chloride	101		98		70-130	3		20
Chloroethane	136	Q	132	Q	70-130	3		20
1,1-Dichloroethene	120		115		70-130	4		20
trans-1,2-Dichloroethene	117		112		70-130	4		20
Trichloroethene	118		116		70-130	2		20
1,2-Dichlorobenzene	84		83		70-130	1		20
1,3-Dichlorobenzene	87		84		70-130	4		20
1,4-Dichlorobenzene	86		83		70-130	4		20
Methyl tert butyl ether	112		114		70-130	2		20
p/m-Xylene	97		93		70-130	4		20
o-Xylene	96		94		70-130	2		20
cis-1,2-Dichloroethene	117		116		70-130	1		20
Dibromomethane	111		112		70-130	1		20
1,2,3-Trichloropropane	79		81		70-130	3		20
Styrene	96		93		70-130	3		20
Dichlorodifluoromethane	68	Q	65	Q	70-130	5		20
Acetone	107		106		70-130	1		20
Carbon disulfide	103		101		70-130	2		20
Methyl ethyl ketone	97		96		70-130	1		20



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427955

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG742778-1 WG742778-2								
Methyl isobutyl ketone	90		94		70-130	4		20
2-Hexanone	70		72		70-130	3		20
Bromochloromethane	120		119		70-130	1		20
Tetrahydrofuran	100		98		70-130	2		20
2,2-Dichloropropane	125		122		70-130	2		20
1,2-Dibromoethane	92		92		70-130	0		20
1,3-Dichloropropane	90		90		70-130	0		20
1,1,1,2-Tetrachloroethane	97		95		70-130	2		20
Bromobenzene	86		83		70-130	4		20
n-Butylbenzene	87		84		70-130	4		20
sec-Butylbenzene	88		86		70-130	2		20
tert-Butylbenzene	87		84		70-130	4		20
o-Chlorotoluene	89		86		70-130	3		20
p-Chlorotoluene	86		84		70-130	2		20
1,2-Dibromo-3-chloropropane	78		76		70-130	3		20
Hexachlorobutadiene	88		81		70-130	8		20
Isopropylbenzene	87		85		70-130	2		20
p-Isopropyltoluene	87		84		70-130	4		20
Naphthalene	77		77		70-130	0		20
n-Propylbenzene	88		86		70-130	2		20
1,2,3-Trichlorobenzene	81		79		70-130	3		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427955

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG742778-1 WG742778-2								
1,2,4-Trichlorobenzene	83		79		70-130	5		20
1,3,5-Trimethylbenzene	88		85		70-130	3		20
1,2,4-Trimethylbenzene	88		84		70-130	5		20
Diethyl ether	116		120		70-130	3		20
Diisopropyl Ether	104		105		70-130	1		20
Ethyl-Tert-Butyl-Ether	108		110		70-130	2		20
Tertiary-Amyl Methyl Ether	108		110		70-130	2		20
1,4-Dioxane	101		106		70-130	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		101		70-130
Toluene-d8	89		89		70-130
4-Bromofluorobenzene	97		96		70-130
Dibromofluoromethane	110		109		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427955-02  
 Client ID: D-20 28-42 CLAY  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 11/22/14 01:27  
 Analyst: PS  
 Percent Solids: 80%

Date Collected: 11/19/14 14:30  
 Date Received: 11/19/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/20/14 02:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

**Lab ID:** L1427955-02  
**Client ID:** D-20 28-42 CLAY  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/19/14 14:30  
**Date Received:** 11/19/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	420	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	51		30-130
Phenol-d6	55		30-130
Nitrobenzene-d5	42		30-130
2-Fluorobiphenyl	50		30-130
2,4,6-Tribromophenol	55		30-130
4-Terphenyl-d14	54		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/21/14 18:19  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/20/14 02:20

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02 Batch: WG742179-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	97	--
Bis(2-chloroethyl)ether	ND		ug/kg	140	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	97	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	190	--
Bis(2-chloroethoxy)methane	ND		ug/kg	170	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	140	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	140	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	97	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/21/14 18:19  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/20/14 02:20

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02 Batch: WG742179-1					
Benzo(b)fluoranthene	ND		ug/kg	97	--
Benzo(k)fluoranthene	ND		ug/kg	97	--
Chrysene	ND		ug/kg	97	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	97	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	97	--
Dibenzo(a,h)anthracene	ND		ug/kg	97	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	97	--
Aniline	ND		ug/kg	190	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	190	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	97	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	140	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	320	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/21/14 18:19  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/20/14 02:20

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02 Batch: WG742179-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	70		30-130
Phenol-d6	70		30-130
Nitrobenzene-d5	71		30-130
2-Fluorobiphenyl	71		30-130
2,4,6-Tribromophenol	71		30-130
4-Terphenyl-d14	72		30-130



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427955

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG742179-2 WG742179-3								
Acenaphthene	65		66		40-140	2		30
1,2,4-Trichlorobenzene	67		66		40-140	2		30
Hexachlorobenzene	62		64		40-140	3		30
Bis(2-chloroethyl)ether	61		60		40-140	2		30
2-Chloronaphthalene	65		63		40-140	3		30
1,2-Dichlorobenzene	62		61		40-140	2		30
1,3-Dichlorobenzene	62		62		40-140	0		30
1,4-Dichlorobenzene	61		61		40-140	0		30
3,3'-Dichlorobenzidine	44		44		40-140	0		30
2,4-Dinitrotoluene	66		65		40-140	2		30
2,6-Dinitrotoluene	63		62		40-140	2		30
Azobenzene	73		72		40-140	1		30
Fluoranthene	65		65		40-140	0		30
4-Bromophenyl phenyl ether	64		63		40-140	2		30
Bis(2-chloroisopropyl)ether	64		63		40-140	2		30
Bis(2-chloroethoxy)methane	61		62		40-140	2		30
Hexachlorobutadiene	63		63		40-140	0		30
Hexachloroethane	61		59		40-140	3		30
Isophorone	64		63		40-140	2		30
Naphthalene	62		61		40-140	2		30
Nitrobenzene	64		64		40-140	0		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427955

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG742179-2 WG742179-3								
Bis(2-Ethylhexyl)phthalate	72		73		40-140	1		30
Butyl benzyl phthalate	65		63		40-140	3		30
Di-n-butylphthalate	69		68		40-140	1		30
Di-n-octylphthalate	70		70		40-140	0		30
Diethyl phthalate	66		65		40-140	2		30
Dimethyl phthalate	67		66		40-140	2		30
Benzo(a)anthracene	69		69		40-140	0		30
Benzo(a)pyrene	69		71		40-140	3		30
Benzo(b)fluoranthene	68		69		40-140	1		30
Benzo(k)fluoranthene	67		70		40-140	4		30
Chrysene	68		70		40-140	3		30
Acenaphthylene	63		62		40-140	2		30
Anthracene	68		68		40-140	0		30
Benzo(ghi)perylene	67		66		40-140	2		30
Fluorene	67		66		40-140	2		30
Phenanthrene	68		69		40-140	1		30
Dibenzo(a,h)anthracene	66		66		40-140	0		30
Indeno(1,2,3-cd)Pyrene	68		68		40-140	0		30
Pyrene	65		64		40-140	2		30
Aniline	31	Q	31	Q	40-140	0		30
4-Chloroaniline	42		36	Q	40-140	15		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427955

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG742179-2 WG742179-3								
Dibenzofuran	69		69		40-140	0		30
2-Methylnaphthalene	68		67		40-140	1		30
Acetophenone	70		67		40-140	4		30
2,4,6-Trichlorophenol	71		71		30-130	0		30
2-Chlorophenol	67		67		30-130	0		30
2,4-Dichlorophenol	73		72		30-130	1		30
2,4-Dimethylphenol	71		71		30-130	0		30
2-Nitrophenol	68		69		30-130	1		30
4-Nitrophenol	76		74		30-130	3		30
2,4-Dinitrophenol	25	Q	27	Q	30-130	8		30
Pentachlorophenol	61		60		30-130	2		30
Phenol	67		67		30-130	0		30
2-Methylphenol	68		67		30-130	1		30
3-Methylphenol/4-Methylphenol	68		67		30-130	1		30
2,4,5-Trichlorophenol	74		71		30-130	4		30

## Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
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MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG742179-2 WG742179-3

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>
2-Fluorophenol	66		66		30-130
Phenol-d6	67		67		30-130
Nitrobenzene-d5	68		67		30-130
2-Fluorobiphenyl	69		69		30-130
2,4,6-Tribromophenol	72		75		30-130
4-Terphenyl-d14	70		69		30-130

# **PETROLEUM HYDROCARBONS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427955-02  
 Client ID: D-20 28-42 CLAY  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 11/20/14 20:51  
 Analyst: AR  
 Percent Solids: 80%

Date Collected: 11/19/14 14:30  
 Date Received: 11/19/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/20/14 00:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
--	--	--	--	--	--	--

TPH	ND		ug/kg	40000	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	67		40-140

Project Name: FAN PIER PARCEL D

Lab Number: L1427955

Project Number: 4426.9.1D

Report Date: 11/25/14

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 1,8015C(M)  
 Analytical Date: 11/20/14 09:58  
 Analyst: AR

Extraction Method: EPA 3546  
 Extraction Date: 11/20/14 00:13

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 02 Batch: WG742157-1					
TPH	ND		ug/kg	32300	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	80		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02 Batch: WG742157-2								
TPH	100		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	87				40-140



### Lab Duplicate Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02 QC Batch ID: WG742157-3 QC Sample: L1427979-01 Client ID: DUP Sample						
TPH	19100000	28600000	ug/kg	40		40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	0	Q	0	Q	40-140

# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427955-02  
 Client ID: D-20 28-42 CLAY  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082  
 Analytical Date: 11/21/14 22:22  
 Analyst: KB  
 Percent Solids: 80%

Date Collected: 11/19/14 14:30  
 Date Received: 11/19/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/20/14 00:29  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/20/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/20/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	40.8	--	1	A
Aroclor 1221	ND		ug/kg	40.8	--	1	A
Aroclor 1232	ND		ug/kg	40.8	--	1	A
Aroclor 1242	ND		ug/kg	40.8	--	1	A
Aroclor 1248	ND		ug/kg	40.8	--	1	A
Aroclor 1254	ND		ug/kg	40.8	--	1	A
Aroclor 1260	ND		ug/kg	40.8	--	1	A
Aroclor 1262	ND		ug/kg	40.8	--	1	A
Aroclor 1268	ND		ug/kg	40.8	--	1	A
PCBs, Total	ND		ug/kg	40.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	58		30-150	A
Decachlorobiphenyl	68		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		30-150	B
Decachlorobiphenyl	89		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**Method Blank Analysis  
 Batch Quality Control**

**Analytical Method:** 97,8082  
**Analytical Date:** 11/21/14 17:57  
**Analyst:** KB

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/20/14 00:29  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 11/20/14  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 11/20/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 02 Batch: WG742168-1						
Aroclor 1016	ND		ug/kg	31.5	--	A
Aroclor 1221	ND		ug/kg	31.5	--	A
Aroclor 1232	ND		ug/kg	31.5	--	A
Aroclor 1242	ND		ug/kg	31.5	--	A
Aroclor 1248	ND		ug/kg	31.5	--	A
Aroclor 1254	ND		ug/kg	31.5	--	A
Aroclor 1260	ND		ug/kg	31.5	--	A
Aroclor 1262	ND		ug/kg	31.5	--	A
Aroclor 1268	ND		ug/kg	31.5	--	A
PCBs, Total	ND		ug/kg	31.5	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	90		30-150	A
2,4,5,6-Tetrachloro-m-xylene	84		30-150	B
Decachlorobiphenyl	101		30-150	B



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02 Batch: WG742168-2 WG742168-3									
Aroclor 1016	66		73		40-140	10		30	A
Aroclor 1260	69		74		40-140	7		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		61		30-150	A
Decachlorobiphenyl	69		70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	60		61		30-150	B
Decachlorobiphenyl	78		79		30-150	B

## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427955-02  
 Client ID: D-20 28-42 CLAY  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 80%

Date Collected: 11/19/14 14:30  
 Date Received: 11/19/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.4		mg/kg	0.50	--	1	11/20/14 17:53	11/21/14 09:51	EPA 3050B	97,6010C	MG
Barium, Total	28		mg/kg	0.50	--	1	11/20/14 17:53	11/21/14 09:51	EPA 3050B	97,6010C	MG
Cadmium, Total	ND		mg/kg	0.50	--	1	11/20/14 17:53	11/21/14 09:51	EPA 3050B	97,6010C	MG
Chromium, Total	18		mg/kg	0.50	--	1	11/20/14 17:53	11/21/14 09:51	EPA 3050B	97,6010C	MG
Lead, Total	5.4		mg/kg	2.5	--	1	11/20/14 17:53	11/21/14 09:51	EPA 3050B	97,6010C	MG
Mercury, Total	ND		mg/kg	0.084	--	1	11/21/14 09:13	11/21/14 14:45	EPA 7471B	97,7471B	MC
Selenium, Total	ND		mg/kg	2.5	--	1	11/20/14 17:53	11/21/14 09:51	EPA 3050B	97,6010C	MG
Silver, Total	ND		mg/kg	0.50	--	1	11/20/14 17:53	11/21/14 09:51	EPA 3050B	97,6010C	MG



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02 Batch: WG742447-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	11/20/14 17:53	11/21/14 08:31	97,6010C	MG
Barium, Total	ND	mg/kg	0.40	--	1	11/20/14 17:53	11/21/14 08:31	97,6010C	MG
Cadmium, Total	ND	mg/kg	0.40	--	1	11/20/14 17:53	11/21/14 08:31	97,6010C	MG
Chromium, Total	ND	mg/kg	0.40	--	1	11/20/14 17:53	11/21/14 08:31	97,6010C	MG
Lead, Total	ND	mg/kg	2.0	--	1	11/20/14 17:53	11/21/14 08:31	97,6010C	MG
Selenium, Total	ND	mg/kg	2.0	--	1	11/20/14 17:53	11/21/14 08:31	97,6010C	MG
Silver, Total	ND	mg/kg	0.40	--	1	11/20/14 17:53	11/21/14 08:31	97,6010C	MG

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02 Batch: WG742594-1									
Mercury, Total	ND	mg/kg	0.083	--	1	11/21/14 09:13	11/21/14 14:33	97,7471B	MC

### Prep Information

Digestion Method: EPA 7471B



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D

**Lab Number:** L1427955

**Project Number:** 4426.9.1D

**Report Date:** 11/25/14

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 02 Batch: WG742447-2 WG742447-3 SRM Lot Number: D083-540								
Arsenic, Total	106		106		78-122	0		30
Barium, Total	84		90		82-117	7		30
Cadmium, Total	96		98		82-118	2		30
Chromium, Total	92		94		79-121	2		30
Lead, Total	97		100		81-119	3		30
Selenium, Total	102		102		78-123	0		30
Silver, Total	105		105		74-125	0		30
MCP Total Metals - Westborough Lab Associated sample(s): 02 Batch: WG742594-2 WG742594-3 SRM Lot Number: D083-540								
Mercury, Total	105		96		75-126	9		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

### SAMPLE RESULTS

**Lab ID:** L1427955-02  
**Client ID:** D-20 28-42 CLAY  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/19/14 14:30  
**Date Received:** 11/19/14  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	11/20/14 09:05	1,1030	MD



Project Name: FAN PIER PARCEL D

Lab Number: L1427955

Project Number: 4426.9.1D

Report Date: 11/25/14

## SAMPLE RESULTS

Lab ID: L1427955-01

Date Collected: 11/19/14 14:30

Client ID: D-20 S17 35-37

Date Received: 11/19/14

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.6		%	0.100	NA	1	-	11/20/14 01:56	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

**Lab ID:** L1427955-02  
**Client ID:** D-20 28-42 CLAY  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/19/14 14:30  
**Date Received:** 11/19/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	770		umhos/cm	10	--	1	-	11/20/14 01:44	1,9050A	LH
Solids, Total	79.6		%	0.100	NA	1	-	11/20/14 01:56	30,2540G	RT
pH (H)	8.1		SU	-	NA	1	-	11/20/14 01:40	1,9045D	LH
Cyanide, Reactive	ND		mg/kg	10	--	1	11/20/14 19:00	11/20/14 21:52	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	11/20/14 19:00	11/20/14 21:39	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1427955

Project Number: 4426.9.1D

Report Date: 11/25/14

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG742497-1										
Cyanide, Reactive	ND		mg/kg	10	--	1	11/20/14 19:00	11/20/14 21:49	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG742498-1										
Sulfide, Reactive	ND		mg/kg	10	--	1	11/20/14 19:00	11/20/14 21:37	1,7.3	TL

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG742175-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG742176-1								
Specific Conductance	98		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG742497-2								
Cyanide, Reactive	54		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG742498-2								
Sulfide, Reactive	82		-		60-125	-		40

## Lab Duplicate Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1427955

Report Date: 11/25/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG742175-2 QC Sample: L1427860-01 Client ID: DUP Sample						
pH	6.8	6.6	SU	3		5
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG742176-2 QC Sample: L1427789-08 Client ID: DUP Sample						
Specific Conductance	350	360	umhos/cm	3		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG742177-1 QC Sample: L1427789-08 Client ID: DUP Sample						
Solids, Total	77.9	79.3	%	2		20
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG742497-3 QC Sample: L1427860-01 Client ID: DUP Sample						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG742498-3 QC Sample: L1427860-01 Client ID: DUP Sample						
Sulfide, Reactive	ND	ND	mg/kg	NC		40



Project Name: FAN PIER PARCEL D

Lab Number: L1427955

Project Number: 4426.9.1D

Report Date: 11/25/14

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 11/19/2014 21:40

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1427955-01A	Vial MeOH preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1427955-01B	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1427955-01C	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1427955-02A	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427955-02B	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D**Project Number:** 4426.9.1D**Lab Number:** L1427955**Report Date:** 11/25/14**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1427955-02C	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

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

### Terms

**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.
- 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.

Report Format: Data Usability Report



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

#### **Data Qualifiers**

- 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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427955  
**Report Date:** 11/25/14

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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 April 15, 2014

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

### Westborough Facility

**EPA 524.2:** Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.

**EPA 8330A/B:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.

**EPA 8270D:** 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**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.

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**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**

**EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4,**

**SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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



# CHAIN OF CUSTODY

PAGE 1 OF 1

Westborough, MA    Mansfield, MA  
 TEL: 508-898-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3288

**Client Information**

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: 6178681420

Fax: 6178681423

Email: bdowning@mcphailgeo.com

 These samples have been Previously analyzed by Alpha**Project Information**

Project Name: Fan Pier Parcel D

Project Location: Boston, MA

Project #: 4426.9.1D

Project Manager: Ben Downing/Peter DeChaves

ALPHA Quote #: Fan Pier Pricing

**Turn-Around Time** Standard     Rush (ONLY IF PRE-APPROVED)

Due Date: 11-25-14 Time:

**Other Project Specific Requirements/Comments/Detection Limits:**

Standard TAT

\*Denotes obtain total solid sample from composite sample.

\*\*Minus VOCs

Date Rec'd In Lab: 11-19-14    ALPHA Job #: L14279SS

**Report Information**    **Data Deliverables**    **Billing Information**

FAX     EMAIL     Same as Client info    PO #:

ADEx     Add'l Deliverables

**Regulatory Requirements/Report Limits**

State/Fed Program: MA    Criteria: RCS-1

**MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS**

Yes     No    Are MCP Analytical Methods Required?

Yes     No    Are CT RCP (Reasonable Confidence Protocols) Required?

ANALYSIS														SAMPLE HANDLING	TOTAL # BOTTLES
VOCs (8260)*	Soil Management Package IV**														
														<input type="checkbox"/> Done	3
														<input checked="" type="checkbox"/> Not Needed	
														<input type="checkbox"/> Lab to do	
														Preservation	
														<input type="checkbox"/> Lab to do	
														(Please specify below)	
														Sample Specific Comments	

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials															Sample Specific Comments		
		Date	Time			VOCs (8260)*	Soil Management Package IV**															
27955-01	D-20 S17 35-37	11/19/14	1430	CLAY	ML	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3	
02	D-20 28-42 CLAY		1430			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3	

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-

**IS YOUR PROJECT MA MCP or CT RCP?**

FORM NO: 01-01(1)  
(rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
<i>Ben Downing</i>	11/19/14 1445	<i>Michael King</i>	11/19/14 1455
<i>Michael King</i>	11/19/14 1808	<i>Michael King</i>	11/19/14 1808

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

7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1427955

Instrument ID: Charlie.i Calibration Date: 21-NOV-2014 Time: 07:35

Lab File ID: 1121A02 Init. Calib. Date(s): 16-SEP-2 16-SEP-2

Sample No: 8260 CCAL Init. Calib. Times : 11:16 14:26

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.18838	.12822	.1	-32	20	F
chloromethane	.2894	.27946	.1	-3	20	
vinyl chloride	.26177	.2635	.1	1	20	
bromomethane	100	151	.1	51	20	F
chloroethane	.12837	.17413	.1	36	20	F
trichlorofluoromethane	.24322	.35484	.1	46	20	F
ethyl ether	.12606	.14698	.05	17	20	
1,1,-dichloroethene	.2019	.24319	.1	20	20	F
carbon disulfide	.7872	.81344	.1	3	20	
methylene chloride	.26247	.2903	.1	11	20	
acetone	.06883	.07349	.1	7	20	F
trans-1,2-dichloroethene	.23904	.28076	.1	17	20	
methyl tert butyl ether	.67865	.7585	.1	12	20	
Diisopropyl Ether	.95423	.99783	.05	5	20	
1,1-dichloroethane	.54506	.61447	.2	13	20	
Ethyl-Tert-Butyl-Ether	.99808	1.0831	.05	9	20	
cis-1,2-dichloroethene	.26008	.30349	.1	17	20	
2,2-dichloropropane	.35312	.44003	.05	25	20	F
bromochloromethane	.09885	.1186	.05	20	20	
chloroform	.45326	.53267	.2	18	20	
carbontetrachloride	100	118	.1	18	20	
tetrahydrofuran	.08143	.0817	.05	0	20	
1,1,1-trichloroethane	.37655	.46932	.1	25	20	F
2-butanone	.11994	.11644	.1	-3	20	
1,1-dichloropropene	.35091	.40728	.05	16	20	
benzene	1.0143	1.1435	.5	13	20	
Tertiary-Amyl Methyl Ether	.70276	.7609	.05	8	20	
1,2-dichloroethane	.39819	.44617	.1	12	20	
trichloroethene	.25588	.30338	.2	19	20	
dibromomethane	.14201	.15814	.05	11	20	
1,2-dichloropropane	.31098	.33444	.1	8	20	
bromodichloromethane	.33063	.38836	.2	17	20	
1,4-dioxane	.00283	.00285	.05	1	20	F
cis-1,3-dichloropropene	.39672	.45254	.2	14	20	
toluene	.87152	.79777	.4	-8	20	
4-methyl-2-pentanone	.12072	.10867	.1	-10	20	
tetrachloroethene	.29404	.28764	.2	-2	20	
trans-1,3-dichloropropene	.51056	.47437	.1	-7	20	

FORM VII MCP-8260HLW-10



7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1427955

Instrument ID: Charlie.i      Calibration Date: 21-NOV-2014      Time: 07:35

Lab File ID: 1121A02      Init. Calib. Date(s): 16-SEP-2      16-SEP-2

Sample No: 8260 CCAL      Init. Calib. Times : 11:16      14:26

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
1,1,2-trichloroethane	.25595	.23232	.1	-9	20	
chlorodibromomethane	.28602	.27134	.1	-5	20	
1,3-dichloropropane	.53692	.48145	.05	-10	20	
1,2-dibromoethane	.27517	.25187	.1	-8	20	
2-hexanone	.28389	.19731	.1	-30	20	F
chlorobenzene	.86505	.81536	.5	-6	20	
ethyl benzene	1.6625	1.6027	.1	-4	20	
1,1,1,2-tetrachloroethane	.28626	.27794	.05	-3	20	
p/m xylene	.6053	.58458	.1	-3	20	
o xylene	.57804	.55603	.3	-4	20	
styrene	.97643	.93257	.3	-4	20	
bromoform	100	77.404	.1	-23	20	F
isopropylbenzene	3.2798	2.8495	.1	-13	20	
bromobenzene	.68244	.58958	.05	-14	20	
n-propylbenzene	3.9822	3.5198	.05	-12	20	
1,1,2,2,-tetrachloroethane	.84799	.66882	.3	-21	20	F
2-chlorotoluene	2.7148	2.4054	.05	-11	20	
1,3,5-trimethylbenzene	2.7900	2.4518	.05	-12	20	
1,2,3-trichloropropane	.69672	.55058	.05	-21	20	F
4-chorotoluene	2.5413	2.1910	.05	-14	20	
tert-butylbenzene	2.2118	1.9156	.05	-13	20	
1,2,4-trimethylbenzene	2.8080	2.4730	.05	-12	20	
sec-butylbenzene	3.5308	3.1065	.05	-12	20	
p-isopropyltoluene	2.8240	2.4525	.05	-13	20	
1,3-dichlorobenzene	1.3579	1.1792	.6	-13	20	
1,4-dichlorobenzene	1.3916	1.1984	.5	-14	20	
n-butylbenzene	2.9003	2.5274	.05	-13	20	
1,2-dichlorobenzene	1.2664	1.0655	.4	-16	20	
1,2-dibromo-3-chloropropane	.10292	.07996	.05	-22	20	F
hexachlorobutadiene	.44822	.3949	.05	-12	20	
1,2,4-trichlorobenzene	.8545	.713	.2	-17	20	
naphthalene	2.2304	1.7204	.05	-23	20	F
1,2,3-trichlorobenzene	.78203	.63459	.05	-19	20	
dibromofluoromethane	.22745	.24961	.05	10	30	
1,2-dichloroethane-d4	.32209	.31751	.05	-1	30	
toluene-d8	1.3564	1.2130	.05	-11	30	
4-bromofluorobenzene	1.1968	1.1636	.05	-3	30	

FORM VII MCP-8260HLW-10



## ANALYTICAL REPORT

Lab Number:	L1427957
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	11/25/14

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), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
<del>L1427957-01</del>	<del>D-20 S2 2-4</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/19/14 08:15</del>	<del>11/19/14</del>
<del>L1427957-02</del>	<del>D-20 0 6 FILL</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/19/14 08:15</del>	<del>11/19/14</del>
L1427957-03	D-20 S6 10-12	SOIL	BOSTON, MA	11/19/14 11:00	11/19/14
<del>L1427957-04</del>	<del>D-20 S6 6-12 FILL</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/19/14 11:00</del>	<del>11/19/14</del>
L1427957-05	D-20 S9 16-18	SOIL	BOSTON, MA	11/19/14 11:30	11/19/14
L1427957-06	D-20 12-18 FILL	SOIL	BOSTON, MA	11/19/14 11:30	11/19/14
L1427957-07	D-20 S10 18-20	SOIL	BOSTON, MA	11/19/14 12:15	11/19/14
L1427957-08	D-20 18-24 FILL	SOIL	BOSTON, MA	11/19/14 12:15	11/19/14

Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

### Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. 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.

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**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
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### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1427957-01, -03, -05, and -07, did not meet the method required minimum response factor on the lowest calibration standard for acetone (0.07793), 2-butanone (0.07590) and trichloroethene (0.19010), as well as the average response factor for acetone and 2-butanone. The initial calibration verification is outside acceptance criteria for dichlorodifluoromethane (151%), but within overall method criteria.

The continuing calibration standard, associated with L1427957-01, -03, -05, and -07, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

##### Metals

In reference to question I:

All samples were analyzed for a subset of MCP elements per the Chain of Custody.

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: 11/25/14

# ORGANICS

# VOLATILES



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427957-05  
 Client ID: D-20 S9 16-18  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 11/21/14 12:53  
 Analyst: MV  
 Percent Solids: 75%

Date Collected: 11/19/14 11:30  
 Date Received: 11/19/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	21	--	1
1,1-Dichloroethane	ND		ug/kg	3.1	--	1
Chloroform	ND		ug/kg	3.1	--	1
Carbon tetrachloride	ND		ug/kg	2.1	--	1
1,2-Dichloropropane	ND		ug/kg	7.3	--	1
Dibromochloromethane	ND		ug/kg	2.1	--	1
1,1,2-Trichloroethane	ND		ug/kg	3.1	--	1
Tetrachloroethene	ND		ug/kg	2.1	--	1
Chlorobenzene	ND		ug/kg	2.1	--	1
Trichlorofluoromethane	ND		ug/kg	8.3	--	1
1,2-Dichloroethane	ND		ug/kg	2.1	--	1
1,1,1-Trichloroethane	ND		ug/kg	2.1	--	1
Bromodichloromethane	ND		ug/kg	2.1	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.1	--	1
cis-1,3-Dichloropropene	ND		ug/kg	2.1	--	1
1,3-Dichloropropene, Total	ND		ug/kg	2.1	--	1
1,1-Dichloropropene	ND		ug/kg	8.3	--	1
Bromoform	ND		ug/kg	8.3	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	2.1	--	1
Benzene	ND		ug/kg	2.1	--	1
Toluene	ND		ug/kg	3.1	--	1
Ethylbenzene	ND		ug/kg	2.1	--	1
Chloromethane	ND		ug/kg	8.3	--	1
Bromomethane	ND		ug/kg	4.2	--	1
Vinyl chloride	ND		ug/kg	4.2	--	1
Chloroethane	ND		ug/kg	4.2	--	1
1,1-Dichloroethene	ND		ug/kg	2.1	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.1	--	1
Trichloroethene	ND		ug/kg	2.1	--	1
1,2-Dichlorobenzene	ND		ug/kg	8.3	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

**Lab ID:** L1427957-05  
**Client ID:** D-20 S9 16-18  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/19/14 11:30  
**Date Received:** 11/19/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	8.3	--	1
1,4-Dichlorobenzene	ND		ug/kg	8.3	--	1
Methyl tert butyl ether	ND		ug/kg	4.2	--	1
p/m-Xylene	ND		ug/kg	4.2	--	1
o-Xylene	ND		ug/kg	4.2	--	1
Xylenes, Total	ND		ug/kg	4.2	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.1	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.1	--	1
Dibromomethane	ND		ug/kg	8.3	--	1
1,2,3-Trichloropropane	ND		ug/kg	8.3	--	1
Styrene	ND		ug/kg	4.2	--	1
Dichlorodifluoromethane	ND		ug/kg	21	--	1
Acetone	ND		ug/kg	75	--	1
Carbon disulfide	17		ug/kg	8.3	--	1
Methyl ethyl ketone	ND		ug/kg	21	--	1
Methyl isobutyl ketone	ND		ug/kg	21	--	1
2-Hexanone	ND		ug/kg	21	--	1
Bromochloromethane	ND		ug/kg	8.3	--	1
Tetrahydrofuran	ND		ug/kg	8.3	--	1
2,2-Dichloropropane	ND		ug/kg	10	--	1
1,2-Dibromoethane	ND		ug/kg	8.3	--	1
1,3-Dichloropropane	ND		ug/kg	8.3	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	2.1	--	1
Bromobenzene	ND		ug/kg	10	--	1
n-Butylbenzene	ND		ug/kg	2.1	--	1
sec-Butylbenzene	ND		ug/kg	2.1	--	1
tert-Butylbenzene	ND		ug/kg	8.3	--	1
o-Chlorotoluene	ND		ug/kg	8.3	--	1
p-Chlorotoluene	ND		ug/kg	8.3	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	8.3	--	1
Hexachlorobutadiene	ND		ug/kg	8.3	--	1
Isopropylbenzene	ND		ug/kg	2.1	--	1
p-Isopropyltoluene	ND		ug/kg	2.1	--	1
Naphthalene	ND		ug/kg	8.3	--	1
n-Propylbenzene	ND		ug/kg	2.1	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	8.3	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	8.3	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	8.3	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	8.3	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427957-05  
 Client ID: D-20 S9 16-18  
 Sample Location: BOSTON, MA

Date Collected: 11/19/14 11:30  
 Date Received: 11/19/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	10	--	1
Diisopropyl Ether	ND		ug/kg	8.3	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	8.3	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	8.3	--	1
1,4-Dioxane	ND		ug/kg	83	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	110		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

**Lab ID:** L1427957-07  
**Client ID:** D-20 S10 18-20  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil  
**Analytical Method:** 97,8260C  
**Analytical Date:** 11/21/14 13:19  
**Analyst:** MV  
**Percent Solids:** 80%

**Date Collected:** 11/19/14 12:15  
**Date Received:** 11/19/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	22	--	1
1,1-Dichloroethane	ND		ug/kg	3.2	--	1
Chloroform	ND		ug/kg	3.2	--	1
Carbon tetrachloride	ND		ug/kg	2.2	--	1
1,2-Dichloropropane	ND		ug/kg	7.5	--	1
Dibromochloromethane	ND		ug/kg	2.2	--	1
1,1,2-Trichloroethane	ND		ug/kg	3.2	--	1
Tetrachloroethene	ND		ug/kg	2.2	--	1
Chlorobenzene	ND		ug/kg	2.2	--	1
Trichlorofluoromethane	ND		ug/kg	8.6	--	1
1,2-Dichloroethane	ND		ug/kg	2.2	--	1
1,1,1-Trichloroethane	ND		ug/kg	2.2	--	1
Bromodichloromethane	ND		ug/kg	2.2	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.2	--	1
cis-1,3-Dichloropropene	ND		ug/kg	2.2	--	1
1,3-Dichloropropene, Total	ND		ug/kg	2.2	--	1
1,1-Dichloropropene	ND		ug/kg	8.6	--	1
Bromoform	ND		ug/kg	8.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	2.2	--	1
Benzene	ND		ug/kg	2.2	--	1
Toluene	ND		ug/kg	3.2	--	1
Ethylbenzene	ND		ug/kg	2.2	--	1
Chloromethane	ND		ug/kg	8.6	--	1
Bromomethane	ND		ug/kg	4.3	--	1
Vinyl chloride	ND		ug/kg	4.3	--	1
Chloroethane	ND		ug/kg	4.3	--	1
1,1-Dichloroethene	ND		ug/kg	2.2	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.2	--	1
Trichloroethene	ND		ug/kg	2.2	--	1
1,2-Dichlorobenzene	ND		ug/kg	8.6	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

**Lab ID:** L1427957-07  
**Client ID:** D-20 S10 18-20  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/19/14 12:15  
**Date Received:** 11/19/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	8.6	--	1
1,4-Dichlorobenzene	ND		ug/kg	8.6	--	1
Methyl tert butyl ether	ND		ug/kg	4.3	--	1
p/m-Xylene	ND		ug/kg	4.3	--	1
o-Xylene	ND		ug/kg	4.3	--	1
Xylenes, Total	ND		ug/kg	4.3	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.2	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.2	--	1
Dibromomethane	ND		ug/kg	8.6	--	1
1,2,3-Trichloropropane	ND		ug/kg	8.6	--	1
Styrene	ND		ug/kg	4.3	--	1
Dichlorodifluoromethane	ND		ug/kg	22	--	1
Acetone	ND		ug/kg	78	--	1
Carbon disulfide	16		ug/kg	8.6	--	1
Methyl ethyl ketone	ND		ug/kg	22	--	1
Methyl isobutyl ketone	ND		ug/kg	22	--	1
2-Hexanone	ND		ug/kg	22	--	1
Bromochloromethane	ND		ug/kg	8.6	--	1
Tetrahydrofuran	ND		ug/kg	8.6	--	1
2,2-Dichloropropane	ND		ug/kg	11	--	1
1,2-Dibromoethane	ND		ug/kg	8.6	--	1
1,3-Dichloropropane	ND		ug/kg	8.6	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	2.2	--	1
Bromobenzene	ND		ug/kg	11	--	1
n-Butylbenzene	ND		ug/kg	2.2	--	1
sec-Butylbenzene	ND		ug/kg	2.2	--	1
tert-Butylbenzene	ND		ug/kg	8.6	--	1
o-Chlorotoluene	ND		ug/kg	8.6	--	1
p-Chlorotoluene	ND		ug/kg	8.6	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	8.6	--	1
Hexachlorobutadiene	ND		ug/kg	8.6	--	1
Isopropylbenzene	ND		ug/kg	2.2	--	1
p-Isopropyltoluene	ND		ug/kg	2.2	--	1
Naphthalene	ND		ug/kg	8.6	--	1
n-Propylbenzene	ND		ug/kg	2.2	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	8.6	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	8.6	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	8.6	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	8.6	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427957-07  
 Client ID: D-20 S10 18-20  
 Sample Location: BOSTON, MA

Date Collected: 11/19/14 12:15  
 Date Received: 11/19/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	11	--	1
Diisopropyl Ether	ND		ug/kg	8.6	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	8.6	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	8.6	--	1
1,4-Dioxane	ND		ug/kg	86	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	110		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 11/21/14 08:56  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,03,05,07 Batch: WG742794-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 11/21/14 08:56  
**Analyst:** MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,03,05,07 Batch: WG742794-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 11/21/14 08:56  
**Analyst:** MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,03,05,07 Batch: WG742794-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	100		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07 Batch: WG742794-1 WG742794-2								
Methylene chloride	112		117		70-130	4		20
1,1-Dichloroethane	116		119		70-130	3		20
Chloroform	116		118		70-130	2		20
Carbon tetrachloride	124		124		70-130	0		20
1,2-Dichloropropane	113		120		70-130	6		20
Dibromochloromethane	97		102		70-130	5		20
1,1,2-Trichloroethane	99		102		70-130	3		20
Tetrachloroethene	104		107		70-130	3		20
Chlorobenzene	97		99		70-130	2		20
Trichlorofluoromethane	109		118		70-130	8		20
1,2-Dichloroethane	115		120		70-130	4		20
1,1,1-Trichloroethane	118		119		70-130	1		20
Bromodichloromethane	113		119		70-130	5		20
trans-1,3-Dichloropropene	99		104		70-130	5		20
cis-1,3-Dichloropropene	115		119		70-130	3		20
1,1-Dichloropropene	121		121		70-130	0		20
Bromoform	88		93		70-130	6		20
1,1,2,2-Tetrachloroethane	86		90		70-130	5		20
Benzene	112		115		70-130	3		20
Toluene	97		101		70-130	4		20
Ethylbenzene	99		100		70-130	1		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07 Batch: WG742794-1 WG742794-2								
Chloromethane	121		124		70-130	2		20
Bromomethane	120		121		70-130	1		20
Vinyl chloride	119		121		70-130	2		20
Chloroethane	126		130		70-130	3		20
1,1-Dichloroethene	120		122		70-130	2		20
trans-1,2-Dichloroethene	116		117		70-130	1		20
Trichloroethene	115		116		70-130	1		20
1,2-Dichlorobenzene	90		92		70-130	2		20
1,3-Dichlorobenzene	92		94		70-130	2		20
1,4-Dichlorobenzene	91		92		70-130	1		20
Methyl tert butyl ether	111		117		70-130	5		20
p/m-Xylene	99		101		70-130	2		20
o-Xylene	97		100		70-130	3		20
cis-1,2-Dichloroethene	115		119		70-130	3		20
Dibromomethane	117		123		70-130	5		20
1,2,3-Trichloropropane	87		92		70-130	6		20
Styrene	85		87		70-130	2		20
Dichlorodifluoromethane	114		117		70-130	3		20
Acetone	107		114		70-130	6		20
Carbon disulfide	113		113		70-130	0		20
Methyl ethyl ketone	104		109		70-130	5		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07 Batch: WG742794-1 WG742794-2								
Methyl isobutyl ketone	96		100		70-130	4		20
2-Hexanone	82		89		70-130	8		20
Bromochloromethane	118		122		70-130	3		20
Tetrahydrofuran	112		118		70-130	5		20
2,2-Dichloropropane	122		124		70-130	2		20
1,2-Dibromoethane	97		103		70-130	6		20
1,3-Dichloropropane	98		102		70-130	4		20
1,1,1,2-Tetrachloroethane	98		101		70-130	3		20
Bromobenzene	90		93		70-130	3		20
n-Butylbenzene	95		95		70-130	0		20
sec-Butylbenzene	94		95		70-130	1		20
tert-Butylbenzene	93		94		70-130	1		20
o-Chlorotoluene	97		76		70-130	24	Q	20
p-Chlorotoluene	91		93		70-130	2		20
1,2-Dibromo-3-chloropropane	84		87		70-130	4		20
Hexachlorobutadiene	100		101		70-130	1		20
Isopropylbenzene	91		92		70-130	1		20
p-Isopropyltoluene	94		95		70-130	1		20
Naphthalene	86		89		70-130	3		20
n-Propylbenzene	91		92		70-130	1		20
1,2,3-Trichlorobenzene	94		97		70-130	3		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07 Batch: WG742794-1 WG742794-2								
1,2,4-Trichlorobenzene	95		96		70-130	1		20
1,3,5-Trimethylbenzene	93		94		70-130	1		20
1,2,4-Trimethylbenzene	93		94		70-130	1		20
Diethyl ether	128		127		70-130	1		20
Diisopropyl Ether	112		118		70-130	5		20
Ethyl-Tert-Butyl-Ether	110		115		70-130	4		20
Tertiary-Amyl Methyl Ether	110		116		70-130	5		20
1,4-Dioxane	91		102		70-130	11		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		98		70-130
Toluene-d8	92		93		70-130
4-Bromofluorobenzene	99		99		70-130
Dibromofluoromethane	102		102		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427957-06  
 Client ID: D-20 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 11/21/14 23:51  
 Analyst: PS  
 Percent Solids: 75%

Date Collected: 11/19/14 11:30  
 Date Received: 11/19/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/20/14 02:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	180	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	220	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	200	--	1
2-Chloronaphthalene	ND		ug/kg	220	--	1
1,2-Dichlorobenzene	ND		ug/kg	220	--	1
1,3-Dichlorobenzene	ND		ug/kg	220	--	1
1,4-Dichlorobenzene	ND		ug/kg	220	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	220	--	1
2,4-Dinitrotoluene	ND		ug/kg	220	--	1
2,6-Dinitrotoluene	ND		ug/kg	220	--	1
Azobenzene	ND		ug/kg	220	--	1
Fluoranthene	ND		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	220	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	270	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	240	--	1
Hexachlorobutadiene	ND		ug/kg	220	--	1
Hexachloroethane	ND		ug/kg	180	--	1
Isophorone	ND		ug/kg	200	--	1
Naphthalene	ND		ug/kg	220	--	1
Nitrobenzene	ND		ug/kg	200	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	220	--	1
Butyl benzyl phthalate	ND		ug/kg	220	--	1
Di-n-butylphthalate	ND		ug/kg	220	--	1
Di-n-octylphthalate	ND		ug/kg	220	--	1
Diethyl phthalate	ND		ug/kg	220	--	1
Dimethyl phthalate	ND		ug/kg	220	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	180	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

**Lab ID:** L1427957-06  
**Client ID:** D-20 12-18 FILL  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/19/14 11:30  
**Date Received:** 11/19/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	180	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	180	--	1
Fluorene	ND		ug/kg	220	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	180	--	1
Pyrene	ND		ug/kg	130	--	1
Aniline	ND		ug/kg	270	--	1
4-Chloroaniline	ND		ug/kg	220	--	1
Dibenzofuran	ND		ug/kg	220	--	1
2-Methylnaphthalene	ND		ug/kg	270	--	1
Acetophenone	ND		ug/kg	220	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	220	--	1
2,4-Dichlorophenol	ND		ug/kg	200	--	1
2,4-Dimethylphenol	ND		ug/kg	220	--	1
2-Nitrophenol	ND		ug/kg	480	--	1
4-Nitrophenol	ND		ug/kg	310	--	1
2,4-Dinitrophenol	ND		ug/kg	1100	--	1
Pentachlorophenol	ND		ug/kg	440	--	1
Phenol	ND		ug/kg	220	--	1
2-Methylphenol	ND		ug/kg	220	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	320	--	1
2,4,5-Trichlorophenol	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		30-130
Phenol-d6	78		30-130
Nitrobenzene-d5	78		30-130
2-Fluorobiphenyl	86		30-130
2,4,6-Tribromophenol	92		30-130
4-Terphenyl-d14	103		30-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427957-08  
 Client ID: D-20 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 11/22/14 00:15  
 Analyst: PS  
 Percent Solids: 80%

Date Collected: 11/19/14 12:15  
 Date Received: 11/19/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/20/14 02:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

**Lab ID:** L1427957-08  
**Client ID:** D-20 18-24 FILL  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/19/14 12:15  
**Date Received:** 11/19/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	420	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	72		30-130
Phenol-d6	74		30-130
Nitrobenzene-d5	74		30-130
2-Fluorobiphenyl	81		30-130
2,4,6-Tribromophenol	85		30-130
4-Terphenyl-d14	92		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/21/14 18:19  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/20/14 02:20

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742179-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	97	--
Bis(2-chloroethyl)ether	ND		ug/kg	140	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	97	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	190	--
Bis(2-chloroethoxy)methane	ND		ug/kg	170	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	140	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	140	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	97	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/21/14 18:19  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/20/14 02:20

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742179-1					
Benzo(b)fluoranthene	ND		ug/kg	97	--
Benzo(k)fluoranthene	ND		ug/kg	97	--
Chrysene	ND		ug/kg	97	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	97	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	97	--
Dibenzo(a,h)anthracene	ND		ug/kg	97	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	97	--
Aniline	ND		ug/kg	190	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	190	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	97	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	140	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	320	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/21/14 18:19  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/20/14 02:20

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742179-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	70		30-130
Phenol-d6	70		30-130
Nitrobenzene-d5	71		30-130
2-Fluorobiphenyl	71		30-130
2,4,6-Tribromophenol	71		30-130
4-Terphenyl-d14	72		30-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742179-2 WG742179-3								
Acenaphthene	65		66		40-140	2		30
1,2,4-Trichlorobenzene	67		66		40-140	2		30
Hexachlorobenzene	62		64		40-140	3		30
Bis(2-chloroethyl)ether	61		60		40-140	2		30
2-Chloronaphthalene	65		63		40-140	3		30
1,2-Dichlorobenzene	62		61		40-140	2		30
1,3-Dichlorobenzene	62		62		40-140	0		30
1,4-Dichlorobenzene	61		61		40-140	0		30
3,3'-Dichlorobenzidine	44		44		40-140	0		30
2,4-Dinitrotoluene	66		65		40-140	2		30
2,6-Dinitrotoluene	63		62		40-140	2		30
Azobenzene	73		72		40-140	1		30
Fluoranthene	65		65		40-140	0		30
4-Bromophenyl phenyl ether	64		63		40-140	2		30
Bis(2-chloroisopropyl)ether	64		63		40-140	2		30
Bis(2-chloroethoxy)methane	61		62		40-140	2		30
Hexachlorobutadiene	63		63		40-140	0		30
Hexachloroethane	61		59		40-140	3		30
Isophorone	64		63		40-140	2		30
Naphthalene	62		61		40-140	2		30
Nitrobenzene	64		64		40-140	0		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742179-2 WG742179-3								
Bis(2-Ethylhexyl)phthalate	72		73		40-140	1		30
Butyl benzyl phthalate	65		63		40-140	3		30
Di-n-butylphthalate	69		68		40-140	1		30
Di-n-octylphthalate	70		70		40-140	0		30
Diethyl phthalate	66		65		40-140	2		30
Dimethyl phthalate	67		66		40-140	2		30
Benzo(a)anthracene	69		69		40-140	0		30
Benzo(a)pyrene	69		71		40-140	3		30
Benzo(b)fluoranthene	68		69		40-140	1		30
Benzo(k)fluoranthene	67		70		40-140	4		30
Chrysene	68		70		40-140	3		30
Acenaphthylene	63		62		40-140	2		30
Anthracene	68		68		40-140	0		30
Benzo(ghi)perylene	67		66		40-140	2		30
Fluorene	67		66		40-140	2		30
Phenanthrene	68		69		40-140	1		30
Dibenzo(a,h)anthracene	66		66		40-140	0		30
Indeno(1,2,3-cd)Pyrene	68		68		40-140	0		30
Pyrene	65		64		40-140	2		30
Aniline	31	Q	31	Q	40-140	0		30
4-Chloroaniline	42		36	Q	40-140	15		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742179-2 WG742179-3								
Dibenzofuran	69		69		40-140	0		30
2-Methylnaphthalene	68		67		40-140	1		30
Acetophenone	70		67		40-140	4		30
2,4,6-Trichlorophenol	71		71		30-130	0		30
2-Chlorophenol	67		67		30-130	0		30
2,4-Dichlorophenol	73		72		30-130	1		30
2,4-Dimethylphenol	71		71		30-130	0		30
2-Nitrophenol	68		69		30-130	1		30
4-Nitrophenol	76		74		30-130	3		30
2,4-Dinitrophenol	25	Q	27	Q	30-130	8		30
Pentachlorophenol	61		60		30-130	2		30
Phenol	67		67		30-130	0		30
2-Methylphenol	68		67		30-130	1		30
3-Methylphenol/4-Methylphenol	68		67		30-130	1		30
2,4,5-Trichlorophenol	74		71		30-130	4		30



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
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MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742179-2 WG742179-3

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>
2-Fluorophenol	66		66		30-130
Phenol-d6	67		67		30-130
Nitrobenzene-d5	68		67		30-130
2-Fluorobiphenyl	69		69		30-130
2,4,6-Tribromophenol	72		75		30-130
4-Terphenyl-d14	70		69		30-130

# PETROLEUM HYDROCARBONS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427957-06  
 Client ID: D-20 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 11/20/14 22:37  
 Analyst: AR  
 Percent Solids: 75%

Date Collected: 11/19/14 11:30  
 Date Received: 11/19/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/20/14 00:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	43800	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	67		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427957-08  
 Client ID: D-20 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 11/20/14 22:02  
 Analyst: AR  
 Percent Solids: 80%

Date Collected: 11/19/14 12:15  
 Date Received: 11/19/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/20/14 00:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	105000		ug/kg	41100	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	81		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 1,8015C(M)  
Analytical Date: 11/20/14 09:58  
Analyst: AR

Extraction Method: EPA 3546  
Extraction Date: 11/20/14 00:13

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742157-1					
TPH	ND		ug/kg	32300	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	80		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742157-2								
TPH	100		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	87				40-140

### Lab Duplicate Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02,04,06,08 QC Batch ID: WG742157-3 QC Sample: L1427979-01 Client ID: DUP Sample						
TPH	19100000	28600000	ug/kg	40		40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	0	Q	0	Q	40-140



# PCBS



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427957-06  
 Client ID: D-20 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082  
 Analytical Date: 11/21/14 23:16  
 Analyst: KB  
 Percent Solids: 75%

Date Collected: 11/19/14 11:30  
 Date Received: 11/19/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/20/14 00:29  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/20/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/20/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	42.3	--	1	A
Aroclor 1221	ND		ug/kg	42.3	--	1	A
Aroclor 1232	ND		ug/kg	42.3	--	1	A
Aroclor 1242	ND		ug/kg	42.3	--	1	A
Aroclor 1248	ND		ug/kg	42.3	--	1	A
Aroclor 1254	ND		ug/kg	42.3	--	1	A
Aroclor 1260	ND		ug/kg	42.3	--	1	A
Aroclor 1262	ND		ug/kg	42.3	--	1	A
Aroclor 1268	ND		ug/kg	42.3	--	1	A
PCBs, Total	ND		ug/kg	42.3	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	55		30-150	A
Decachlorobiphenyl	50		30-150	A
2,4,5,6-Tetrachloro-m-xylene	55		30-150	B
Decachlorobiphenyl	60		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427957-08  
 Client ID: D-20 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082  
 Analytical Date: 11/21/14 23:30  
 Analyst: KB  
 Percent Solids: 80%

Date Collected: 11/19/14 12:15  
 Date Received: 11/19/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/20/14 00:29  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/20/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/20/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	41.6	--	1	A
Aroclor 1221	ND		ug/kg	41.6	--	1	A
Aroclor 1232	ND		ug/kg	41.6	--	1	A
Aroclor 1242	ND		ug/kg	41.6	--	1	A
Aroclor 1248	ND		ug/kg	41.6	--	1	A
Aroclor 1254	ND		ug/kg	41.6	--	1	A
Aroclor 1260	ND		ug/kg	41.6	--	1	A
Aroclor 1262	ND		ug/kg	41.6	--	1	A
Aroclor 1268	ND		ug/kg	41.6	--	1	A
PCBs, Total	ND		ug/kg	41.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	66		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	78		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8082  
 Analytical Date: 11/21/14 17:57  
 Analyst: KB

Extraction Method: EPA 3546  
 Extraction Date: 11/20/14 00:29  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/20/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/20/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742168-1						
Aroclor 1016	ND		ug/kg	31.5	--	A
Aroclor 1221	ND		ug/kg	31.5	--	A
Aroclor 1232	ND		ug/kg	31.5	--	A
Aroclor 1242	ND		ug/kg	31.5	--	A
Aroclor 1248	ND		ug/kg	31.5	--	A
Aroclor 1254	ND		ug/kg	31.5	--	A
Aroclor 1260	ND		ug/kg	31.5	--	A
Aroclor 1262	ND		ug/kg	31.5	--	A
Aroclor 1268	ND		ug/kg	31.5	--	A
PCBs, Total	ND		ug/kg	31.5	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	90		30-150	A
2,4,5,6-Tetrachloro-m-xylene	84		30-150	B
Decachlorobiphenyl	101		30-150	B



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742168-2 WG742168-3									
Aroclor 1016	66		73		40-140	10		30	A
Aroclor 1260	69		74		40-140	7		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		61		30-150	A
Decachlorobiphenyl	69		70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	60		61		30-150	B
Decachlorobiphenyl	78		79		30-150	B

## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427957-06  
 Client ID: D-20 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 75%

Date Collected: 11/19/14 11:30  
 Date Received: 11/19/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	6.9		mg/kg	0.52	--	1	11/20/14 17:53	11/21/14 10:10	EPA 3050B	97,6010C	MG
Barium, Total	24		mg/kg	0.52	--	1	11/20/14 17:53	11/21/14 10:10	EPA 3050B	97,6010C	MG
Cadmium, Total	ND		mg/kg	0.52	--	1	11/20/14 17:53	11/21/14 10:10	EPA 3050B	97,6010C	MG
Chromium, Total	21		mg/kg	0.52	--	1	11/20/14 17:53	11/21/14 10:10	EPA 3050B	97,6010C	MG
Lead, Total	13		mg/kg	2.6	--	1	11/20/14 17:53	11/21/14 10:10	EPA 3050B	97,6010C	MG
Mercury, Total	0.159		mg/kg	0.084	--	1	11/20/14 08:57	11/20/14 12:18	EPA 7471B	97,7471B	MC
Selenium, Total	ND		mg/kg	2.6	--	1	11/20/14 17:53	11/21/14 10:10	EPA 3050B	97,6010C	MG
Silver, Total	ND		mg/kg	0.52	--	1	11/20/14 17:53	11/21/14 10:10	EPA 3050B	97,6010C	MG



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

Lab ID: L1427957-08  
 Client ID: D-20 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 80%

Date Collected: 11/19/14 12:15  
 Date Received: 11/19/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	5.6		mg/kg	0.48	--	1	11/20/14 17:53	11/21/14 10:14	EPA 3050B	97,6010C	MG
Barium, Total	30		mg/kg	0.48	--	1	11/20/14 17:53	11/21/14 10:14	EPA 3050B	97,6010C	MG
Cadmium, Total	ND		mg/kg	0.48	--	1	11/20/14 17:53	11/21/14 10:14	EPA 3050B	97,6010C	MG
Chromium, Total	22		mg/kg	0.48	--	1	11/20/14 17:53	11/21/14 10:14	EPA 3050B	97,6010C	MG
Lead, Total	6.3		mg/kg	2.4	--	1	11/20/14 17:53	11/21/14 10:14	EPA 3050B	97,6010C	MG
Mercury, Total	ND		mg/kg	0.083	--	1	11/21/14 09:13	11/21/14 14:47	EPA 7471B	97,7471B	MC
Selenium, Total	ND		mg/kg	2.4	--	1	11/20/14 17:53	11/21/14 10:14	EPA 3050B	97,6010C	MG
Silver, Total	ND		mg/kg	0.48	--	1	11/20/14 17:53	11/21/14 10:14	EPA 3050B	97,6010C	MG



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

### Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02,04,06 Batch: WG742187-1									
Mercury, Total	ND	mg/kg	0.083	--	1	11/20/14 08:57	11/20/14 11:34	97,7471B	MC

#### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742447-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	11/20/14 17:53	11/21/14 08:31	97,6010C	MG
Barium, Total	ND	mg/kg	0.40	--	1	11/20/14 17:53	11/21/14 08:31	97,6010C	MG
Cadmium, Total	ND	mg/kg	0.40	--	1	11/20/14 17:53	11/21/14 08:31	97,6010C	MG
Chromium, Total	ND	mg/kg	0.40	--	1	11/20/14 17:53	11/21/14 08:31	97,6010C	MG
Lead, Total	ND	mg/kg	2.0	--	1	11/20/14 17:53	11/21/14 08:31	97,6010C	MG
Selenium, Total	ND	mg/kg	2.0	--	1	11/20/14 17:53	11/21/14 08:31	97,6010C	MG
Silver, Total	ND	mg/kg	0.40	--	1	11/20/14 17:53	11/21/14 08:31	97,6010C	MG

#### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 08 Batch: WG742594-1									
Mercury, Total	ND	mg/kg	0.083	--	1	11/21/14 09:13	11/21/14 14:33	97,7471B	MC

#### Prep Information

Digestion Method: EPA 7471B



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Westborough Lab Associated sample(s): 02,04,06 Batch: WG742187-2 WG742187-3 SRM Lot Number: D083-540								
Mercury, Total	115		102		75-126	12		30
MCP Total Metals - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742447-2 WG742447-3 SRM Lot Number: D083-540								
Arsenic, Total	106		106		78-122	0		30
Barium, Total	84		90		82-117	7		30
Cadmium, Total	96		98		82-118	2		30
Chromium, Total	92		94		79-121	2		30
Lead, Total	97		100		81-119	3		30
Selenium, Total	102		102		78-123	0		30
Silver, Total	105		105		74-125	0		30
MCP Total Metals - Westborough Lab Associated sample(s): 08 Batch: WG742594-2 WG742594-3 SRM Lot Number: D083-540								
Mercury, Total	105		96		75-126	9		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

### SAMPLE RESULTS

**Lab ID:** L1427957-06  
**Client ID:** D-20 12-18 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/19/14 11:30  
**Date Received:** 11/19/14  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	11/20/14 09:05	1,1030	MD



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

### SAMPLE RESULTS

**Lab ID:** L1427957-08  
**Client ID:** D-20 18-24 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/19/14 12:15  
**Date Received:** 11/19/14  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	11/20/14 09:05	1,1030	MD



Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

## SAMPLE RESULTS

Lab ID: L1427957-05

Date Collected: 11/19/14 11:30

Client ID: D-20 S9 16-18

Date Received: 11/19/14

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.0		%	0.100	NA	1	-	11/20/14 01:56	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

**Lab ID:** L1427957-06  
**Client ID:** D-20 12-18 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/19/14 11:30  
**Date Received:** 11/19/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	290		umhos/cm	10	--	1	-	11/20/14 01:44	1,9050A	LH
Solids, Total	75.0		%	0.100	NA	1	-	11/20/14 01:56	30,2540G	RT
pH (H)	8.7		SU	-	NA	1	-	11/20/14 01:40	1,9045D	LH
Cyanide, Reactive	ND		mg/kg	10	--	1	11/20/14 19:00	11/20/14 21:53	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	11/20/14 19:00	11/20/14 21:40	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

## SAMPLE RESULTS

Lab ID: L1427957-07

Date Collected: 11/19/14 12:15

Client ID: D-20 S10 18-20

Date Received: 11/19/14

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.0		%	0.100	NA	1	-	11/20/14 01:56	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**SAMPLE RESULTS**

**Lab ID:** L1427957-08  
**Client ID:** D-20 18-24 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/19/14 12:15  
**Date Received:** 11/19/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	290		umhos/cm	10	--	1	-	11/20/14 01:44	1,9050A	LH
Solids, Total	80.0		%	0.100	NA	1	-	11/20/14 01:56	30,2540G	RT
pH (H)	8.8		SU	-	NA	1	-	11/20/14 01:40	1,9045D	LH
Cyanide, Reactive	ND		mg/kg	10	--	1	11/20/14 19:00	11/20/14 21:53	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	11/20/14 19:00	11/20/14 21:40	1,7.3	TL





Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742497-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	11/20/14 19:00	11/20/14 21:49	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 02,04,06,08 Batch: WG742498-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	11/20/14 19:00	11/20/14 21:37	1,7.3	TL

## Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742175-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742176-1								
Specific Conductance	98		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742497-2								
Cyanide, Reactive	54		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG742498-2								
Sulfide, Reactive	82		-		60-125	-		40

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 QC Batch ID: WG742175-2 QC Sample: L1427860-01 Client ID: DUP Sample						
pH	6.8	6.6	SU	3		5
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 QC Batch ID: WG742176-2 QC Sample: L1427789-08 Client ID: DUP Sample						
Specific Conductance	350	360	umhos/cm	3		20
General Chemistry - Westborough Lab Associated sample(s): 01-08 QC Batch ID: WG742177-1 QC Sample: L1427789-08 Client ID: DUP Sample						
Solids, Total	77.9	79.3	%	2		20
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 QC Batch ID: WG742497-3 QC Sample: L1427860-01 Client ID: DUP Sample						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 QC Batch ID: WG742498-3 QC Sample: L1427860-01 Client ID: DUP Sample						
Sulfide, Reactive	ND	ND	mg/kg	NC		40

Project Name: FAN PIER PARCEL D

Lab Number: L1427957

Project Number: 4426.9.1D

Report Date: 11/25/14

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 11/19/2014 21:36

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1427957-01A	Vial MeOH preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1427957-01B	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1427957-01C	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1427957-02A	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427957-02B	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1427957-02C	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427957-03A	Vial MeOH preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1427957-03B	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1427957-03C	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1427957-04A	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427957-04B	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427957-04C	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1427957-05A	Vial MeOH preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1427957-05B	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1427957-05C	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1427957-06A	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427957-06B	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427957-06C	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427957-07A	Vial MeOH preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1427957-07B	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1427957-07C	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1427957

Report Date: 11/25/14

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1427957-08A	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427957-08B	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1427957-08C	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

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

### Terms

**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.
- 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.

**Report Format:** Data Usability Report





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

#### **Data Qualifiers**

- 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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1427957  
**Report Date:** 11/25/14

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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 April 15, 2014

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

### Westborough Facility

**EPA 524.2:** Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.

**EPA 8330A/B:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.

**EPA 8270D:** 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**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.

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**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**

**EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4,**

**SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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

# CHAIN OF CUSTODY

PAGE 1 OF 2



Westborough, MA Mansfield, MA  
 TEL: 508-898-9220 TEL: 508-822-9300  
 FAX: 508-898-9193 FAX: 508-822-3288

### Project Information

Project Name: Fan Pier Parcel D

Project Location: Boston, MA

Project #: 4426.9.1D

Project Manager: Ben Downing/Peter DeChaves

ALPHA Quote #: Fan Pier Pricing

### Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: 11-25-14 Time:

### Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: 6178681420

Fax: 6178681423

Email: bdowning@mcphailgeo.com

These samples have been Previously analyzed by Alpha

### Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT

\*Denotes obtain total solid sample from composite sample.

\*\*Minus VOCs

Date Rec'd in Lab: 11-19-14

ALPHA Job #: L142 7957

### Report Information Data Deliverables Billing Information

FAX  EMAIL  
 ADEx  Add'l Deliverables

Same as Client info PO #:

### Regulatory Requirements/Report Limits

State/Fed Program

Criteria

MA

RCS-1

### MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

### ANALYSIS

VOCs (8260)*	Soil Management Package IV**	ANALYSIS																SAMPLE HANDLING	TOTAL # BOTTLES	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Filtration <input type="checkbox"/> Done <input checked="" type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)		
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			3
		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			3
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			3
		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			3
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			3

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
27957-01	D-20 S2 2-4	11/19/14	815	Flu	Trc
02	D-20 0-6 Flu		815		
03	D-20 S6 10-12		1100		
04	D-20 S6 6-12 Flu		1100		
05	D-20 S9 16-18		1130		
06	D-20 12-18 Flu		1130		

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-	-

## IS YOUR PROJECT MA MCP or CT RCP?

FORM NO: 01-01(1)  
(rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
<i>Tom Colman</i>	11/19/14 1445	<i>[Signature]</i>	11/19/14 1455
<i>[Signature]</i>	11/19/14 1828	<i>Michael Gray</i>	11/19/14 1828

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



# CHAIN OF CUSTODY

PAGE 2 OF 2

## Project Information

Westborough, MA    Mansfield, MA  
 TEL: 508-898-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3288

Project Name: Fan Pier Parcel D

## Client Information

Client: McPhail Associates, LLC  
 Address: 2269 Massachusetts Avenue  
 Cambridge, MA 02140  
 Phone: 6178681420  
 Fax: 6178681423  
 Email: bdowning@mcphailgeo.com  
 These samples have been Previously analyzed by Alpha

Project Location: Boston, MA  
 Project #: 4426.9.1D  
 Project Manager: Ben Downing/Peter DeChaves  
 ALPHA Quote #: Fan Pier Pricing

### Turn-Around Time

Standard     Rush (ONLY IF PRE-APPROVED)  
 Due Date: 12-25-14 Time:

Other Project Specific Requirements/Comments/Detection Limits:  
 Standard TAT  
 \*Denotes obtain total solid sample from composite sample.  
 \*\*Minus VOCs

Date Rec'd in Lab: 11-19-14    ALPHA Job #: L1927457

Report Information	Data Deliverables	Billing Information
<input type="checkbox"/> FAX	<input type="checkbox"/> EMAIL	<input checked="" type="checkbox"/> Same as Client info
<input checked="" type="checkbox"/> ADEx	<input type="checkbox"/> Add'l Deliverables	PO #:

### Regulatory Requirements/Report Limits

State/Fed Program	Criteria
MA	RCS-1

### MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes     No    Are MCP Analytical Methods Required?  
 Yes     No    Are CT RCP (Reasonable Confidence Protocols) Required?

ANALYSIS														SAMPLE HANDLING	TOTAL # BOTTLES	
VOCs (8260)*	Soil Management Package IV**															Filtration
														<input type="checkbox"/> Done	<input type="checkbox"/> Lab to do	3
														<input checked="" type="checkbox"/> Not Needed	<input type="checkbox"/> Lab to do	
														<input type="checkbox"/> Lab to do	(Please specify below)	
														Sample Specific Comments		

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
27957-07	D-20 S10 18-20	11/19/14	1215	FULL	me
38	D-20 18-27 Full		1215		

PLEASE ANSWER QUESTIONS ABOVE!

## IS YOUR PROJECT MA MCP or CT RCP?

FORM NO: 01-01(1)  
(rev. 30-JUL-07)

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-	-	-
Relinquished By:	Date/Time		Received By:		Date/Time										
<i>Tom Connor</i>	11/19/14 1445		<i>Mark</i>		11/19/14 1455										
<i>Mark</i>	11/19/14 1808		<i>Mark</i>		11-19-14 1808										

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

7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1427957

Instrument ID: Voal00.i      Calibration Date: 21-NOV-2014      Time: 07:37

Lab File ID: 1121A02      Init. Calib. Date(s): 13-NOV-2      13-NOV-2

Sample No: 8260 CCAL      Init. Calib. Times : 16:13      19:17

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.14533	.1659	.1	14	20	
chloromethane	.19741	.2392	.1	21	20	F
vinyl chloride	.27284	.32552	.1	19	20	
bromomethane	.30366	.3643	.1	20	20	
chloroethane	.248	.31173	.1	26	20	F
trichlorofluoromethane	.54147	.59288	.1	9	20	
ethyl ether	.17015	.21785	.05	28	20	F
1,1,-dichloroethene	.18774	.2264	.1	21	20	F
carbon disulfide	.62406	.70669	.1	13	20	
methylene chloride	.24797	.2784	.1	12	20	
acetone	.06164	.06614	.1	7	20	F
trans-1,2-dichloroethene	.22216	.25723	.1	16	20	
methyl tert butyl ether	.57302	.6381	.1	11	20	
Diisopropyl Ether	.58476	.65366	.05	12	20	
1,1-dichloroethane	.38267	.44536	.2	16	20	
Ethyl-Tert-Butyl-Ether	.63564	.69657	.05	10	20	
cis-1,2-dichloroethene	.24598	.28207	.1	15	20	
2,2-dichloropropane	.2916	.35623	.05	22	20	F
bromochloromethane	.13567	.16061	.05	18	20	
chloroform	.40578	.47061	.2	16	20	
carbontetrachloride	.29498	.36503	.1	24	20	F
tetrahydrofuran	100	112	.05	12	20	
1,1,1-trichloroethane	.33604	.39565	.1	18	20	
2-butanone	.09409	.09754	.1	4	20	F
1,1-dichloropropene	.26644	.32328	.05	21	20	F
benzene	.85692	.96166	.5	12	20	
Tertiary-Amyl Methyl Ether	.57687	.6366	.05	10	20	
1,2-dichloroethane	.29887	.34466	.1	15	20	
trichloroethene	.23606	.27221	.2	15	20	
dibromomethane	.14862	.17419	.05	17	20	
1,2-dichloropropane	.21144	.23977	.1	13	20	
bromodichloromethane	.32129	.36405	.2	13	20	
1,4-dioxane	5000	4570	.05	-9	20	
cis-1,3-dichloropropene	.34812	.40207	.2	15	20	
toluene	.62214	.60467	.4	-3	20	
4-methyl-2-pentanone	100	95.544	.1	-4	20	
tetrachloroethene	.28997	.30135	.2	4	20	
trans-1,3-dichloropropene	.37257	.3693	.1	-1	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1427957

Instrument ID: Voal00.i      Calibration Date: 21-NOV-2014      Time: 07:37

Lab File ID: 1121A02      Init. Calib. Date(s): 13-NOV-2      13-NOV-2

Sample No: 8260 CCAL      Init. Calib. Times : 16:13      19:17

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.19991	.19743	.1	-1	20
chlorodibromomethane	.32069	.30976	.1	-3	20
1,3-dichloropropane	.38959	.38016	.05	-2	20
1,2-dibromoethane	.25127	.2431	.1	-3	20
2-hexanone	.15296	.12482	.1	-18	20
chlorobenzene	.78079	.756	.5	-3	20
ethyl benzene	1.1781	1.1623	.1	-1	20
1,1,1,2-tetrachloroethane	.30881	.30304	.05	-2	20
p/m xylene	.4832	.47666	.1	-1	20
o xylene	.46472	.45238	.3	-3	20
styrene	200	170	.3	-15	20
bromoform	.42105	.36867	.1	-12	20
isopropylbenzene	1.9537	1.7761	.1	-9	20
bromobenzene	.61081	.5505	.05	-10	20
n-propylbenzene	2.3659	2.1424	.05	-9	20
1,1,2,2,-tetrachloroethane	.62214	.5335	.3	-14	20
2-chlorotoluene	1.4993	1.4579	.05	-3	20
1,3,5-trimethylbenzene	1.7443	1.6152	.05	-7	20
1,2,3-trichloropropane	.47281	.41029	.05	-13	20
4-chlorotoluene	1.4391	1.3138	.05	-9	20
tert-butylbenzene	1.4635	1.3551	.05	-7	20
1,2,4-trimethylbenzene	1.7362	1.6156	.05	-7	20
sec-butylbenzene	2.1909	2.0613	.05	-6	20
p-isopropyltoluene	1.8918	1.7757	.05	-6	20
1,3-dichlorobenzene	1.1726	1.0727	.6	-9	20
1,4-dichlorobenzene	1.2154	1.1047	.5	-9	20
n-butylbenzene	1.7078	1.6181	.05	-5	20
1,2-dichlorobenzene	1.1178	1.0060	.4	-10	20
1,2-dibromo-3-chloropropane	.12738	.10723	.05	-16	20
hexachlorobutadiene	.34438	.34416	.05	0	20
1,2,4-trichlorobenzene	.76576	.72429	.2	-5	20
naphthalene	2.0247	1.7305	.05	-15	20
1,2,3-trichlorobenzene	.74577	.70282	.05	-6	20
dibromofluoromethane	.29405	.30003	.05	2	30
1,2-dichloroethane-d4	.27565	.26729	.05	-3	30
toluene-d8	1.0971	1.0097	.05	-8	30
4-bromofluorobenzene	.74663	.73751	.05	-1	30

FORM VII MCP-8260HLW-10



## ANALYTICAL REPORT

Lab Number:	L1428212
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	12/02/14

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), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
<del>L1428212-01</del>	<del>D-19 S3 4 5-5</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/21/14 08:00</del>	<del>11/21/14</del>
<del>L1428212-02</del>	<del>D-19 0 6 FILL</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/21/14 08:00</del>	<del>11/21/14</del>
L1428212-03	D-19 S4 6.5-8	SOIL	BOSTON, MA	11/21/14 09:15	11/21/14
L1428212-04	D-19 6-12 FILL	SOIL	BOSTON, MA	11/21/14 09:15	11/21/14
L1428212-05	D-19 S7 12-14	SOIL	BOSTON, MA	11/21/14 09:45	11/21/14
L1428212-06	D-19 12-18 FILL	SOIL	BOSTON, MA	11/21/14 09:45	11/21/14
<del>L1428212-07</del>	<del>D-19 S12 22-24</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/21/14 10:45</del>	<del>11/21/14</del>
<del>L1428212-08</del>	<del>D-19 18-24 FILL</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/21/14 10:45</del>	<del>11/21/14</del>
<del>L1428212-09</del>	<del>D-18 S2 2-4</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/21/14 14:15</del>	<del>11/21/14</del>
<del>L1428212-10</del>	<del>D-18 0 6 FILL</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/21/14 14:15</del>	<del>11/21/14</del>
L1428212-11	D-18 S6 10-12	SOIL	BOSTON, MA	11/21/14 14:45	11/21/14
L1428212-12	D-18 6-12 FILL	SOIL	BOSTON, MA	11/21/14 14:45	11/21/14

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

### MADEP MCP Response Action Analytical Report Certification

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

### Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. 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.

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**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1428212-01, -03, -05, -07, -09, and -11, did not meet the method required minimum response factor on the lowest calibration standard for 4-methyl-2-pentanone (0.05631) and 1,4-dioxane (0.00244), as well as the average response factor for 2-butanone, 4-methyl-2-pentanone, and 1,4-dioxane. The initial calibration verification standard is outside acceptance criteria for dichlorodifluoromethane (144%), but within overall method criteria.

The continuing calibration standard, associated with L1428212-01, -03, -05, -07, -09, and -11, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

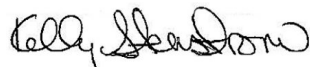
##### Metals

In reference to question I:

All samples were analyzed for a subset of MCP elements per the Chain of Custody.

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

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 12/02/14

# ORGANICS

# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-03  
 Client ID: D-19 S4 6.5-8  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 11/24/14 12:36  
 Analyst: BN  
 Percent Solids: 79%

Date Collected: 11/21/14 09:15  
 Date Received: 11/21/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	32	--	1
1,1-Dichloroethane	ND		ug/kg	4.7	--	1
Chloroform	ND		ug/kg	4.7	--	1
Carbon tetrachloride	ND		ug/kg	3.2	--	1
1,2-Dichloropropane	ND		ug/kg	11	--	1
Dibromochloromethane	ND		ug/kg	3.2	--	1
1,1,2-Trichloroethane	ND		ug/kg	4.7	--	1
Tetrachloroethene	ND		ug/kg	3.2	--	1
Chlorobenzene	ND		ug/kg	3.2	--	1
Trichlorofluoromethane	ND		ug/kg	13	--	1
1,2-Dichloroethane	ND		ug/kg	3.2	--	1
1,1,1-Trichloroethane	ND		ug/kg	3.2	--	1
Bromodichloromethane	ND		ug/kg	3.2	--	1
trans-1,3-Dichloropropene	ND		ug/kg	3.2	--	1
cis-1,3-Dichloropropene	ND		ug/kg	3.2	--	1
1,3-Dichloropropene, Total	ND		ug/kg	3.2	--	1
1,1-Dichloropropene	ND		ug/kg	13	--	1
Bromoform	ND		ug/kg	13	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	3.2	--	1
Benzene	ND		ug/kg	3.2	--	1
Toluene	ND		ug/kg	4.7	--	1
Ethylbenzene	ND		ug/kg	3.2	--	1
Chloromethane	ND		ug/kg	13	--	1
Bromomethane	ND		ug/kg	6.3	--	1
Vinyl chloride	ND		ug/kg	6.3	--	1
Chloroethane	ND		ug/kg	6.3	--	1
1,1-Dichloroethene	ND		ug/kg	3.2	--	1
trans-1,2-Dichloroethene	ND		ug/kg	4.7	--	1
Trichloroethene	ND		ug/kg	3.2	--	1
1,2-Dichlorobenzene	ND		ug/kg	13	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

## SAMPLE RESULTS

Lab ID: L1428212-03  
 Client ID: D-19 S4 6.5-8  
 Sample Location: BOSTON, MA

Date Collected: 11/21/14 09:15  
 Date Received: 11/21/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	13	--	1
1,4-Dichlorobenzene	ND		ug/kg	13	--	1
Methyl tert butyl ether	ND		ug/kg	6.3	--	1
p/m-Xylene	ND		ug/kg	6.3	--	1
o-Xylene	ND		ug/kg	6.3	--	1
Xylenes, Total	ND		ug/kg	6.3	--	1
cis-1,2-Dichloroethene	ND		ug/kg	3.2	--	1
1,2-Dichloroethene, Total	ND		ug/kg	3.2	--	1
Dibromomethane	ND		ug/kg	13	--	1
1,2,3-Trichloropropane	ND		ug/kg	13	--	1
Styrene	ND		ug/kg	6.3	--	1
Dichlorodifluoromethane	ND		ug/kg	32	--	1
Acetone	ND		ug/kg	110	--	1
Carbon disulfide	ND		ug/kg	13	--	1
Methyl ethyl ketone	ND		ug/kg	32	--	1
Methyl isobutyl ketone	ND		ug/kg	32	--	1
2-Hexanone	ND		ug/kg	32	--	1
Bromochloromethane	ND		ug/kg	13	--	1
Tetrahydrofuran	ND		ug/kg	13	--	1
2,2-Dichloropropane	ND		ug/kg	16	--	1
1,2-Dibromoethane	ND		ug/kg	13	--	1
1,3-Dichloropropane	ND		ug/kg	13	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	3.2	--	1
Bromobenzene	ND		ug/kg	16	--	1
n-Butylbenzene	ND		ug/kg	3.2	--	1
sec-Butylbenzene	ND		ug/kg	3.2	--	1
tert-Butylbenzene	ND		ug/kg	13	--	1
o-Chlorotoluene	ND		ug/kg	13	--	1
p-Chlorotoluene	ND		ug/kg	13	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	13	--	1
Hexachlorobutadiene	ND		ug/kg	13	--	1
Isopropylbenzene	ND		ug/kg	3.2	--	1
p-Isopropyltoluene	ND		ug/kg	3.2	--	1
Naphthalene	ND		ug/kg	13	--	1
n-Propylbenzene	ND		ug/kg	3.2	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	13	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	13	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	13	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	13	--	1



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-03  
 Client ID: D-19 S4 6.5-8  
 Sample Location: BOSTON, MA

Date Collected: 11/21/14 09:15  
 Date Received: 11/21/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	16	--	1
Diisopropyl Ether	ND		ug/kg	13	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	13	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	13	--	1
1,4-Dioxane	ND		ug/kg	130	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	108		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-05  
 Client ID: D-19 S7 12-14  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 11/24/14 13:03  
 Analyst: BN  
 Percent Solids: 80%

Date Collected: 11/21/14 09:45  
 Date Received: 11/21/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	20	--	1
1,1-Dichloroethane	ND		ug/kg	3.0	--	1
Chloroform	ND		ug/kg	3.0	--	1
Carbon tetrachloride	ND		ug/kg	2.0	--	1
1,2-Dichloropropane	ND		ug/kg	7.0	--	1
Dibromochloromethane	ND		ug/kg	2.0	--	1
1,1,2-Trichloroethane	ND		ug/kg	3.0	--	1
Tetrachloroethene	ND		ug/kg	2.0	--	1
Chlorobenzene	ND		ug/kg	2.0	--	1
Trichlorofluoromethane	ND		ug/kg	8.0	--	1
1,2-Dichloroethane	ND		ug/kg	2.0	--	1
1,1,1-Trichloroethane	ND		ug/kg	2.0	--	1
Bromodichloromethane	ND		ug/kg	2.0	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.0	--	1
cis-1,3-Dichloropropene	ND		ug/kg	2.0	--	1
1,3-Dichloropropene, Total	ND		ug/kg	2.0	--	1
1,1-Dichloropropene	ND		ug/kg	8.0	--	1
Bromoform	ND		ug/kg	8.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	2.0	--	1
Benzene	ND		ug/kg	2.0	--	1
Toluene	ND		ug/kg	3.0	--	1
Ethylbenzene	ND		ug/kg	2.0	--	1
Chloromethane	ND		ug/kg	8.0	--	1
Bromomethane	ND		ug/kg	4.0	--	1
Vinyl chloride	ND		ug/kg	4.0	--	1
Chloroethane	ND		ug/kg	4.0	--	1
1,1-Dichloroethene	ND		ug/kg	2.0	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.0	--	1
Trichloroethene	ND		ug/kg	2.0	--	1
1,2-Dichlorobenzene	ND		ug/kg	8.0	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

## SAMPLE RESULTS

Lab ID: L1428212-05

Date Collected: 11/21/14 09:45

Client ID: D-19 S7 12-14

Date Received: 11/21/14

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	8.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	8.0	--	1
Methyl tert butyl ether	ND		ug/kg	4.0	--	1
p/m-Xylene	ND		ug/kg	4.0	--	1
o-Xylene	ND		ug/kg	4.0	--	1
Xylenes, Total	ND		ug/kg	4.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.0	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.0	--	1
Dibromomethane	ND		ug/kg	8.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	8.0	--	1
Styrene	ND		ug/kg	4.0	--	1
Dichlorodifluoromethane	ND		ug/kg	20	--	1
Acetone	ND		ug/kg	72	--	1
Carbon disulfide	22		ug/kg	8.0	--	1
Methyl ethyl ketone	ND		ug/kg	20	--	1
Methyl isobutyl ketone	ND		ug/kg	20	--	1
2-Hexanone	ND		ug/kg	20	--	1
Bromochloromethane	ND		ug/kg	8.0	--	1
Tetrahydrofuran	ND		ug/kg	8.0	--	1
2,2-Dichloropropane	ND		ug/kg	10	--	1
1,2-Dibromoethane	ND		ug/kg	8.0	--	1
1,3-Dichloropropane	ND		ug/kg	8.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	2.0	--	1
Bromobenzene	ND		ug/kg	10	--	1
n-Butylbenzene	ND		ug/kg	2.0	--	1
sec-Butylbenzene	ND		ug/kg	2.0	--	1
tert-Butylbenzene	ND		ug/kg	8.0	--	1
o-Chlorotoluene	ND		ug/kg	8.0	--	1
p-Chlorotoluene	ND		ug/kg	8.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	8.0	--	1
Hexachlorobutadiene	ND		ug/kg	8.0	--	1
Isopropylbenzene	ND		ug/kg	2.0	--	1
p-Isopropyltoluene	ND		ug/kg	2.0	--	1
Naphthalene	ND		ug/kg	8.0	--	1
n-Propylbenzene	ND		ug/kg	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	8.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	8.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	8.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	8.0	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-05  
 Client ID: D-19 S7 12-14  
 Sample Location: BOSTON, MA

Date Collected: 11/21/14 09:45  
 Date Received: 11/21/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	10	--	1
Diisopropyl Ether	ND		ug/kg	8.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	8.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	8.0	--	1
1,4-Dioxane	ND		ug/kg	80	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	107		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-11  
 Client ID: D-18 S6 10-12  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 11/24/14 14:22  
 Analyst: BN  
 Percent Solids: 82%

Date Collected: 11/21/14 14:45  
 Date Received: 11/21/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	16	--	1
1,1-Dichloroethane	ND		ug/kg	2.5	--	1
Chloroform	ND		ug/kg	2.5	--	1
Carbon tetrachloride	ND		ug/kg	1.6	--	1
1,2-Dichloropropane	ND		ug/kg	5.8	--	1
Dibromochloromethane	ND		ug/kg	1.6	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.5	--	1
Tetrachloroethene	ND		ug/kg	1.6	--	1
Chlorobenzene	ND		ug/kg	1.6	--	1
Trichlorofluoromethane	ND		ug/kg	6.6	--	1
1,2-Dichloroethane	ND		ug/kg	1.6	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.6	--	1
Bromodichloromethane	ND		ug/kg	1.6	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.6	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.6	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.6	--	1
1,1-Dichloropropene	ND		ug/kg	6.6	--	1
Bromoform	ND		ug/kg	6.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.6	--	1
Benzene	ND		ug/kg	1.6	--	1
Toluene	ND		ug/kg	2.5	--	1
Ethylbenzene	ND		ug/kg	1.6	--	1
Chloromethane	ND		ug/kg	6.6	--	1
Bromomethane	ND		ug/kg	3.3	--	1
Vinyl chloride	ND		ug/kg	3.3	--	1
Chloroethane	ND		ug/kg	3.3	--	1
1,1-Dichloroethene	ND		ug/kg	1.6	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.5	--	1
Trichloroethene	ND		ug/kg	1.6	--	1
1,2-Dichlorobenzene	ND		ug/kg	6.6	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

## SAMPLE RESULTS

Lab ID: L1428212-11

Date Collected: 11/21/14 14:45

Client ID: D-18 S6 10-12

Date Received: 11/21/14

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	6.6	--	1
1,4-Dichlorobenzene	ND		ug/kg	6.6	--	1
Methyl tert butyl ether	ND		ug/kg	3.3	--	1
p/m-Xylene	ND		ug/kg	3.3	--	1
o-Xylene	ND		ug/kg	3.3	--	1
Xylenes, Total	ND		ug/kg	3.3	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.6	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.6	--	1
Dibromomethane	ND		ug/kg	6.6	--	1
1,2,3-Trichloropropane	ND		ug/kg	6.6	--	1
Styrene	ND		ug/kg	3.3	--	1
Dichlorodifluoromethane	ND		ug/kg	16	--	1
Acetone	ND		ug/kg	59	--	1
Carbon disulfide	ND		ug/kg	6.6	--	1
Methyl ethyl ketone	ND		ug/kg	16	--	1
Methyl isobutyl ketone	ND		ug/kg	16	--	1
2-Hexanone	ND		ug/kg	16	--	1
Bromochloromethane	ND		ug/kg	6.6	--	1
Tetrahydrofuran	ND		ug/kg	6.6	--	1
2,2-Dichloropropane	ND		ug/kg	8.2	--	1
1,2-Dibromoethane	ND		ug/kg	6.6	--	1
1,3-Dichloropropane	ND		ug/kg	6.6	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.6	--	1
Bromobenzene	ND		ug/kg	8.2	--	1
n-Butylbenzene	ND		ug/kg	1.6	--	1
sec-Butylbenzene	ND		ug/kg	1.6	--	1
tert-Butylbenzene	ND		ug/kg	6.6	--	1
o-Chlorotoluene	ND		ug/kg	6.6	--	1
p-Chlorotoluene	ND		ug/kg	6.6	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	6.6	--	1
Hexachlorobutadiene	ND		ug/kg	6.6	--	1
Isopropylbenzene	ND		ug/kg	1.6	--	1
p-Isopropyltoluene	ND		ug/kg	1.6	--	1
Naphthalene	ND		ug/kg	6.6	--	1
n-Propylbenzene	ND		ug/kg	1.6	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	6.6	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	6.6	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	6.6	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	6.6	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-11  
 Client ID: D-18 S6 10-12  
 Sample Location: BOSTON, MA

Date Collected: 11/21/14 14:45  
 Date Received: 11/21/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	8.2	--	1
Diisopropyl Ether	ND		ug/kg	6.6	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	6.6	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	6.6	--	1
1,4-Dioxane	ND		ug/kg	66	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	111		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 11/24/14 09:03  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,03,05,07,09,11 Batch: WG743226-6					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 11/24/14 09:03  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,03,05,07,09,11 Batch: WG743226-6					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 11/24/14 09:03  
**Analyst:** BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,03,05,07,09,11 Batch: WG743226-6					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	105		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG743226-4 WG743226-5								
Methylene chloride	114		118		70-130	3		20
1,1-Dichloroethane	108		105		70-130	3		20
Chloroform	109		108		70-130	1		20
Carbon tetrachloride	117		109		70-130	7		20
1,2-Dichloropropane	104		103		70-130	1		20
Dibromochloromethane	100		98		70-130	2		20
1,1,2-Trichloroethane	100		97		70-130	3		20
Tetrachloroethene	117		103		70-130	13		20
Chlorobenzene	106		103		70-130	3		20
Trichlorofluoromethane	124		112		70-130	10		20
1,2-Dichloroethane	105		102		70-130	3		20
1,1,1-Trichloroethane	114		109		70-130	4		20
Bromodichloromethane	102		102		70-130	0		20
trans-1,3-Dichloropropene	103		97		70-130	6		20
cis-1,3-Dichloropropene	104		102		70-130	2		20
1,1-Dichloropropene	115		109		70-130	5		20
Bromoform	94		96		70-130	2		20
1,1,2,2-Tetrachloroethane	95		98		70-130	3		20
Benzene	113		105		70-130	7		20
Toluene	110		95		70-130	15		20
Ethylbenzene	110		104		70-130	6		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG743226-4 WG743226-5								
Chloromethane	114		108		70-130	5		20
Bromomethane	96		93		70-130	3		20
Vinyl chloride	116		106		70-130	9		20
Chloroethane	120		116		70-130	3		20
1,1-Dichloroethene	95		92		70-130	3		20
trans-1,2-Dichloroethene	112		105		70-130	6		20
Trichloroethene	113		107		70-130	5		20
1,2-Dichlorobenzene	104		104		70-130	0		20
1,3-Dichlorobenzene	108		107		70-130	1		20
1,4-Dichlorobenzene	106		104		70-130	2		20
Methyl tert butyl ether	100		101		70-130	1		20
p/m-Xylene	112		107		70-130	5		20
o-Xylene	113		106		70-130	6		20
cis-1,2-Dichloroethene	110		110		70-130	0		20
Dibromomethane	99		100		70-130	1		20
1,2,3-Trichloropropane	95		96		70-130	1		20
Styrene	112		106		70-130	6		20
Dichlorodifluoromethane	104		93		70-130	11		20
Acetone	83		87		70-130	5		20
Carbon disulfide	95		102		70-130	7		20
Methyl ethyl ketone	89		90		70-130	1		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG743226-4 WG743226-5								
Methyl isobutyl ketone	94		96		70-130	2		20
2-Hexanone	88		88		70-130	0		20
Bromochloromethane	107		107		70-130	0		20
Tetrahydrofuran	96		101		70-130	5		20
2,2-Dichloropropane	116		107		70-130	8		20
1,2-Dibromoethane	99		98		70-130	1		20
1,3-Dichloropropane	101		99		70-130	2		20
1,1,1,2-Tetrachloroethane	106		103		70-130	3		20
Bromobenzene	101		101		70-130	0		20
n-Butylbenzene	121		112		70-130	8		20
sec-Butylbenzene	113		105		70-130	7		20
tert-Butylbenzene	110		103		70-130	7		20
o-Chlorotoluene	104		100		70-130	4		20
p-Chlorotoluene	107		104		70-130	3		20
1,2-Dibromo-3-chloropropane	90		92		70-130	2		20
Hexachlorobutadiene	115		106		70-130	8		20
Isopropylbenzene	109		104		70-130	5		20
p-Isopropyltoluene	115		107		70-130	7		20
Naphthalene	91		92		70-130	1		20
n-Propylbenzene	111		105		70-130	6		20
1,2,3-Trichlorobenzene	105		103		70-130	2		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG743226-4 WG743226-5								
1,2,4-Trichlorobenzene	112		108		70-130	4		20
1,3,5-Trimethylbenzene	109		104		70-130	5		20
1,2,4-Trimethylbenzene	109		106		70-130	3		20
Diethyl ether	103		108		70-130	5		20
Diisopropyl Ether	104		104		70-130	0		20
Ethyl-Tert-Butyl-Ether	104		106		70-130	2		20
Tertiary-Amyl Methyl Ether	104		101		70-130	3		20
1,4-Dioxane	84		88		70-130	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		96		70-130
Toluene-d8	101		92		70-130
4-Bromofluorobenzene	99		100		70-130
Dibromofluoromethane	104		106		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-04  
 Client ID: D-19 6-12 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 11/25/14 01:42  
 Analyst: PS  
 Percent Solids: 79%

Date Collected: 11/21/14 09:15  
 Date Received: 11/21/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/23/14 03:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	230	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

**Lab ID:** L1428212-04  
**Client ID:** D-19 6-12 FILL  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/21/14 09:15  
**Date Received:** 11/21/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	130	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	420	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	47		30-130
Phenol-d6	55		30-130
Nitrobenzene-d5	54		30-130
2-Fluorobiphenyl	64		30-130
2,4,6-Tribromophenol	61		30-130
4-Terphenyl-d14	86		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-06  
 Client ID: D-19 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 11/25/14 02:07  
 Analyst: PS  
 Percent Solids: 80%

Date Collected: 11/21/14 09:45  
 Date Received: 11/21/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/23/14 03:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

**Lab ID:** L1428212-06  
**Client ID:** D-19 12-18 FILL  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/21/14 09:45  
**Date Received:** 11/21/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	440	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	980	--	1
Pentachlorophenol	ND		ug/kg	410	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	41		30-130
Phenol-d6	49		30-130
Nitrobenzene-d5	46		30-130
2-Fluorobiphenyl	56		30-130
2,4,6-Tribromophenol	52		30-130
4-Terphenyl-d14	75		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-12  
 Client ID: D-18 6-12 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 11/25/14 03:19  
 Analyst: PS  
 Percent Solids: 82%

Date Collected: 11/21/14 14:45  
 Date Received: 11/21/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/23/14 03:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

**Lab ID:** L1428212-12  
**Client ID:** D-18 6-12 FILL  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/21/14 14:45  
**Date Received:** 11/21/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	430	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	960	--	1
Pentachlorophenol	ND		ug/kg	400	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		30-130
Phenol-d6	71		30-130
Nitrobenzene-d5	67		30-130
2-Fluorobiphenyl	82		30-130
2,4,6-Tribromophenol	63		30-130
4-Terphenyl-d14	103		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/24/14 18:28  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/23/14 03:22

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG743100-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/24/14 18:28  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/23/14 03:22

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG743100-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/24/14 18:28  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/23/14 03:22

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG743100-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		30-130
Phenol-d6	55		30-130
Nitrobenzene-d5	50		30-130
2-Fluorobiphenyl	61		30-130
2,4,6-Tribromophenol	67		30-130
4-Terphenyl-d14	81		30-130



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG743100-2 WG743100-3								
Acenaphthene	66		73		40-140	10		30
1,2,4-Trichlorobenzene	59		67		40-140	13		30
Hexachlorobenzene	80		85		40-140	6		30
Bis(2-chloroethyl)ether	51		60		40-140	16		30
2-Chloronaphthalene	74		79		40-140	7		30
1,2-Dichlorobenzene	50		61		40-140	20		30
1,3-Dichlorobenzene	50		59		40-140	17		30
1,4-Dichlorobenzene	49		58		40-140	17		30
3,3'-Dichlorobenzidine	71		77		40-140	8		30
2,4-Dinitrotoluene	84		87		40-140	4		30
2,6-Dinitrotoluene	87		90		40-140	3		30
Azobenzene	78		86		40-140	10		30
Fluoranthene	86		88		40-140	2		30
4-Bromophenyl phenyl ether	79		85		40-140	7		30
Bis(2-chloroisopropyl)ether	48		58		40-140	19		30
Bis(2-chloroethoxy)methane	64		69		40-140	8		30
Hexachlorobutadiene	52		64		40-140	21		30
Hexachloroethane	47		55		40-140	16		30
Isophorone	67		73		40-140	9		30
Naphthalene	56		65		40-140	15		30
Nitrobenzene	54		64		40-140	17		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG743100-2 WG743100-3								
Bis(2-Ethylhexyl)phthalate	81		86		40-140	6		30
Butyl benzyl phthalate	86		88		40-140	2		30
Di-n-butylphthalate	82		87		40-140	6		30
Di-n-octylphthalate	85		90		40-140	6		30
Diethyl phthalate	82		87		40-140	6		30
Dimethyl phthalate	78		84		40-140	7		30
Benzo(a)anthracene	80		84		40-140	5		30
Benzo(a)pyrene	80		85		40-140	6		30
Benzo(b)fluoranthene	79		83		40-140	5		30
Benzo(k)fluoranthene	80		82		40-140	2		30
Chrysene	78		82		40-140	5		30
Acenaphthylene	77		84		40-140	9		30
Anthracene	80		83		40-140	4		30
Benzo(ghi)perylene	80		82		40-140	2		30
Fluorene	76		82		40-140	8		30
Phenanthrene	78		82		40-140	5		30
Dibenzo(a,h)anthracene	82		85		40-140	4		30
Indeno(1,2,3-cd)Pyrene	79		82		40-140	4		30
Pyrene	85		87		40-140	2		30
Aniline	39	Q	45		40-140	14		30
4-Chloroaniline	76		83		40-140	9		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG743100-2 WG743100-3								
Dibenzofuran	77		85		40-140	10		30
2-Methylnaphthalene	69		77		40-140	11		30
Acetophenone	62		69		40-140	11		30
2,4,6-Trichlorophenol	91		98		30-130	7		30
2-Chlorophenol	62		71		30-130	14		30
2,4-Dichlorophenol	78		86		30-130	10		30
2,4-Dimethylphenol	75		80		30-130	6		30
2-Nitrophenol	67		76		30-130	13		30
4-Nitrophenol	92		95		30-130	3		30
2,4-Dinitrophenol	28	Q	25	Q	30-130	11		30
Pentachlorophenol	78		81		30-130	4		30
Phenol	67		73		30-130	9		30
2-Methylphenol	72		77		30-130	7		30
3-Methylphenol/4-Methylphenol	75		80		30-130	6		30
2,4,5-Trichlorophenol	100		107		30-130	7		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG743100-2 WG743100-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
2-Fluorophenol	51		61		30-130
Phenol-d6	62		68		30-130
Nitrobenzene-d5	60		66		30-130
2-Fluorobiphenyl	68		77		30-130
2,4,6-Tribromophenol	76		81		30-130
4-Terphenyl-d14	86		89		30-130

# PETROLEUM HYDROCARBONS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-04  
 Client ID: D-19 6-12 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 11/26/14 06:45  
 Analyst: AR  
 Percent Solids: 79%

Date Collected: 11/21/14 09:15  
 Date Received: 11/21/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/23/14 01:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	87800		ug/kg	40000	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	86		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-06  
 Client ID: D-19 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 11/25/14 19:46  
 Analyst: AR  
 Percent Solids: 80%

Date Collected: 11/21/14 09:45  
 Date Received: 11/21/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/23/14 01:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
--	--	--	--	--	--	--

TPH	ND		ug/kg	39700	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	53		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-12  
 Client ID: D-18 6-12 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 11/25/14 20:56  
 Analyst: AR  
 Percent Solids: 82%

Date Collected: 11/21/14 14:45  
 Date Received: 11/21/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/23/14 01:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	40100	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	69		40-140



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8015C(M)  
**Analytical Date:** 11/25/14 16:17  
**Analyst:** AR

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/23/14 01:09

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG743091-1					
TPH	ND		ug/kg	31800	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	80		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG743091-2								
TPH	96		-		40-140	-		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
o-Terphenyl	89				40-140

**Lab Duplicate Analysis**  
**Batch Quality Control**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02,04,06,08,10,12 QC Batch ID: WG743091-3 QC Sample: L1428212-02 Client ID: D-19 0-6 FILL						
TPH	306000	276000	ug/kg	10		40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	79		69		40-140



# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-04  
 Client ID: D-19 6-12 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082  
 Analytical Date: 11/24/14 20:43  
 Analyst: JT  
 Percent Solids: 79%

Date Collected: 11/21/14 09:15  
 Date Received: 11/21/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/22/14 11:31  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/23/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/23/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	41.2	--	1	A
Aroclor 1221	ND		ug/kg	41.2	--	1	A
Aroclor 1232	ND		ug/kg	41.2	--	1	A
Aroclor 1242	ND		ug/kg	41.2	--	1	A
Aroclor 1248	ND		ug/kg	41.2	--	1	A
Aroclor 1254	ND		ug/kg	41.2	--	1	B
Aroclor 1260	ND		ug/kg	41.2	--	1	A
Aroclor 1262	ND		ug/kg	41.2	--	1	A
Aroclor 1268	ND		ug/kg	41.2	--	1	A
PCBs, Total	ND		ug/kg	41.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	57		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	69		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-06  
 Client ID: D-19 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082  
 Analytical Date: 11/24/14 20:56  
 Analyst: JT  
 Percent Solids: 80%

Date Collected: 11/21/14 09:45  
 Date Received: 11/21/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/22/14 11:31  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/23/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/23/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	39.8	--	1	A
Aroclor 1221	ND		ug/kg	39.8	--	1	A
Aroclor 1232	ND		ug/kg	39.8	--	1	A
Aroclor 1242	ND		ug/kg	39.8	--	1	A
Aroclor 1248	ND		ug/kg	39.8	--	1	A
Aroclor 1254	ND		ug/kg	39.8	--	1	B
Aroclor 1260	ND		ug/kg	39.8	--	1	A
Aroclor 1262	ND		ug/kg	39.8	--	1	A
Aroclor 1268	ND		ug/kg	39.8	--	1	A
PCBs, Total	ND		ug/kg	39.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	59		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	70		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-12  
 Client ID: D-18 6-12 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082  
 Analytical Date: 11/24/14 21:38  
 Analyst: JT  
 Percent Solids: 82%

Date Collected: 11/21/14 14:45  
 Date Received: 11/21/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/22/14 11:31  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/23/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/23/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	38.6	--	1	A
Aroclor 1221	ND		ug/kg	38.6	--	1	A
Aroclor 1232	ND		ug/kg	38.6	--	1	A
Aroclor 1242	ND		ug/kg	38.6	--	1	A
Aroclor 1248	ND		ug/kg	38.6	--	1	A
Aroclor 1254	ND		ug/kg	38.6	--	1	A
Aroclor 1260	ND		ug/kg	38.6	--	1	A
Aroclor 1262	ND		ug/kg	38.6	--	1	A
Aroclor 1268	ND		ug/kg	38.6	--	1	A
PCBs, Total	ND		ug/kg	38.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	A
Decachlorobiphenyl	68		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	83		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**Method Blank Analysis  
 Batch Quality Control**

Analytical Method: 97,8082  
 Analytical Date: 11/24/14 19:34  
 Analyst: JT

Extraction Method: EPA 3546  
 Extraction Date: 11/22/14 11:31  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/23/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/23/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 02,04,06,08,12 Batch: WG743000-1						
Aroclor 1016	ND		ug/kg	31.9	--	A
Aroclor 1221	ND		ug/kg	31.9	--	A
Aroclor 1232	ND		ug/kg	31.9	--	A
Aroclor 1242	ND		ug/kg	31.9	--	A
Aroclor 1248	ND		ug/kg	31.9	--	A
Aroclor 1260	ND		ug/kg	31.9	--	A
Aroclor 1262	ND		ug/kg	31.9	--	A
Aroclor 1268	ND		ug/kg	31.9	--	A
PCBs, Total	ND		ug/kg	31.9	--	A
Aroclor 1254	ND		ug/kg	31.9	--	B

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	47		30-150	A
Decachlorobiphenyl	48		30-150	A
2,4,5,6-Tetrachloro-m-xylene	51		30-150	B
Decachlorobiphenyl	59		30-150	B





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8082  
**Analytical Date:** 12/01/14 02:58  
**Analyst:** KB

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/26/14 19:41  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 11/27/14  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 11/27/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 10 Batch: WG744248-1						
Aroclor 1016	ND		ug/kg	32.8	--	A
Aroclor 1221	ND		ug/kg	32.8	--	A
Aroclor 1232	ND		ug/kg	32.8	--	A
Aroclor 1242	ND		ug/kg	32.8	--	A
Aroclor 1248	ND		ug/kg	32.8	--	A
Aroclor 1254	ND		ug/kg	32.8	--	A
Aroclor 1260	ND		ug/kg	32.8	--	A
Aroclor 1262	ND		ug/kg	32.8	--	A
Aroclor 1268	ND		ug/kg	32.8	--	A
PCBs, Total	ND		ug/kg	32.8	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	82		30-150	A
Decachlorobiphenyl	69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	81		30-150	B
Decachlorobiphenyl	94		30-150	B



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02,04,06,08,12 Batch: WG743000-2 WG743000-3									
Aroclor 1016	70		85		40-140	19		30	A
Aroclor 1260	63		79		40-140	23		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	56		70		30-150	A
Decachlorobiphenyl	56		68		30-150	A
2,4,5,6-Tetrachloro-m-xylene	59		70		30-150	B
Decachlorobiphenyl	67		80		30-150	B

## Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 10 Batch: WG744248-2 WG744248-3									
Aroclor 1016	81		79		40-140	3		30	A
Aroclor 1260	64		68		40-140	6		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		76		30-150	A
Decachlorobiphenyl	68		62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		74		30-150	B
Decachlorobiphenyl	85		83		30-150	B

## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-04  
 Client ID: D-19 6-12 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 79%

Date Collected: 11/21/14 09:15  
 Date Received: 11/21/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	6.4		mg/kg	0.48	--	1	11/24/14 17:43	11/25/14 12:43	EPA 3050B	97,6010C	TT
Barium, Total	29		mg/kg	0.48	--	1	11/24/14 17:43	11/25/14 12:43	EPA 3050B	97,6010C	TT
Cadmium, Total	ND		mg/kg	0.48	--	1	11/24/14 17:43	11/25/14 12:43	EPA 3050B	97,6010C	TT
Chromium, Total	21		mg/kg	0.48	--	1	11/24/14 17:43	11/25/14 12:43	EPA 3050B	97,6010C	TT
Lead, Total	12		mg/kg	2.4	--	1	11/24/14 17:43	11/25/14 12:43	EPA 3050B	97,6010C	TT
Mercury, Total	ND		mg/kg	0.082	--	1	11/22/14 11:40	11/24/14 11:38	EPA 7471B	97,7471B	MC
Selenium, Total	ND		mg/kg	2.4	--	1	11/24/14 17:43	11/25/14 12:43	EPA 3050B	97,6010C	TT
Silver, Total	ND		mg/kg	0.48	--	1	11/24/14 17:43	11/25/14 12:43	EPA 3050B	97,6010C	TT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-06  
 Client ID: D-19 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 80%

Date Collected: 11/21/14 09:45  
 Date Received: 11/21/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	6.3		mg/kg	0.48	--	1	11/24/14 17:43	11/25/14 12:47	EPA 3050B	97,6010C	TT
Barium, Total	45		mg/kg	0.48	--	1	11/24/14 17:43	11/25/14 12:47	EPA 3050B	97,6010C	TT
Cadmium, Total	ND		mg/kg	0.48	--	1	11/24/14 17:43	11/25/14 12:47	EPA 3050B	97,6010C	TT
Chromium, Total	30		mg/kg	0.48	--	1	11/24/14 17:43	11/25/14 12:47	EPA 3050B	97,6010C	TT
Lead, Total	10		mg/kg	2.4	--	1	11/24/14 17:43	11/25/14 12:47	EPA 3050B	97,6010C	TT
Mercury, Total	ND		mg/kg	0.088	--	1	11/22/14 11:40	11/24/14 11:40	EPA 7471B	97,7471B	MC
Selenium, Total	ND		mg/kg	2.4	--	1	11/24/14 17:43	11/25/14 12:47	EPA 3050B	97,6010C	TT
Silver, Total	ND		mg/kg	0.48	--	1	11/24/14 17:43	11/25/14 12:47	EPA 3050B	97,6010C	TT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428212-12  
 Client ID: D-18 6-12 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 82%

Date Collected: 11/21/14 14:45  
 Date Received: 11/21/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.8		mg/kg	0.46	--	1	11/24/14 17:43	11/25/14 13:38	EPA 3050B	97,6010C	TT
Barium, Total	35		mg/kg	0.46	--	1	11/24/14 17:43	11/25/14 13:38	EPA 3050B	97,6010C	TT
Cadmium, Total	ND		mg/kg	0.46	--	1	11/24/14 17:43	11/25/14 13:38	EPA 3050B	97,6010C	TT
Chromium, Total	22		mg/kg	0.46	--	1	11/24/14 17:43	11/25/14 13:38	EPA 3050B	97,6010C	TT
Lead, Total	7.3		mg/kg	2.3	--	1	11/24/14 17:43	11/25/14 13:38	EPA 3050B	97,6010C	TT
Mercury, Total	ND		mg/kg	0.076	--	1	11/22/14 11:40	11/24/14 11:46	EPA 7471B	97,7471B	MC
Selenium, Total	ND		mg/kg	2.3	--	1	11/24/14 17:43	11/25/14 13:38	EPA 3050B	97,6010C	TT
Silver, Total	ND		mg/kg	0.46	--	1	11/24/14 17:43	11/25/14 13:38	EPA 3050B	97,6010C	TT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG742949-1									
Mercury, Total	ND	mg/kg	0.083	--	1	11/22/14 11:40	11/24/14 11:17	97,7471B	MC

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG743451-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	11/24/14 17:43	11/25/14 11:47	97,6010C	TT
Barium, Total	ND	mg/kg	0.40	--	1	11/24/14 17:43	11/25/14 11:47	97,6010C	TT
Cadmium, Total	ND	mg/kg	0.40	--	1	11/24/14 17:43	11/25/14 11:47	97,6010C	TT
Chromium, Total	ND	mg/kg	0.40	--	1	11/24/14 17:43	11/25/14 11:47	97,6010C	TT
Lead, Total	ND	mg/kg	2.0	--	1	11/24/14 17:43	11/25/14 11:47	97,6010C	TT
Selenium, Total	ND	mg/kg	2.0	--	1	11/24/14 17:43	11/25/14 11:47	97,6010C	TT
Silver, Total	ND	mg/kg	0.40	--	1	11/24/14 17:43	11/25/14 11:47	97,6010C	TT

### Prep Information

Digestion Method: EPA 3050B



## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG742949-2 WG742949-3 SRM Lot Number: D083-540								
Mercury, Total	100		105		75-126	5		30
MCP Total Metals - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG743451-2 WG743451-3 SRM Lot Number: D083-540								
Arsenic, Total	106		98		78-122	8		30
Barium, Total	96		96		82-117	0		30
Cadmium, Total	98		93		82-118	5		30
Chromium, Total	98		97		79-121	1		30
Lead, Total	94		90		81-119	4		30
Selenium, Total	96		96		78-123	0		30
Silver, Total	105		102		74-125	3		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

### SAMPLE RESULTS

**Lab ID:** L1428212-04  
**Client ID:** D-19 6-12 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/21/14 09:15  
**Date Received:** 11/21/14  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Soil  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	11/22/14 13:32	1,1030	TL



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

### SAMPLE RESULTS

**Lab ID:** L1428212-06  
**Client ID:** D-19 12-18 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/21/14 09:45  
**Date Received:** 11/21/14  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Soil  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	11/22/14 13:32	1,1030	TL



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

### SAMPLE RESULTS

**Lab ID:** L1428212-12  
**Client ID:** D-18 6-12 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/21/14 14:45  
**Date Received:** 11/21/14  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Soil  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	11/22/14 13:32	1,1030	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

## SAMPLE RESULTS

Lab ID: L1428212-03

Date Collected: 11/21/14 09:15

Client ID: D-19 S4 6.5-8

Date Received: 11/21/14

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.1		%	0.100	NA	1	-	11/22/14 12:31	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

**Lab ID:** L1428212-04  
**Client ID:** D-19 6-12 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/21/14 09:15  
**Date Received:** 11/21/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	140		umhos/cm	10	--	1	-	11/22/14 02:00	1,9050A	LH
Solids, Total	79.1		%	0.100	NA	1	-	11/22/14 12:31	30,2540G	RT
pH (H)	9.2		SU	-	NA	1	-	11/22/14 02:00	1,9045D	LH
Cyanide, Reactive	ND		mg/kg	10	--	1	11/23/14 17:10	11/23/14 19:10	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	11/23/14 17:10	11/23/14 18:55	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

## SAMPLE RESULTS

Lab ID: L1428212-05

Date Collected: 11/21/14 09:45

Client ID: D-19 S7 12-14

Date Received: 11/21/14

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.4		%	0.100	NA	1	-	11/22/14 12:31	30,2540G	RT





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

**Lab ID:** L1428212-06  
**Client ID:** D-19 12-18 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/21/14 09:45  
**Date Received:** 11/21/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	120		umhos/cm	10	--	1	-	11/22/14 02:00	1,9050A	LH
Solids, Total	80.4		%	0.100	NA	1	-	11/22/14 12:31	30,2540G	RT
pH (H)	9.9		SU	-	NA	1	-	11/22/14 02:00	1,9045D	LH
Cyanide, Reactive	ND		mg/kg	10	--	1	11/23/14 17:10	11/23/14 19:10	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	11/23/14 17:10	11/23/14 18:56	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

## SAMPLE RESULTS

Lab ID: L1428212-11

Date Collected: 11/21/14 14:45

Client ID: D-18 S6 10-12

Date Received: 11/21/14

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.2		%	0.100	NA	1	-	11/22/14 12:31	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

**Lab ID:** L1428212-12  
**Client ID:** D-18 6-12 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/21/14 14:45  
**Date Received:** 11/21/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	88		umhos/cm	10	--	1	-	11/22/14 02:00	1,9050A	LH
Solids, Total	82.2		%	0.100	NA	1	-	11/22/14 12:31	30,2540G	RT
pH (H)	8.1		SU	-	NA	1	-	11/22/14 02:00	1,9045D	LH
Cyanide, Reactive	ND		mg/kg	10	--	1	11/23/14 17:10	11/23/14 19:11	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	11/23/14 17:10	11/23/14 18:57	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG743138-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	11/23/14 17:10	11/23/14 19:03	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG743140-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	11/23/14 17:10	11/23/14 18:46	1,7.3	TL

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG742914-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG742923-1								
Specific Conductance	98		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG743138-2								
Cyanide, Reactive	30		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG743140-2								
Sulfide, Reactive	116		-		60-125	-		40

### Lab Duplicate Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10,12 QC Batch ID: WG742914-2 QC Sample: L1428267-01 Client ID: DUP Sample						
pH	5.8	5.7	SU	2		5
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10,12 QC Batch ID: WG742923-2 QC Sample: L1428159-01 Client ID: DUP Sample						
Specific Conductance	100	110	umhos/cm	10		20
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG743012-1 QC Sample: L1428184-01 Client ID: DUP Sample						
Solids, Total	95.9	95.9	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10,12 QC Batch ID: WG743138-3 QC Sample: L1428267-01 Client ID: DUP Sample						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10,12 QC Batch ID: WG743140-3 QC Sample: L1428267-01 Client ID: DUP Sample						
Sulfide, Reactive	ND	ND	mg/kg	NC		40



Project Name: FAN PIER PARCEL D

Lab Number: L1428212

Project Number: 4426.9.1D

Report Date: 12/02/14

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 11/22/2014 00:01

## Cooler Information Custody Seal

## Cooler

A	Absent
B	Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1428212-01A	Vial MeOH preserved	B	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1428212-01B	Vial water preserved	B	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1428212-01C	Vial water preserved	B	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1428212-02A	Glass 250ml/8oz unpreserved	B	N/A	2.9	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428212-02B	Glass 250ml/8oz unpreserved	B	N/A	2.9	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1428212

Report Date: 12/02/14

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1428212-02C	Glass 250ml/8oz unpreserved	B	N/A	2.9	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428212-03A	Vial MeOH preserved	B	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1428212-03B	Vial water preserved	B	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1428212-03C	Vial water preserved	B	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1428212-04A	Glass 250ml/8oz unpreserved	B	N/A	2.9	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428212-04B	Glass 250ml/8oz unpreserved	B	N/A	2.9	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428212-04C	Glass 250ml/8oz unpreserved	B	N/A	2.9	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days





Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1428212

Report Date: 12/02/14

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1428212-05A	Vial MeOH preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1428212-05B	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1428212-05C	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1428212-06A	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428212-06B	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428212-06C	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428212-07A	Vial MeOH preserved	B	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1428212-07B	Vial water preserved	B	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1428212-07C	Vial water preserved	B	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1428212-08A	Glass 250ml/8oz unpreserved	B	N/A	2.9	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428212-08B	Glass 250ml/8oz unpreserved	B	N/A	2.9	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428212-08C	Glass 250ml/8oz unpreserved	B	N/A	2.9	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428212-09A	Vial MeOH preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1428212-09B	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1428212-09C	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1428212-10A	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1428212-10B	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428212-10C	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428212-11A	Vial MeOH preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1428212-11B	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1428212-11C	Vial water preserved	A	N/A	2.3	Y	Absent	MCP-8260HLW-10(14)
L1428212-12A	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428212-12B	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D**Project Number:** 4426.9.1D**Lab Number:** L1428212**Report Date:** 12/02/14**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1428212-12C	Glass 250ml/8oz unpreserved	A	N/A	2.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

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

### Terms

**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.
- 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.

**Report Format:** Data Usability Report



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

#### **Data Qualifiers**

- 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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428212  
**Report Date:** 12/02/14

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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 April 15, 2014

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

### Westborough Facility

**EPA 524.2:** Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.

**EPA 8330A/B:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.

**EPA 8270D:** 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**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.

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**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.**

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



# CHAIN OF CUSTODY

PAGE 1 OF 2



Westborough, MA Mansfield, MA  
 TEL: 508-898-9220 TEL: 508-822-9300  
 FAX: 508-898-9193 FAX: 508-822-3288

### Client Information

Client: McPhail Associates, LLC  
 Address: 2269 Massachusetts Avenue  
 Cambridge, MA 02140  
 Phone: 6178681420  
 Fax: 6178681423  
 Email: bdowning@mcphailgeo.com  
 These samples have been Previously analyzed by Alpha

### Project Information

Project Name: Fan Pier Parcel D  
 Project Location: Boston, MA  
 Project #: 4426.9.1D  
 Project Manager: Ben Downing/Peter DeChaves  
 ALPHA Quote #: Fan Pier Pricing

### Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)  
 Due Date: 12/1/14 Time:

### Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT  
 \*Denotes obtain total solid sample from composite sample.  
 \*\*Minus VOCs

Date Rec'd in Lab: 11/21/14 ALPHA Job #: L1429212

Report Information	Data Deliverables	Billing Information
<input type="checkbox"/> FAX	<input type="checkbox"/> EMAIL	<input checked="" type="checkbox"/> Same as Client info
<input checked="" type="checkbox"/> ADEx	<input type="checkbox"/> Add'l Deliverables	PO #:

### Regulatory Requirements/Report Limits

State/Fed Program	Criteria
MA	RCS-1

### MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Are MCP Analytical Methods Required?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Are CT RCP (Reasonable Confidence Protocols) Required?

### ANALYSIS

VOCs (8260)*	Soil Management Package IV**	ANALYSIS																SAMPLE HANDLING	TOTAL # BOTTLES
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
																		Filtration <input type="checkbox"/> Done <input checked="" type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)	

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
242221	D-19 S3 4-5.5	11/21/14	800	FW	me
2	D-19 0-6 Full		800	FW	
3	D-19 S4 6.5-8		915	FW	
4	D-19 6-12 Full		915	FW	
5	D-19 S7 12-14		945	FW	
6	D-19 12-18 Full		945	R	

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## IS YOUR PROJECT MA MCP or CT RCP?

FORM NO: 01-01(1)  
(rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
<i>Tom Cormier</i>	11/21/14 1450	<i>Richard Best</i>	11/21/14 1510
<i>me</i>	11/21/14 1903	<i>Richard Best</i>	11/21/14 1903

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

# CHAIN OF CUSTODY

PAGE 2 OF 2



Westborough, MA Mansfield, MA  
 TEL: 508-898-9220 TEL: 508-822-9300  
 FAX: 508-898-9193 FAX: 508-822-3288

## Project Information

Project Name: Fan Pier Parcel D

Project Location: Boston, MA

Project #: 4426.9.1D

Project Manager: Ben Downing/Peter DeChaves

ALPHA Quote #: Fan Pier Pricing

## Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: 12/1/14 Time:

## Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: 6178681420

Fax: 6178681423

Email: bdowning@mcphailgeo.com

These samples have been Previously analyzed by Alpha

## Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT

\*Denotes obtain total solid sample from composite sample.

\*\*Minus VOCs

Date Rec'd in Lab: 11/2/14 ALPHA Job #: 11928212

**Report Information Data Deliverables Billing Information**  
 FAX  EMAIL  Same as Client info PO #:  
 ADEx  Add'l Deliverables

**Regulatory Requirements/Report Limits**  
 State/Fed Program: MA Criteria: RCS-1

**MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS**  
 Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

ANALYSIS													SAMPLE HANDLING Filtration <input type="checkbox"/> Done <input checked="" type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)  Sample Specific Comments	TOTAL # BOTTLES
VOCs (8260)*	Soil Management Package V**													
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
24212-7	D-19 S12 22-24	11/2/14	1045	Fill	TRC
142	D-19 12-24 Fill		1045		
9	D-18 S2 2-4		1415		
10	D-18 0-6 Fill		1415		
11	D-18 S6 10-12		1445		
12	D-18 6-12 Fill		1445		

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-	-	-

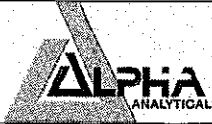
**IS YOUR PROJECT MA MCP or CT RCP?**  
FORM NO: 01-010 (rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
<i>Tom Conroy</i>	11/2/14 1450	<i>[Signature]</i>	11/2/14 1510
<i>[Signature]</i>	11/2/14 1905	<i>Richard DeChaves</i>	11/2/14 1910

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

# CHAIN OF CUSTODY

PAGE 2 OF 2



Westborough, MA Mansfield, MA  
 TEL: 508-898-9220 TEL: 508-822-9300  
 FAX: 508-898-9193 FAX: 508-822-3288

## Project Information

Project Name: Fan Pier Parcel D

Project Location: Boston, MA

Project #: 4426.9.1D

Project Manager: Ben Downing/Peter DeChaves

ALPHA Quote #: Fan Pier Pricing

## Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: 6178681420

Fax: 6178681423

Email: bdowning@mcphailgeo.com

These samples have been Previously analyzed by Alpha

## Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: 12/1/14 Time:

Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT

\*Denotes obtain total solid sample from composite sample.

\*\*Minus VOCs

Date Rec'd in Lab: 11/2/14 ALPHA Job #: 11428212

## Report Information Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

## Billing Information

Same as Client info PO #:

## Regulatory Requirements/Report Limits

State/Fed Program: MA Criteria: RCS-1

## MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

## ANALYSIS

VOCs (8260)*	Soil Management Package V**																	SAMPLE HANDLING Filtration <input type="checkbox"/> Done <input checked="" type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)  Sample Specific Comments	TOTAL # BOTTLES	
24212-7C		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
142		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
9		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
10		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
11		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
12		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
24212-7C	D-19 S12 22-24	11/2/14	1045	Fill	TRC
142	D-19 12-24 Fill		1045		
9	D-18 S2 2-4		1415		
10	D-18 0-6 Fill		1415		
11	D-18 S6 10-12		1445		
12	D-18 6-12 Fill		1445		

PLEASE ANSWER QUESTIONS ABOVE!

Container Type: V A - - - - -  
 Preservative: F A - - - - -

**IS YOUR PROJECT MA MCP or CT RCP?**

FORM NO: 01-010 (rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
Tom Conroy	11/2/14 1450	[Signature]	11/2/14 1510
[Signature]	11/2/14 1905	Richard DeChaves	11/2/14 1910

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

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1428212

Instrument ID: Voal04.i      Calibration Date: 24-NOV-2014      Time: 07:43

Lab File ID: 1124A02      Init. Calib. Date(s): 14-NOV-2      14-NOV-2

Sample No: 8260 CCAL      Init. Calib. Times : 18:34      21:39

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
=====	=====	=====	=====	=====	=====	
dichlorodifluoromethane	.16305	.16937	.1	4	20	
chloromethane	.31614	.36047	.1	14	20	
vinyl chloride	.2743	.31788	.1	16	20	
bromomethane	100	95.654	.1	-4	20	
chloroethane	.13774	.16539	.1	20	20	F
trichlorofluoromethane	.27387	.34042	.1	24	20	F
ethyl ether	.09232	.09543	.05	3	20	
1,1,-dichloroethene	.2177	.20627	.1	-5	20	
carbon disulfide	.70085	.66539	.1	-5	20	
methylene chloride	.26137	.2976	.1	14	20	
acetone	100	82.898	.1	-17	20	
trans-1,2-dichloroethene	.25442	.28413	.1	12	20	
methyl tert butyl ether	.55986	.56265	.1	0	20	
Diisopropyl Ether	.94156	.98109	.05	4	20	
1,1-dichloroethane	.49595	.53572	.2	8	20	
Ethyl-Tert-Butyl-Ether	.82014	.85239	.05	4	20	
cis-1,2-dichloroethene	.28074	.3094	.1	10	20	
2,2-dichloropropane	.35677	.4152	.05	16	20	
bromochloromethane	.12861	.13725	.05	7	20	
chloroform	.44837	.48707	.2	9	20	
carbontetrachloride	.32832	.38457	.1	17	20	
tetrahydrofuran	.06814	.06546	.05	-4	20	
1,1,1-trichloroethane	.37681	.4289	.1	14	20	
2-butanone	.09192	.08157	.1	-11	20	F
1,1-dichloropropene	.33481	.38644	.05	15	20	
benzene	.97656	1.1025	.5	13	20	
Tertiary-Amyl Methyl Ether	.62875	.65218	.05	4	20	
1,2-dichloroethane	.30244	.3185	.1	5	20	
trichloroethene	.264	.29808	.2	13	20	
dibromomethane	.14205	.14092	.05	-1	20	
1,2-dichloropropane	.27957	.2906	.1	4	20	
bromodichloromethane	.33098	.33603	.2	2	20	
1,4-dioxane	.00202	.00169	.05	-16	20	F
cis-1,3-dichloropropene	.39239	.40929	.2	4	20	
toluene	.87644	.96025	.4	10	20	
tetrachloroethene	.36363	.42492	.2	17	20	
4-methyl-2-pentanone	.07517	.07079	.1	-6	20	F
trans-1,3-dichloropropene	.46349	.47936	.1	3	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1428212

Instrument ID: Voal04.i      Calibration Date: 24-NOV-2014      Time: 07:43

Lab File ID: 1124A02      Init. Calib. Date(s): 14-NOV-2      14-NOV-2

Sample No: 8260 CCAL      Init. Calib. Times : 18:34      21:39

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.23224	.23184	.1	0	20
chlorodibromomethane	.34856	.35018	.1	0	20
1,3-dichloropropane	.45928	.46245	.05	1	20
1,2-dibromoethane	.28223	.28034	.1	-1	20
2-hexanone	.19278	.16913	.1	-12	20
chlorobenzene	1.0010	1.0642	.5	6	20
ethyl benzene	1.6393	1.8067	.1	10	20
1,1,1,2-tetrachloroethane	.3581	.38146	.05	7	20
p/m xylene	.63448	.71336	.1	12	20
o xylene	.6125	.69327	.3	13	20
styrene	1.0136	1.1374	.3	12	20
bromoform	.39846	.37585	.1	-6	20
isopropylbenzene	3.1932	3.4753	.1	9	20
bromobenzene	.84329	.85395	.05	1	20
n-propylbenzene	3.6352	4.0493	.05	11	20
1,1,2,2,-tetrachloroethane	.67812	.64405	.3	-5	20
2-chlorotoluene	2.3296	2.4205	.05	4	20
1,2,3-trichloropropane	.49557	.46914	.05	-5	20
1,3,5-trimethylbenzene	2.6303	2.8677	.05	9	20
4-chlorotoluene	2.2427	2.3958	.05	7	20
tert-butylbenzene	2.2838	2.5094	.05	10	20
1,2,4-trimethylbenzene	2.6527	2.9007	.05	9	20
sec-butylbenzene	3.4242	3.8639	.05	13	20
p-isopropyltoluene	2.8275	3.2446	.05	15	20
1,3-dichlorobenzene	1.5651	1.6936	.6	8	20
1,4-dichlorobenzene	1.6000	1.7023	.5	6	20
n-butylbenzene	2.4383	2.9618	.05	21	20
1,2-dichlorobenzene	1.4443	1.5105	.4	5	20
1,2-dibromo-3-chloropropane	.10573	.09511	.05	-10	20
hexachlorobutadiene	.45607	.52616	.05	15	20
1,2,4-trichlorobenzene	.95262	1.0656	.2	12	20
naphthalene	2.1836	1.9838	.05	-9	20
1,2,3-trichlorobenzene	.88772	.93061	.05	5	20
dibromofluoromethane	.2538	.26282	.05	4	30
1,2-dichloroethane-d4	.22706	.22078	.05	-3	30
toluene-d8	1.3076	1.3266	.05	1	30
4-bromofluorobenzene	.90729	.89588	.05	-1	30

F

FORM VII MCP-8260HLW-10



## ANALYTICAL REPORT

Lab Number:	L1428384
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	12/03/14

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

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



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1428384-01	D-18 S9 16-18	SOIL	BOSTON, MA	11/24/14 09:00	11/24/14
L1428384-02	D-18 12-18 FILL	SOIL	BOSTON, MA	11/24/14 09:00	11/24/14
L1428384-03	D-18 S12 22-24	SOIL	BOSTON, MA	11/24/14 10:15	11/24/14
L1428384-04	D-18 18-24 FILL	SOIL	BOSTON, MA	11/24/14 10:15	11/24/14
<del>L1428384-05</del>	<del>D-22 S3 4-5.6</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/24/14 13:30</del>	<del>11/24/14</del>
<del>L1428384-06</del>	<del>D-22 0-6 FILL</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/24/14 13:30</del>	<del>11/24/14</del>
<del>L1428384-07</del>	<del>D-22 S6 10-12</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>11/24/14 14:45</del>	<del>11/24/14</del>
L1428384-08	D-22 6-12 FILL	SOIL	BOSTON, MA	11/24/14 14:45	11/24/14

Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

### Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

The samples submitted for Volatile Organics were received without raw soil for the Total Solids analysis. The Total Solids results from the corresponding composite samples were utilized in the dry weight calculation of the Volatile Organics data.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1428384-01, -03, -05, and -07, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.00244) and 4-methyl-2-pentanone (0.05631), as well as the average response factor for 2-butanone, 1,4-dioxane, and 4-methyl-2-pentanone. The initial calibration verification standard is outside acceptance criteria for dichlorodifluoromethane (144%) but within overall method criteria.

The continuing calibration standard, associated with L1428384-01, -03, -05, and -07, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

##### Semivolatile Organics

L1428384-06 has elevated detection limits due to the dilution required by the sample matrix.

##### Metals

In reference to question I:

All samples were analyzed for a subset of MCP elements per the Chain of Custody.

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:  Bryan Vangel

Title: Technical Director/Representative

Date: 12/03/14

# ORGANICS

# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

Lab ID: L1428384-01  
 Client ID: D-18 S9 16-18  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 11/26/14 13:41  
 Analyst: MV  
 Percent Solids: 80%

Date Collected: 11/24/14 09:00  
 Date Received: 11/24/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	12	--	1
1,1-Dichloroethane	ND		ug/kg	1.9	--	1
Chloroform	ND		ug/kg	1.9	--	1
Carbon tetrachloride	ND		ug/kg	1.2	--	1
1,2-Dichloropropane	ND		ug/kg	4.4	--	1
Dibromochloromethane	ND		ug/kg	1.2	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.9	--	1
Tetrachloroethene	ND		ug/kg	1.2	--	1
Chlorobenzene	ND		ug/kg	1.2	--	1
Trichlorofluoromethane	ND		ug/kg	5.0	--	1
1,2-Dichloroethane	ND		ug/kg	1.2	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.2	--	1
Bromodichloromethane	ND		ug/kg	1.2	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.2	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.2	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.2	--	1
1,1-Dichloropropene	ND		ug/kg	5.0	--	1
Bromoform	ND		ug/kg	5.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.2	--	1
Benzene	ND		ug/kg	1.2	--	1
Toluene	8.1		ug/kg	1.9	--	1
Ethylbenzene	3.2		ug/kg	1.2	--	1
Chloromethane	ND		ug/kg	5.0	--	1
Bromomethane	ND		ug/kg	2.5	--	1
Vinyl chloride	ND		ug/kg	2.5	--	1
Chloroethane	ND		ug/kg	2.5	--	1
1,1-Dichloroethene	ND		ug/kg	1.2	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.9	--	1
Trichloroethene	ND		ug/kg	1.2	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.0	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

## SAMPLE RESULTS

Lab ID: L1428384-01

Date Collected: 11/24/14 09:00

Client ID: D-18 S9 16-18

Date Received: 11/24/14

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	5.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.0	--	1
Methyl tert butyl ether	ND		ug/kg	2.5	--	1
p/m-Xylene	13		ug/kg	2.5	--	1
o-Xylene	5.5		ug/kg	2.5	--	1
Xylenes, Total	19		ug/kg	2.5	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.2	--	1
Dibromomethane	ND		ug/kg	5.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.0	--	1
Styrene	ND		ug/kg	2.5	--	1
Dichlorodifluoromethane	ND		ug/kg	12	--	1
Acetone	ND		ug/kg	45	--	1
Carbon disulfide	ND		ug/kg	5.0	--	1
Methyl ethyl ketone	ND		ug/kg	12	--	1
Methyl isobutyl ketone	ND		ug/kg	12	--	1
2-Hexanone	ND		ug/kg	12	--	1
Bromochloromethane	ND		ug/kg	5.0	--	1
Tetrahydrofuran	ND		ug/kg	5.0	--	1
2,2-Dichloropropane	ND		ug/kg	6.2	--	1
1,2-Dibromoethane	ND		ug/kg	5.0	--	1
1,3-Dichloropropane	ND		ug/kg	5.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.2	--	1
Bromobenzene	ND		ug/kg	6.2	--	1
n-Butylbenzene	ND		ug/kg	1.2	--	1
sec-Butylbenzene	ND		ug/kg	1.2	--	1
tert-Butylbenzene	ND		ug/kg	5.0	--	1
o-Chlorotoluene	ND		ug/kg	5.0	--	1
p-Chlorotoluene	ND		ug/kg	5.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.0	--	1
Hexachlorobutadiene	ND		ug/kg	5.0	--	1
Isopropylbenzene	ND		ug/kg	1.2	--	1
p-Isopropyltoluene	ND		ug/kg	1.2	--	1
Naphthalene	ND		ug/kg	5.0	--	1
n-Propylbenzene	1.3		ug/kg	1.2	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	5.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.0	--	1
1,2,4-Trimethylbenzene	9.4		ug/kg	5.0	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

Lab ID: L1428384-01  
 Client ID: D-18 S9 16-18  
 Sample Location: BOSTON, MA

Date Collected: 11/24/14 09:00  
 Date Received: 11/24/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	6.2	--	1
Diisopropyl Ether	ND		ug/kg	5.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.0	--	1
1,4-Dioxane	ND		ug/kg	50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	103		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

Lab ID: L1428384-03  
 Client ID: D-18 S12 22-24  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 11/26/14 14:08  
 Analyst: MV  
 Percent Solids: 86%

Date Collected: 11/24/14 10:15  
 Date Received: 11/24/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	13	--	1
1,1-Dichloroethane	ND		ug/kg	1.9	--	1
Chloroform	ND		ug/kg	1.9	--	1
Carbon tetrachloride	ND		ug/kg	1.3	--	1
1,2-Dichloropropane	ND		ug/kg	4.4	--	1
Dibromochloromethane	ND		ug/kg	1.3	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.9	--	1
Tetrachloroethene	ND		ug/kg	1.3	--	1
Chlorobenzene	ND		ug/kg	1.3	--	1
Trichlorofluoromethane	ND		ug/kg	5.1	--	1
1,2-Dichloroethane	ND		ug/kg	1.3	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.3	--	1
Bromodichloromethane	ND		ug/kg	1.3	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.3	--	1
1,1-Dichloropropene	ND		ug/kg	5.1	--	1
Bromoform	ND		ug/kg	5.1	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Benzene	ND		ug/kg	1.3	--	1
Toluene	ND		ug/kg	1.9	--	1
Ethylbenzene	ND		ug/kg	1.3	--	1
Chloromethane	ND		ug/kg	5.1	--	1
Bromomethane	ND		ug/kg	2.5	--	1
Vinyl chloride	ND		ug/kg	2.5	--	1
Chloroethane	ND		ug/kg	2.5	--	1
1,1-Dichloroethene	ND		ug/kg	1.3	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.9	--	1
Trichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.1	--	1



Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

## SAMPLE RESULTS

Lab ID: L1428384-03

Date Collected: 11/24/14 10:15

Client ID: D-18 S12 22-24

Date Received: 11/24/14

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	5.1	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.1	--	1
Methyl tert butyl ether	ND		ug/kg	2.5	--	1
p/m-Xylene	ND		ug/kg	2.5	--	1
o-Xylene	ND		ug/kg	2.5	--	1
Xylenes, Total	ND		ug/kg	2.5	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.3	--	1
Dibromomethane	ND		ug/kg	5.1	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.1	--	1
Styrene	ND		ug/kg	2.5	--	1
Dichlorodifluoromethane	ND		ug/kg	13	--	1
Acetone	ND		ug/kg	46	--	1
Carbon disulfide	7.8		ug/kg	5.1	--	1
Methyl ethyl ketone	ND		ug/kg	13	--	1
Methyl isobutyl ketone	ND		ug/kg	13	--	1
2-Hexanone	ND		ug/kg	13	--	1
Bromochloromethane	ND		ug/kg	5.1	--	1
Tetrahydrofuran	ND		ug/kg	5.1	--	1
2,2-Dichloropropane	ND		ug/kg	6.3	--	1
1,2-Dibromoethane	ND		ug/kg	5.1	--	1
1,3-Dichloropropane	ND		ug/kg	5.1	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Bromobenzene	ND		ug/kg	6.3	--	1
n-Butylbenzene	ND		ug/kg	1.3	--	1
sec-Butylbenzene	ND		ug/kg	1.3	--	1
tert-Butylbenzene	ND		ug/kg	5.1	--	1
o-Chlorotoluene	ND		ug/kg	5.1	--	1
p-Chlorotoluene	ND		ug/kg	5.1	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.1	--	1
Hexachlorobutadiene	ND		ug/kg	5.1	--	1
Isopropylbenzene	ND		ug/kg	1.3	--	1
p-Isopropyltoluene	ND		ug/kg	1.3	--	1
Naphthalene	ND		ug/kg	5.1	--	1
n-Propylbenzene	ND		ug/kg	1.3	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	5.1	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.1	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.1	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.1	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

Lab ID: L1428384-03  
 Client ID: D-18 S12 22-24  
 Sample Location: BOSTON, MA

Date Collected: 11/24/14 10:15  
 Date Received: 11/24/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	6.3	--	1
Diisopropyl Ether	ND		ug/kg	5.1	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.1	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.1	--	1
1,4-Dioxane	ND		ug/kg	51	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	104		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 11/26/14 08:50  
**Analyst:** MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,03,05,07 Batch: WG744085-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 11/26/14 08:50  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,03,05,07 Batch: WG744085-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 11/26/14 08:50  
**Analyst:** MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,03,05,07 Batch: WG744085-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	104		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07 Batch: WG744085-1 WG744085-2								
Methylene chloride	108		109		70-130	1		20
1,1-Dichloroethane	109		110		70-130	1		20
Chloroform	104		106		70-130	2		20
Carbon tetrachloride	114		113		70-130	1		20
1,2-Dichloropropane	108		108		70-130	0		20
Dibromochloromethane	99		103		70-130	4		20
1,1,2-Trichloroethane	100		102		70-130	2		20
Tetrachloroethene	112		110		70-130	2		20
Chlorobenzene	106		106		70-130	0		20
Trichlorofluoromethane	135	Q	131	Q	70-130	3		20
1,2-Dichloroethane	111		111		70-130	0		20
1,1,1-Trichloroethane	112		111		70-130	1		20
Bromodichloromethane	107		108		70-130	1		20
trans-1,3-Dichloropropene	100		103		70-130	3		20
cis-1,3-Dichloropropene	105		108		70-130	3		20
1,1-Dichloropropene	116		120		70-130	3		20
Bromoform	97		101		70-130	4		20
1,1,2,2-Tetrachloroethane	99		102		70-130	3		20
Benzene	110		111		70-130	1		20
Toluene	102		102		70-130	0		20
Ethylbenzene	109		108		70-130	1		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07 Batch: WG744085-1 WG744085-2								
Chloromethane	110		133	Q	70-130	19		20
Bromomethane	92		102		70-130	10		20
Vinyl chloride	125		123		70-130	2		20
Chloroethane	131	Q	131	Q	70-130	0		20
1,1-Dichloroethene	103		113		70-130	9		20
trans-1,2-Dichloroethene	113		111		70-130	2		20
Trichloroethene	115		113		70-130	2		20
1,2-Dichlorobenzene	106		105		70-130	1		20
1,3-Dichlorobenzene	109		108		70-130	1		20
1,4-Dichlorobenzene	108		107		70-130	1		20
Methyl tert butyl ether	104		109		70-130	5		20
p/m-Xylene	110		110		70-130	0		20
o-Xylene	108		109		70-130	1		20
cis-1,2-Dichloroethene	106		107		70-130	1		20
Dibromomethane	102		106		70-130	4		20
1,2,3-Trichloropropane	98		102		70-130	4		20
Styrene	107		108		70-130	1		20
Dichlorodifluoromethane	120		116		70-130	3		20
Acetone	91		100		70-130	9		20
Carbon disulfide	111		139	Q	70-130	22	Q	20
Methyl ethyl ketone	89		99		70-130	11		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07 Batch: WG744085-1 WG744085-2								
Methyl isobutyl ketone	99		107		70-130	8		20
2-Hexanone	89		98		70-130	10		20
Bromochloromethane	102		106		70-130	4		20
Tetrahydrofuran	87		107		70-130	21	Q	20
2,2-Dichloropropane	108		110		70-130	2		20
1,2-Dibromoethane	98		103		70-130	5		20
1,3-Dichloropropane	100		104		70-130	4		20
1,1,1,2-Tetrachloroethane	104		106		70-130	2		20
Bromobenzene	103		104		70-130	1		20
n-Butylbenzene	123		119		70-130	3		20
sec-Butylbenzene	114		111		70-130	3		20
tert-Butylbenzene	111		107		70-130	4		20
o-Chlorotoluene	108		106		70-130	2		20
p-Chlorotoluene	108		107		70-130	1		20
1,2-Dibromo-3-chloropropane	92		99		70-130	7		20
Hexachlorobutadiene	115		112		70-130	3		20
Isopropylbenzene	111		106		70-130	5		20
p-Isopropyltoluene	115		112		70-130	3		20
Naphthalene	93		98		70-130	5		20
n-Propylbenzene	112		110		70-130	2		20
1,2,3-Trichlorobenzene	105		105		70-130	0		20



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07 Batch: WG744085-1 WG744085-2								
1,2,4-Trichlorobenzene	112		112		70-130	0		20
1,3,5-Trimethylbenzene	111		108		70-130	3		20
1,2,4-Trimethylbenzene	111		107		70-130	4		20
Diethyl ether	110		114		70-130	4		20
Diisopropyl Ether	109		112		70-130	3		20
Ethyl-Tert-Butyl-Ether	104		108		70-130	4		20
Tertiary-Amyl Methyl Ether	104		108		70-130	4		20
1,4-Dioxane	86		92		70-130	7		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		101		70-130
Toluene-d8	95		95		70-130
4-Bromofluorobenzene	98		97		70-130
Dibromofluoromethane	99		100		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

Lab ID: L1428384-02  
 Client ID: D-18 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 12/02/14 12:17  
 Analyst: JB  
 Percent Solids: 80%

Date Collected: 11/24/14 09:00  
 Date Received: 11/24/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/25/14 04:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

**Lab ID:** L1428384-02  
**Client ID:** D-18 12-18 FILL  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/24/14 09:00  
**Date Received:** 11/24/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	990	--	1
Pentachlorophenol	ND		ug/kg	410	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	91		30-130
Phenol-d6	91		30-130
Nitrobenzene-d5	96		30-130
2-Fluorobiphenyl	90		30-130
2,4,6-Tribromophenol	86		30-130
4-Terphenyl-d14	83		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

Lab ID: L1428384-04  
 Client ID: D-18 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 11/26/14 02:10  
 Analyst: JB  
 Percent Solids: 86%

Date Collected: 11/24/14 10:15  
 Date Received: 11/24/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/25/14 04:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	--	1
2-Chloronaphthalene	ND		ug/kg	190	--	1
1,2-Dichlorobenzene	ND		ug/kg	190	--	1
1,3-Dichlorobenzene	ND		ug/kg	190	--	1
1,4-Dichlorobenzene	ND		ug/kg	190	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	--	1
2,4-Dinitrotoluene	ND		ug/kg	190	--	1
2,6-Dinitrotoluene	ND		ug/kg	190	--	1
Azobenzene	ND		ug/kg	190	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	210	--	1
Hexachlorobutadiene	ND		ug/kg	190	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	170	--	1
Naphthalene	ND		ug/kg	190	--	1
Nitrobenzene	ND		ug/kg	170	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	190	--	1
Butyl benzyl phthalate	ND		ug/kg	190	--	1
Di-n-butylphthalate	ND		ug/kg	190	--	1
Di-n-octylphthalate	ND		ug/kg	190	--	1
Diethyl phthalate	ND		ug/kg	190	--	1
Dimethyl phthalate	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

**Lab ID:** L1428384-04  
**Client ID:** D-18 18-24 FILL  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/24/14 10:15  
**Date Received:** 11/24/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	230	--	1
4-Chloroaniline	ND		ug/kg	190	--	1
Dibenzofuran	ND		ug/kg	190	--	1
2-Methylnaphthalene	ND		ug/kg	230	--	1
Acetophenone	ND		ug/kg	190	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	190	--	1
2,4-Dichlorophenol	ND		ug/kg	170	--	1
2,4-Dimethylphenol	ND		ug/kg	190	--	1
2-Nitrophenol	ND		ug/kg	420	--	1
4-Nitrophenol	ND		ug/kg	270	--	1
2,4-Dinitrophenol	ND		ug/kg	930	--	1
Pentachlorophenol	ND		ug/kg	390	--	1
Phenol	ND		ug/kg	190	--	1
2-Methylphenol	ND		ug/kg	190	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	--	1
2,4,5-Trichlorophenol	ND		ug/kg	190	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	69		30-130
Phenol-d6	72		30-130
Nitrobenzene-d5	70		30-130
2-Fluorobiphenyl	81		30-130
2,4,6-Tribromophenol	98		30-130
4-Terphenyl-d14	79		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/25/14 16:45  
**Analyst:** JB

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/25/14 04:50

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08 Batch: WG743576-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	99	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	99	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/25/14 16:45  
**Analyst:** JB

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/25/14 04:50

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08 Batch: WG743576-1					
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	99	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	99	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	360	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	790	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 11/25/14 16:45  
Analyst: JB

Extraction Method: EPA 3546  
Extraction Date: 11/25/14 04:50

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08 Batch: WG743576-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	80		30-130
Phenol-d6	81		30-130
Nitrobenzene-d5	76		30-130
2-Fluorobiphenyl	83		30-130
2,4,6-Tribromophenol	81		30-130
4-Terphenyl-d14	81		30-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG743576-2 WG743576-3								
Acenaphthene	81		92		40-140	13		30
1,2,4-Trichlorobenzene	80		86		40-140	7		30
Hexachlorobenzene	94		107		40-140	13		30
Bis(2-chloroethyl)ether	68		76		40-140	11		30
2-Chloronaphthalene	93		106		40-140	13		30
1,2-Dichlorobenzene	75		80		40-140	6		30
1,3-Dichlorobenzene	72		77		40-140	7		30
1,4-Dichlorobenzene	71		77		40-140	8		30
3,3'-Dichlorobenzidine	74		78		40-140	5		30
2,4-Dinitrotoluene	97		111		40-140	13		30
2,6-Dinitrotoluene	99		117		40-140	17		30
Azobenzene	104		118		40-140	13		30
Fluoranthene	96		107		40-140	11		30
4-Bromophenyl phenyl ether	97		111		40-140	13		30
Bis(2-chloroisopropyl)ether	62		67		40-140	8		30
Bis(2-chloroethoxy)methane	82		94		40-140	14		30
Hexachlorobutadiene	78		85		40-140	9		30
Hexachloroethane	69		74		40-140	7		30
Isophorone	85		98		40-140	14		30
Naphthalene	74		83		40-140	11		30
Nitrobenzene	73		83		40-140	13		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG743576-2 WG743576-3								
Bis(2-Ethylhexyl)phthalate	93		105		40-140	12		30
Butyl benzyl phthalate	98		109		40-140	11		30
Di-n-butylphthalate	95		106		40-140	11		30
Di-n-octylphthalate	97		110		40-140	13		30
Diethyl phthalate	96		109		40-140	13		30
Dimethyl phthalate	90		104		40-140	14		30
Benzo(a)anthracene	88		100		40-140	13		30
Benzo(a)pyrene	91		103		40-140	12		30
Benzo(b)fluoranthene	90		106		40-140	16		30
Benzo(k)fluoranthene	88		98		40-140	11		30
Chrysene	87		99		40-140	13		30
Acenaphthylene	94		111		40-140	17		30
Anthracene	84		98		40-140	15		30
Benzo(ghi)perylene	86		98		40-140	13		30
Fluorene	89		103		40-140	15		30
Phenanthrene	88		98		40-140	11		30
Dibenzo(a,h)anthracene	90		102		40-140	13		30
Indeno(1,2,3-cd)Pyrene	88		102		40-140	15		30
Pyrene	96		107		40-140	11		30
Aniline	52		56		40-140	7		30
4-Chloroaniline	92		102		40-140	10		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG743576-2 WG743576-3								
Dibenzofuran	92		105		40-140	13		30
2-Methylnaphthalene	88		103		40-140	16		30
Acetophenone	84		97		40-140	14		30
2,4,6-Trichlorophenol	113		135	Q	30-130	18		30
2-Chlorophenol	90		101		30-130	12		30
2,4-Dichlorophenol	100		119		30-130	17		30
2,4-Dimethylphenol	93		124		30-130	29		30
2-Nitrophenol	94		107		30-130	13		30
4-Nitrophenol	102		120		30-130	16		30
2,4-Dinitrophenol	84		86		30-130	2		30
Pentachlorophenol	88		104		30-130	17		30
Phenol	93		104		30-130	11		30
2-Methylphenol	94		110		30-130	16		30
3-Methylphenol/4-Methylphenol	99		121		30-130	20		30
2,4,5-Trichlorophenol	114		143	Q	30-130	23		30

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG743576-2 WG743576-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
2-Fluorophenol	77		87		30-130
Phenol-d6	87		97		30-130
Nitrobenzene-d5	85		94		30-130
2-Fluorobiphenyl	90		105		30-130
2,4,6-Tribromophenol	89		101		30-130
4-Terphenyl-d14	100		112		30-130

# PETROLEUM HYDROCARBONS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

Lab ID: L1428384-02  
 Client ID: D-18 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 12/01/14 03:27  
 Analyst: KB  
 Percent Solids: 80%

Date Collected: 11/24/14 09:00  
 Date Received: 11/24/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/25/14 00:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
--	--	--	--	--	--	--

TPH	41100		ug/kg	39900	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	84		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

Lab ID: L1428384-04  
 Client ID: D-18 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 12/01/14 02:43  
 Analyst: KB  
 Percent Solids: 86%

Date Collected: 11/24/14 10:15  
 Date Received: 11/24/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/25/14 00:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
--	--	--	--	--	--	--

TPH	ND		ug/kg	38600	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	85		40-140



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8015C(M)  
Analytical Date: 12/01/14 00:00  
Analyst: KB

Extraction Method: EPA 3546  
Extraction Date: 11/25/14 00:52

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 02,04,06,08 Batch: WG743543-1					
TPH	ND		ug/kg	32800	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	90		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG743543-2								
TPH	108		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	100				40-140

**Lab Duplicate Analysis**  
**Batch Quality Control**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02,04,06,08 QC Batch ID: WG743543-3 QC Sample: L1428162-01 Client ID: DUP Sample						
TPH	140000	199000	ug/kg	35		40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	96		99		40-140

# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

Lab ID: L1428384-02  
 Client ID: D-18 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082  
 Analytical Date: 11/25/14 16:09  
 Analyst: JW  
 Percent Solids: 80%

Date Collected: 11/24/14 09:00  
 Date Received: 11/24/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/25/14 03:42  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/25/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/25/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	40.7	--	1	A
Aroclor 1221	ND		ug/kg	40.7	--	1	A
Aroclor 1232	ND		ug/kg	40.7	--	1	A
Aroclor 1242	ND		ug/kg	40.7	--	1	A
Aroclor 1248	ND		ug/kg	40.7	--	1	A
Aroclor 1254	ND		ug/kg	40.7	--	1	A
Aroclor 1260	ND		ug/kg	40.7	--	1	A
Aroclor 1262	ND		ug/kg	40.7	--	1	A
Aroclor 1268	ND		ug/kg	40.7	--	1	A
PCBs, Total	ND		ug/kg	40.7	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	49		30-150	A
Decachlorobiphenyl	43		30-150	A
2,4,5,6-Tetrachloro-m-xylene	49		30-150	B
Decachlorobiphenyl	54		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

Lab ID: L1428384-04  
 Client ID: D-18 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082  
 Analytical Date: 11/25/14 16:23  
 Analyst: JW  
 Percent Solids: 86%

Date Collected: 11/24/14 10:15  
 Date Received: 11/24/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/25/14 03:42  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/25/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/25/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	38.5	--	1	A
Aroclor 1221	ND		ug/kg	38.5	--	1	A
Aroclor 1232	ND		ug/kg	38.5	--	1	A
Aroclor 1242	ND		ug/kg	38.5	--	1	A
Aroclor 1248	ND		ug/kg	38.5	--	1	A
Aroclor 1254	ND		ug/kg	38.5	--	1	A
Aroclor 1260	ND		ug/kg	38.5	--	1	A
Aroclor 1262	ND		ug/kg	38.5	--	1	A
Aroclor 1268	ND		ug/kg	38.5	--	1	A
PCBs, Total	ND		ug/kg	38.5	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	59		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	91		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**Method Blank Analysis  
 Batch Quality Control**

Analytical Method: 97,8082  
 Analytical Date: 11/25/14 18:54  
 Analyst: JW

Extraction Method: EPA 3546  
 Extraction Date: 11/25/14 03:42  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/25/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/25/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 02,04,06,08 Batch: WG743570-1						
Aroclor 1016	ND		ug/kg	32.6	--	A
Aroclor 1221	ND		ug/kg	32.6	--	A
Aroclor 1232	ND		ug/kg	32.6	--	A
Aroclor 1242	ND		ug/kg	32.6	--	A
Aroclor 1248	ND		ug/kg	32.6	--	A
Aroclor 1254	ND		ug/kg	32.6	--	A
Aroclor 1260	ND		ug/kg	32.6	--	A
Aroclor 1262	ND		ug/kg	32.6	--	A
Aroclor 1268	ND		ug/kg	32.6	--	A
PCBs, Total	ND		ug/kg	32.6	--	A

Surrogate	%Recovery	Qualifier	Acceptance	Column
			Criteria	
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	65		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	85		30-150	B



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG743570-2 WG743570-3									
Aroclor 1016	66		73		40-140	10		30	A
Aroclor 1260	53		59		40-140	11		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		77		30-150	A
Decachlorobiphenyl	56		62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		77		30-150	B
Decachlorobiphenyl	75		81		30-150	B



## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

Lab ID: L1428384-02  
 Client ID: D-18 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 80%

Date Collected: 11/24/14 09:00  
 Date Received: 11/24/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	5.4		mg/kg	0.49	--	1	11/25/14 20:07	11/25/14 23:51	EPA 3050B	97,6010C	TT
Barium, Total	16		mg/kg	0.49	--	1	11/25/14 20:07	11/25/14 23:51	EPA 3050B	97,6010C	TT
Cadmium, Total	ND		mg/kg	0.49	--	1	11/25/14 20:07	11/25/14 23:51	EPA 3050B	97,6010C	TT
Chromium, Total	11		mg/kg	0.49	--	1	11/25/14 20:07	11/25/14 23:51	EPA 3050B	97,6010C	TT
Lead, Total	10		mg/kg	2.4	--	1	11/25/14 20:07	11/25/14 23:51	EPA 3050B	97,6010C	TT
Mercury, Total	ND		mg/kg	0.086	--	1	11/25/14 08:01	11/25/14 12:20	EPA 7471B	97,7471B	MC
Selenium, Total	ND		mg/kg	2.4	--	1	11/25/14 20:07	11/25/14 23:51	EPA 3050B	97,6010C	TT
Silver, Total	ND		mg/kg	0.49	--	1	11/25/14 20:07	11/25/14 23:51	EPA 3050B	97,6010C	TT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

Lab ID: L1428384-04  
 Client ID: D-18 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 86%

Date Collected: 11/24/14 10:15  
 Date Received: 11/24/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.6		mg/kg	0.46	--	1	11/25/14 20:07	11/25/14 23:55	EPA 3050B	97,6010C	TT
Barium, Total	6.2		mg/kg	0.46	--	1	11/25/14 20:07	11/25/14 23:55	EPA 3050B	97,6010C	TT
Cadmium, Total	ND		mg/kg	0.46	--	1	11/25/14 20:07	11/25/14 23:55	EPA 3050B	97,6010C	TT
Chromium, Total	6.9		mg/kg	0.46	--	1	11/25/14 20:07	11/25/14 23:55	EPA 3050B	97,6010C	TT
Lead, Total	13		mg/kg	2.3	--	1	11/25/14 20:07	11/25/14 23:55	EPA 3050B	97,6010C	TT
Mercury, Total	0.092		mg/kg	0.073	--	1	11/25/14 08:01	11/25/14 12:22	EPA 7471B	97,7471B	MC
Selenium, Total	ND		mg/kg	2.3	--	1	11/25/14 20:07	11/25/14 23:55	EPA 3050B	97,6010C	TT
Silver, Total	ND		mg/kg	0.46	--	1	11/25/14 20:07	11/25/14 23:55	EPA 3050B	97,6010C	TT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02,04,06,08 Batch: WG743554-1									
Mercury, Total	ND	mg/kg	0.083	--	1	11/25/14 08:01	11/25/14 12:04	97,7471B	MC

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02,04,06,08 Batch: WG743877-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	11/25/14 20:07	11/25/14 23:21	97,6010C	TT
Barium, Total	ND	mg/kg	0.40	--	1	11/25/14 20:07	11/25/14 23:21	97,6010C	TT
Cadmium, Total	ND	mg/kg	0.40	--	1	11/25/14 20:07	11/25/14 23:21	97,6010C	TT
Chromium, Total	ND	mg/kg	0.40	--	1	11/25/14 20:07	11/25/14 23:21	97,6010C	TT
Lead, Total	ND	mg/kg	2.0	--	1	11/25/14 20:07	11/25/14 23:21	97,6010C	TT
Selenium, Total	ND	mg/kg	2.0	--	1	11/25/14 20:07	11/25/14 23:21	97,6010C	TT
Silver, Total	ND	mg/kg	0.40	--	1	11/25/14 20:07	11/25/14 23:21	97,6010C	TT

### Prep Information

Digestion Method: EPA 3050B

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG743554-2 WG743554-3 SRM Lot Number: D083-540								
Mercury, Total	94		92		75-126	2		30
MCP Total Metals - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG743877-2 WG743877-3 SRM Lot Number: D083-540								
Arsenic, Total	98		98		78-122	0		30
Barium, Total	90		96		82-117	6		30
Cadmium, Total	91		93		82-118	2		30
Chromium, Total	93		95		79-121	2		30
Lead, Total	91		93		81-119	2		30
Selenium, Total	102		102		78-123	0		30
Silver, Total	91		94		74-125	3		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

### SAMPLE RESULTS

**Lab ID:** L1428384-02  
**Client ID:** D-18 12-18 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/24/14 09:00  
**Date Received:** 11/24/14  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Soil  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	11/25/14 13:41	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

### SAMPLE RESULTS

**Lab ID:** L1428384-04  
**Client ID:** D-18 18-24 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/24/14 10:15  
**Date Received:** 11/24/14  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Wet Soil  
**Particle Size:** Coarse  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	11/25/14 13:41	1,1030	AB





Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

## SAMPLE RESULTS

Lab ID: L1428384-01

Date Collected: 11/24/14 09:00

Client ID: D-18 S9 16-18

Date Received: 11/24/14

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.1		%	0.100	NA	1	-	11/24/14 20:43	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

**Lab ID:** L1428384-02  
**Client ID:** D-18 12-18 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/24/14 09:00  
**Date Received:** 11/24/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	460		umhos/cm	10	--	1	-	11/24/14 21:50	1,9050A	AS
Solids, Total	80.1		%	0.100	NA	1	-	11/24/14 20:43	30,2540G	RT
pH (H)	8.2		SU	-	NA	1	-	11/24/14 23:30	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	11/26/14 18:10	11/26/14 19:47	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	11/26/14 18:10	11/26/14 19:40	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

## SAMPLE RESULTS

Lab ID: L1428384-03

Date Collected: 11/24/14 10:15

Client ID: D-18 S12 22-24

Date Received: 11/24/14

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.6		%	0.100	NA	1	-	11/24/14 20:43	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**SAMPLE RESULTS**

**Lab ID:** L1428384-04  
**Client ID:** D-18 18-24 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/24/14 10:15  
**Date Received:** 11/24/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	460		umhos/cm	10	--	1	-	11/24/14 21:50	1,9050A	AS
Solids, Total	85.6		%	0.100	NA	1	-	11/24/14 20:43	30,2540G	RT
pH (H)	8.4		SU	-	NA	1	-	11/24/14 23:30	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	11/26/14 18:10	11/26/14 19:47	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	11/26/14 18:10	11/26/14 19:41	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02,04,06,08 Batch: WG744200-1										
Cyanide, Reactive	ND		mg/kg	10	--	1	11/26/14 18:10	11/26/14 19:47	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 02,04,06,08 Batch: WG744201-1										
Sulfide, Reactive	ND		mg/kg	10	--	1	11/26/14 18:10	11/26/14 19:40	1,7.3	TL

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG743510-1								
pH	101		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG743520-1								
Specific Conductance	98		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG744200-2								
Cyanide, Reactive	47		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 Batch: WG744201-2								
Sulfide, Reactive	84		-		60-125	-		40

## Lab Duplicate Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-08 QC Batch ID: WG743506-1 QC Sample: L1428384-02 Client ID: D-18 12-18 FILL						
Solids, Total	80.1	78.7	%	2		20
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 QC Batch ID: WG743510-2 QC Sample: L1428170-03 Client ID: DUP Sample						
pH	7.8	7.8	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 QC Batch ID: WG743520-2 QC Sample: L1428381-01 Client ID: DUP Sample						
Specific Conductance	320	500	umhos/cm	44	Q	20
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 QC Batch ID: WG744200-3 QC Sample: L1428387-05 Client ID: DUP Sample						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08 QC Batch ID: WG744201-3 QC Sample: L1428387-05 Client ID: DUP Sample						
Sulfide, Reactive	ND	ND	mg/kg	NC		40

Project Name: FAN PIER PARCEL D

Lab Number: L1428384

Project Number: 4426.9.1D

Report Date: 12/03/14

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 11/24/2014 18:58

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1428384-01A	Vial MeOH preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)
L1428384-01B	Vial water preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)
L1428384-01C	Vial water preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)
L1428384-02A	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428384-02B	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1428384-02C	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428384-03A	Vial MeOH preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)
L1428384-03B	Vial water preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)
L1428384-03C	Vial water preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)
L1428384-04A	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428384-04B	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428384-04C	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1428384-05A	Vial MeOH preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)
L1428384-05B	Vial water preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)
L1428384-05C	Vial water preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)
L1428384-06A	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428384-06B	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428384-06C	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428384-07A	Vial MeOH preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)
L1428384-07B	Vial water preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)
L1428384-07C	Vial water preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1428384

Report Date: 12/03/14

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1428384-08A	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428384-08B	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428384-08C	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

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

### Terms

**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.
- 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.

**Report Format:** Data Usability Report



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

#### **Data Qualifiers**

- 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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428384  
**Report Date:** 12/03/14

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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 April 15, 2014

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

### Westborough Facility

**EPA 524.2:** Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.

**EPA 8330A/B:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.

**EPA 8270D:** 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**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.

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**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**

**EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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





# CHAIN OF CUSTODY

PAGE 2 OF 2



Westborough, MA Mansfield, MA  
 TEL: 508-898-9220 TEL: 508-822-9300  
 FAX: 508-898-9193 FAX: 508-822-3288

## Project Information

Project Name: Fan Pier Parcel D

## Client Information

Client: McPhail Associates, LLC  
 Address: 2269 Massachusetts Avenue  
 Cambridge, MA 02140  
 Phone: 6178681420  
 Fax: 6178681423  
 Email: bdowning@mcphailgeo.com  
 These samples have been Previously analyzed by Alpha

Project Location: Boston, MA

Project #: 4426.9.1D  
 Project Manager: Ben Downing/Peter DeChaves  
 ALPHA Quote #: Fan Pier Pricing

## Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)  
 Due Date: 12/02/14 Time:

Other Project Specific Requirements/Comments/Detection Limits:  
 Standard TAT  
 \*Denotes obtain total solid sample from composite sample.  
 \*\*Minus VOCs

Date Rec'd in Lab: 11/24/14 ALPHA Job #: L1428384

**Report Information Data Deliverables Billing Information**  
 FAX  EMAIL  Same as Client info PO #:  
 ADEx  Add'l Deliverables

**Regulatory Requirements/Report Limits**  
 State/Fed Program: MA Criteria: RCS-1

**MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS**  
 Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

VOCs (8260)*	Soil Management Package IV**	ANALYSIS														SAMPLE HANDLING Filtration <input type="checkbox"/> Done <input checked="" type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)  Sample Specific Comments	TOTAL # BOTTLES		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14				
		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
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		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
28384 -07	D-22 56 10-12	11/24/14	1445	FII	TMC
-08	D-22 6-12 FII		1445		

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-

**IS YOUR PROJECT MA MCP or CT RCP?**  
FORM NO. 01-01(1)  
(rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	11/24/14 1505	<i>[Signature]</i>	11/24/14 1505
<i>[Signature]</i>	11/24/14 1805	<i>[Signature]</i>	11/24/14 1805

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

7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1428384

Instrument ID: Voal04.i      Calibration Date: 26-NOV-2014      Time: 07:30

Lab File ID: 1126A03      Init. Calib. Date(s): 14-NOV-2      14-NOV-2

Sample No: 8260 CCAL      Init. Calib. Times : 18:34      21:39

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
=====	=====	=====	=====	=====	=====	
dichlorodifluoromethane	.16305	.19509	.1	20	20	
chloromethane	.31614	.34639	.1	10	20	
vinyl chloride	.2743	.34195	.1	25	20	F
bromomethane	100	92.196	.1	-8	20	
chloroethane	.13774	.18069	.1	31	20	F
trichlorofluoromethane	.27387	.36948	.1	35	20	F
ethyl ether	.09232	.1019	.05	10	20	
1,1,-dichloroethene	.2177	.22391	.1	3	20	
carbon disulfide	.70085	.77913	.1	11	20	
methylene chloride	.26137	.28258	.1	8	20	
acetone	100	91.301	.1	-9	20	
trans-1,2-dichloroethene	.25442	.28807	.1	13	20	
methyl tert butyl ether	.55986	.58453	.1	4	20	
Diisopropyl Ether	.94156	1.0291	.05	9	20	
1,1-dichloroethane	.49595	.54176	.2	9	20	
Ethyl-Tert-Butyl-Ether	.82014	.8506	.05	4	20	
cis-1,2-dichloroethene	.28074	.29797	.1	6	20	
2,2-dichloropropane	.35677	.38413	.05	8	20	
bromochloromethane	.12861	.13108	.05	2	20	
chloroform	.44837	.46768	.2	4	20	
carbontetrachloride	.32832	.37359	.1	14	20	
tetrahydrofuran	.06814	.05938	.05	-13	20	
1,1,1-trichloroethane	.37681	.42102	.1	12	20	
2-butanone	.09192	.08172	.1	-11	20	F
1,1-dichloropropene	.33481	.38845	.05	16	20	
benzene	.97656	1.0792	.5	11	20	
Tertiary-Amyl Methyl Ether	.62875	.65465	.05	4	20	
1,2-dichloroethane	.30244	.33458	.1	11	20	
trichloroethene	.264	.30367	.2	15	20	
dibromomethane	.14205	.14545	.05	2	20	
1,2-dichloropropane	.27957	.30103	.1	8	20	
bromodichloromethane	.33098	.3552	.2	7	20	
1,4-dioxane	.00202	.00173	.05	-14	20	F
cis-1,3-dichloropropene	.39239	.41294	.2	5	20	
toluene	.87644	.89743	.4	2	20	
tetrachloroethene	.36363	.40739	.2	12	20	
4-methyl-2-pentanone	.07517	.07464	.1	-1	20	F
trans-1,3-dichloropropene	.46349	.46481	.1	0	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1428384

Instrument ID: Voal04.i      Calibration Date: 26-NOV-2014      Time: 07:30

Lab File ID: 1126A03      Init. Calib. Date(s): 14-NOV-2      14-NOV-2

Sample No: 8260 CCAL      Init. Calib. Times : 18:34      21:39

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.23224	.23108	.1	-1	20
chlorodibromomethane	.34856	.34385	.1	-1	20
1,3-dichloropropane	.45928	.46071	.05	0	20
1,2-dibromoethane	.28223	.27804	.1	-1	20
2-hexanone	.19278	.17185	.1	-11	20
chlorobenzene	1.0010	1.0630	.5	6	20
ethyl benzene	1.6393	1.7845	.1	9	20
1,1,1,2-tetrachloroethane	.3581	.3736	.05	4	20
p/m xylene	.63448	.69686	.1	10	20
o xylene	.6125	.66165	.3	8	20
styrene	1.0136	1.0894	.3	7	20
bromoform	.39846	.3859	.1	-3	20
isopropylbenzene	3.1932	3.5344	.1	11	20
bromobenzene	.84329	.87101	.05	3	20
n-propylbenzene	3.6352	4.0744	.05	12	20
1,1,2,2,-tetrachloroethane	.67812	.67413	.3	-1	20
2-chlorotoluene	2.3296	2.5288	.05	9	20
1,2,3-trichloropropane	.49557	.48441	.05	-2	20
1,3,5-trimethylbenzene	2.6303	2.9134	.05	11	20
4-chlorotoluene	2.2427	2.4295	.05	8	20
tert-butylbenzene	2.2838	2.5261	.05	11	20
1,2,4-trimethylbenzene	2.6527	2.9360	.05	11	20
sec-butylbenzene	3.4242	3.8895	.05	14	20
p-isopropyltoluene	2.8275	3.2480	.05	15	20
1,3-dichlorobenzene	1.5651	1.7105	.6	9	20
1,4-dichlorobenzene	1.6000	1.7334	.5	8	20
n-butylbenzene	2.4383	3.0089	.05	23	20
1,2-dichlorobenzene	1.4443	1.5350	.4	6	20
1,2-dibromo-3-chloropropane	.10573	.09721	.05	-8	20
hexachlorobutadiene	.45607	.52492	.05	15	20
1,2,4-trichlorobenzene	.95262	1.0708	.2	12	20
naphthalene	2.1836	2.0232	.05	-7	20
1,2,3-trichlorobenzene	.88772	.93461	.05	5	20
dibromofluoromethane	.2538	.25094	.05	-1	30
1,2-dichloroethane-d4	.22706	.22141	.05	-2	30
toluene-d8	1.3076	1.2385	.05	-5	30
4-bromofluorobenzene	.90729	.89018	.05	-2	30

F

FORM VII MCP-8260HLW-10



## ANALYTICAL REPORT

Lab Number:	L1428385
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	12/02/14

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), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1428385-01	D-18 S13 24-26	SILT/CLAY	BOSTON, MA	11/24/14 11:00	11/24/14
L1428385-02	COMPOSITE D-18,D-19 AND D-20 ORGANICS	SILT/CLAY	BOSTON, MA	11/24/14 11:00	11/24/14

Project Name: FAN PIER PARCEL D

Lab Number: L1428385

Project Number: 4426.9.1D

Report Date: 12/02/14

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

### Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. 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.

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**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

The sample submitted for Volatile Organics was received without raw soil for the Total Solids analysis. The Total Solids result from the corresponding composite sample was utilized in the dry weight calculation of the Volatile Organics data.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question H:

The initial calibration, associated with L1428385-01, did not meet the method required minimum response factor on the lowest calibration standard for 4-methyl-2-pentanone (0.05631) and 1,4-dioxane (0.00244), as well as the average response factor for 2-butanone, 4-methyl-2-pentanone, and 1,4-dioxane. The initial calibration verification standard is outside acceptance criteria for dichlorodifluoromethane (144%), but within overall method criteria.

The continuing calibration standard, associated with L1428385-01, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.


##### Metals

In reference to question I:

All samples were analyzed for a subset of MCP elements per the Chain of Custody.

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

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 12/02/14



# ORGANICS

# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428385-01  
 Client ID: D-18 S13 24-26  
 Sample Location: BOSTON, MA  
 Matrix: Silt/Clay  
 Analytical Method: 97,8260C  
 Analytical Date: 11/26/14 15:27  
 Analyst: MV  
 Percent Solids: 80%

Date Collected: 11/24/14 11:00  
 Date Received: 11/24/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	30	--	1
1,1-Dichloroethane	ND		ug/kg	4.5	--	1
Chloroform	ND		ug/kg	4.5	--	1
Carbon tetrachloride	ND		ug/kg	3.0	--	1
1,2-Dichloropropane	ND		ug/kg	10	--	1
Dibromochloromethane	ND		ug/kg	3.0	--	1
1,1,2-Trichloroethane	ND		ug/kg	4.5	--	1
Tetrachloroethene	ND		ug/kg	3.0	--	1
Chlorobenzene	ND		ug/kg	3.0	--	1
Trichlorofluoromethane	ND		ug/kg	12	--	1
1,2-Dichloroethane	ND		ug/kg	3.0	--	1
1,1,1-Trichloroethane	ND		ug/kg	3.0	--	1
Bromodichloromethane	ND		ug/kg	3.0	--	1
trans-1,3-Dichloropropene	ND		ug/kg	3.0	--	1
cis-1,3-Dichloropropene	ND		ug/kg	3.0	--	1
1,3-Dichloropropene, Total	ND		ug/kg	3.0	--	1
1,1-Dichloropropene	ND		ug/kg	12	--	1
Bromoform	ND		ug/kg	12	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	3.0	--	1
Benzene	ND		ug/kg	3.0	--	1
Toluene	ND		ug/kg	4.5	--	1
Ethylbenzene	ND		ug/kg	3.0	--	1
Chloromethane	ND		ug/kg	12	--	1
Bromomethane	ND		ug/kg	6.0	--	1
Vinyl chloride	ND		ug/kg	6.0	--	1
Chloroethane	ND		ug/kg	6.0	--	1
1,1-Dichloroethene	ND		ug/kg	3.0	--	1
trans-1,2-Dichloroethene	ND		ug/kg	4.5	--	1
Trichloroethene	ND		ug/kg	3.0	--	1
1,2-Dichlorobenzene	ND		ug/kg	12	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

**Lab ID:** L1428385-01  
**Client ID:** D-18 S13 24-26  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/24/14 11:00  
**Date Received:** 11/24/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	12	--	1
1,4-Dichlorobenzene	ND		ug/kg	12	--	1
Methyl tert butyl ether	ND		ug/kg	6.0	--	1
p/m-Xylene	ND		ug/kg	6.0	--	1
o-Xylene	ND		ug/kg	6.0	--	1
Xylenes, Total	ND		ug/kg	6.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	3.0	--	1
1,2-Dichloroethene, Total	ND		ug/kg	3.0	--	1
Dibromomethane	ND		ug/kg	12	--	1
1,2,3-Trichloropropane	ND		ug/kg	12	--	1
Styrene	ND		ug/kg	6.0	--	1
Dichlorodifluoromethane	ND		ug/kg	30	--	1
Acetone	ND		ug/kg	110	--	1
Carbon disulfide	13		ug/kg	12	--	1
Methyl ethyl ketone	ND		ug/kg	30	--	1
Methyl isobutyl ketone	ND		ug/kg	30	--	1
2-Hexanone	ND		ug/kg	30	--	1
Bromochloromethane	ND		ug/kg	12	--	1
Tetrahydrofuran	ND		ug/kg	12	--	1
2,2-Dichloropropane	ND		ug/kg	15	--	1
1,2-Dibromoethane	ND		ug/kg	12	--	1
1,3-Dichloropropane	ND		ug/kg	12	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	3.0	--	1
Bromobenzene	ND		ug/kg	15	--	1
n-Butylbenzene	ND		ug/kg	3.0	--	1
sec-Butylbenzene	ND		ug/kg	3.0	--	1
tert-Butylbenzene	ND		ug/kg	12	--	1
o-Chlorotoluene	ND		ug/kg	12	--	1
p-Chlorotoluene	ND		ug/kg	12	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	12	--	1
Hexachlorobutadiene	ND		ug/kg	12	--	1
Isopropylbenzene	ND		ug/kg	3.0	--	1
p-Isopropyltoluene	ND		ug/kg	3.0	--	1
Naphthalene	ND		ug/kg	12	--	1
n-Propylbenzene	ND		ug/kg	3.0	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	12	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	12	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	12	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	12	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428385-01  
 Client ID: D-18 S13 24-26  
 Sample Location: BOSTON, MA

Date Collected: 11/24/14 11:00  
 Date Received: 11/24/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	15	--	1
Diisopropyl Ether	ND		ug/kg	12	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	12	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	12	--	1
1,4-Dioxane	ND		ug/kg	120	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	106		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 11/26/14 08:50  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG744085-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 11/26/14 08:50  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG744085-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 11/26/14 08:50  
**Analyst:** MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG744085-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	104		70-130



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428385

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG744085-1 WG744085-2								
Methylene chloride	108		109		70-130	1		20
1,1-Dichloroethane	109		110		70-130	1		20
Chloroform	104		106		70-130	2		20
Carbon tetrachloride	114		113		70-130	1		20
1,2-Dichloropropane	108		108		70-130	0		20
Dibromochloromethane	99		103		70-130	4		20
1,1,2-Trichloroethane	100		102		70-130	2		20
Tetrachloroethene	112		110		70-130	2		20
Chlorobenzene	106		106		70-130	0		20
Trichlorofluoromethane	135	Q	131	Q	70-130	3		20
1,2-Dichloroethane	111		111		70-130	0		20
1,1,1-Trichloroethane	112		111		70-130	1		20
Bromodichloromethane	107		108		70-130	1		20
trans-1,3-Dichloropropene	100		103		70-130	3		20
cis-1,3-Dichloropropene	105		108		70-130	3		20
1,1-Dichloropropene	116		120		70-130	3		20
Bromoform	97		101		70-130	4		20
1,1,2,2-Tetrachloroethane	99		102		70-130	3		20
Benzene	110		111		70-130	1		20
Toluene	102		102		70-130	0		20
Ethylbenzene	109		108		70-130	1		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428385

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG744085-1 WG744085-2								
Chloromethane	110		133	Q	70-130	19		20
Bromomethane	92		102		70-130	10		20
Vinyl chloride	125		123		70-130	2		20
Chloroethane	131	Q	131	Q	70-130	0		20
1,1-Dichloroethene	103		113		70-130	9		20
trans-1,2-Dichloroethene	113		111		70-130	2		20
Trichloroethene	115		113		70-130	2		20
1,2-Dichlorobenzene	106		105		70-130	1		20
1,3-Dichlorobenzene	109		108		70-130	1		20
1,4-Dichlorobenzene	108		107		70-130	1		20
Methyl tert butyl ether	104		109		70-130	5		20
p/m-Xylene	110		110		70-130	0		20
o-Xylene	108		109		70-130	1		20
cis-1,2-Dichloroethene	106		107		70-130	1		20
Dibromomethane	102		106		70-130	4		20
1,2,3-Trichloropropane	98		102		70-130	4		20
Styrene	107		108		70-130	1		20
Dichlorodifluoromethane	120		116		70-130	3		20
Acetone	91		100		70-130	9		20
Carbon disulfide	111		139	Q	70-130	22	Q	20
Methyl ethyl ketone	89		99		70-130	11		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428385

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG744085-1 WG744085-2								
Methyl isobutyl ketone	99		107		70-130	8		20
2-Hexanone	89		98		70-130	10		20
Bromochloromethane	102		106		70-130	4		20
Tetrahydrofuran	87		107		70-130	21	Q	20
2,2-Dichloropropane	108		110		70-130	2		20
1,2-Dibromoethane	98		103		70-130	5		20
1,3-Dichloropropane	100		104		70-130	4		20
1,1,1,2-Tetrachloroethane	104		106		70-130	2		20
Bromobenzene	103		104		70-130	1		20
n-Butylbenzene	123		119		70-130	3		20
sec-Butylbenzene	114		111		70-130	3		20
tert-Butylbenzene	111		107		70-130	4		20
o-Chlorotoluene	108		106		70-130	2		20
p-Chlorotoluene	108		107		70-130	1		20
1,2-Dibromo-3-chloropropane	92		99		70-130	7		20
Hexachlorobutadiene	115		112		70-130	3		20
Isopropylbenzene	111		106		70-130	5		20
p-Isopropyltoluene	115		112		70-130	3		20
Naphthalene	93		98		70-130	5		20
n-Propylbenzene	112		110		70-130	2		20
1,2,3-Trichlorobenzene	105		105		70-130	0		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428385

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG744085-1 WG744085-2								
1,2,4-Trichlorobenzene	112		112		70-130	0		20
1,3,5-Trimethylbenzene	111		108		70-130	3		20
1,2,4-Trimethylbenzene	111		107		70-130	4		20
Diethyl ether	110		114		70-130	4		20
Diisopropyl Ether	109		112		70-130	3		20
Ethyl-Tert-Butyl-Ether	104		108		70-130	4		20
Tertiary-Amyl Methyl Ether	104		108		70-130	4		20
1,4-Dioxane	86		92		70-130	7		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		101		70-130
Toluene-d8	95		95		70-130
4-Bromofluorobenzene	98		97		70-130
Dibromofluoromethane	99		100		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428385-02  
 Client ID: COMPOSITE D-18,D-19 AND D-20 ORGANICS  
 Sample Location: BOSTON, MA  
 Matrix: Silt/Clay  
 Analytical Method: 97,8270D  
 Analytical Date: 11/25/14 20:56  
 Analyst: JB  
 Percent Solids: 80%

Date Collected: 11/24/14 11:00  
 Date Received: 11/24/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/25/14 04:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

**Lab ID:** L1428385-02  
**Client ID:** COMPOSITE D-18,D-19 AND D-20 ORGANICS  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/24/14 11:00  
**Date Received:** 11/24/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	410	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	84		30-130
Phenol-d6	87		30-130
Nitrobenzene-d5	82		30-130
2-Fluorobiphenyl	86		30-130
2,4,6-Tribromophenol	95		30-130
4-Terphenyl-d14	77		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/25/14 16:45  
**Analyst:** JB

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/25/14 04:50

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02 Batch: WG743576-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	99	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	99	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 11/25/14 16:45  
**Analyst:** JB

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/25/14 04:50

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02 Batch: WG743576-1					
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	99	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	99	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	360	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	790	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 11/25/14 16:45  
Analyst: JB

Extraction Method: EPA 3546  
Extraction Date: 11/25/14 04:50

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02 Batch: WG743576-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	80		30-130
Phenol-d6	81		30-130
Nitrobenzene-d5	76		30-130
2-Fluorobiphenyl	83		30-130
2,4,6-Tribromophenol	81		30-130
4-Terphenyl-d14	81		30-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428385

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG743576-2 WG743576-3								
Acenaphthene	81		92		40-140	13		30
1,2,4-Trichlorobenzene	80		86		40-140	7		30
Hexachlorobenzene	94		107		40-140	13		30
Bis(2-chloroethyl)ether	68		76		40-140	11		30
2-Chloronaphthalene	93		106		40-140	13		30
1,2-Dichlorobenzene	75		80		40-140	6		30
1,3-Dichlorobenzene	72		77		40-140	7		30
1,4-Dichlorobenzene	71		77		40-140	8		30
3,3'-Dichlorobenzidine	74		78		40-140	5		30
2,4-Dinitrotoluene	97		111		40-140	13		30
2,6-Dinitrotoluene	99		117		40-140	17		30
Azobenzene	104		118		40-140	13		30
Fluoranthene	96		107		40-140	11		30
4-Bromophenyl phenyl ether	97		111		40-140	13		30
Bis(2-chloroisopropyl)ether	62		67		40-140	8		30
Bis(2-chloroethoxy)methane	82		94		40-140	14		30
Hexachlorobutadiene	78		85		40-140	9		30
Hexachloroethane	69		74		40-140	7		30
Isophorone	85		98		40-140	14		30
Naphthalene	74		83		40-140	11		30
Nitrobenzene	73		83		40-140	13		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428385

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG743576-2 WG743576-3								
Bis(2-Ethylhexyl)phthalate	93		105		40-140	12		30
Butyl benzyl phthalate	98		109		40-140	11		30
Di-n-butylphthalate	95		106		40-140	11		30
Di-n-octylphthalate	97		110		40-140	13		30
Diethyl phthalate	96		109		40-140	13		30
Dimethyl phthalate	90		104		40-140	14		30
Benzo(a)anthracene	88		100		40-140	13		30
Benzo(a)pyrene	91		103		40-140	12		30
Benzo(b)fluoranthene	90		106		40-140	16		30
Benzo(k)fluoranthene	88		98		40-140	11		30
Chrysene	87		99		40-140	13		30
Acenaphthylene	94		111		40-140	17		30
Anthracene	84		98		40-140	15		30
Benzo(ghi)perylene	86		98		40-140	13		30
Fluorene	89		103		40-140	15		30
Phenanthrene	88		98		40-140	11		30
Dibenzo(a,h)anthracene	90		102		40-140	13		30
Indeno(1,2,3-cd)Pyrene	88		102		40-140	15		30
Pyrene	96		107		40-140	11		30
Aniline	52		56		40-140	7		30
4-Chloroaniline	92		102		40-140	10		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428385

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG743576-2 WG743576-3								
Dibenzofuran	92		105		40-140	13		30
2-Methylnaphthalene	88		103		40-140	16		30
Acetophenone	84		97		40-140	14		30
2,4,6-Trichlorophenol	113		135	Q	30-130	18		30
2-Chlorophenol	90		101		30-130	12		30
2,4-Dichlorophenol	100		119		30-130	17		30
2,4-Dimethylphenol	93		124		30-130	29		30
2-Nitrophenol	94		107		30-130	13		30
4-Nitrophenol	102		120		30-130	16		30
2,4-Dinitrophenol	84		86		30-130	2		30
Pentachlorophenol	88		104		30-130	17		30
Phenol	93		104		30-130	11		30
2-Methylphenol	94		110		30-130	16		30
3-Methylphenol/4-Methylphenol	99		121		30-130	20		30
2,4,5-Trichlorophenol	114		143	Q	30-130	23		30

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
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MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG743576-2 WG743576-3

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>
2-Fluorophenol	77		87		30-130
Phenol-d6	87		97		30-130
Nitrobenzene-d5	85		94		30-130
2-Fluorobiphenyl	90		105		30-130
2,4,6-Tribromophenol	89		101		30-130
4-Terphenyl-d14	100		112		30-130

# PETROLEUM HYDROCARBONS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428385-02  
Client ID: COMPOSITE D-18,D-19 AND D-20 ORGANICS  
Sample Location: BOSTON, MA  
Matrix: Silt/Clay  
Analytical Method: 1,8015C(M)  
Analytical Date: 12/01/14 02:53  
Analyst: KB  
Percent Solids: 80%

Date Collected: 11/24/14 11:00  
Date Received: 11/24/14  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 11/25/14 00:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	41200	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	92		40-140



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8015C(M)  
**Analytical Date:** 12/01/14 00:00  
**Analyst:** KB

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/25/14 00:52

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 02 Batch: WG743543-1					
TPH	ND		ug/kg	32800	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	90		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02 Batch: WG743543-2								
TPH	108		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	100				40-140

**Lab Duplicate Analysis**  
**Batch Quality Control**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02 QC Batch ID: WG743543-3 QC Sample: L1428162-01 Client ID: DUP Sample						
TPH	140000	199000	ug/kg	35		40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	96		99		40-140

# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428385-02  
 Client ID: COMPOSITE D-18,D-19 AND D-20 ORGANICS  
 Sample Location: BOSTON, MA  
 Matrix: Silt/Clay  
 Analytical Method: 97,8082  
 Analytical Date: 11/25/14 17:04  
 Analyst: JW  
 Percent Solids: 80%

Date Collected: 11/24/14 11:00  
 Date Received: 11/24/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/25/14 03:42  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/25/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/25/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	39.9	--	1	A
Aroclor 1221	ND		ug/kg	39.9	--	1	A
Aroclor 1232	ND		ug/kg	39.9	--	1	A
Aroclor 1242	ND		ug/kg	39.9	--	1	A
Aroclor 1248	ND		ug/kg	39.9	--	1	A
Aroclor 1254	ND		ug/kg	39.9	--	1	A
Aroclor 1260	ND		ug/kg	39.9	--	1	A
Aroclor 1262	ND		ug/kg	39.9	--	1	A
Aroclor 1268	ND		ug/kg	39.9	--	1	A
PCBs, Total	ND		ug/kg	39.9	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	54		30-150	A
2,4,5,6-Tetrachloro-m-xylene	62		30-150	B
Decachlorobiphenyl	66		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**Method Blank Analysis  
 Batch Quality Control**

**Analytical Method:** 97,8082  
**Analytical Date:** 11/25/14 18:54  
**Analyst:** JW

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/25/14 03:42  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 11/25/14  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 11/25/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 02 Batch: WG743570-1						
Aroclor 1016	ND		ug/kg	32.6	--	A
Aroclor 1221	ND		ug/kg	32.6	--	A
Aroclor 1232	ND		ug/kg	32.6	--	A
Aroclor 1242	ND		ug/kg	32.6	--	A
Aroclor 1248	ND		ug/kg	32.6	--	A
Aroclor 1254	ND		ug/kg	32.6	--	A
Aroclor 1260	ND		ug/kg	32.6	--	A
Aroclor 1262	ND		ug/kg	32.6	--	A
Aroclor 1268	ND		ug/kg	32.6	--	A
PCBs, Total	ND		ug/kg	32.6	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	65		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	85		30-150	B



## Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428385

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02 Batch: WG743570-2 WG743570-3									
Aroclor 1016	66		73		40-140	10		30	A
Aroclor 1260	53		59		40-140	11		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		77		30-150	A
Decachlorobiphenyl	56		62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		77		30-150	B
Decachlorobiphenyl	75		81		30-150	B

## METALS



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

Lab ID: L1428385-02  
 Client ID: COMPOSITE D-18,D-19 AND D-20 O  
 Sample Location: BOSTON, MA  
 Matrix: Silt/Clay  
 Percent Solids: 80%

Date Collected: 11/24/14 11:00  
 Date Received: 11/24/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	5.6		mg/kg	0.47	--	1	11/25/14 20:07	11/26/14 00:07	EPA 3050B	97,6010C	TT
Barium, Total	12		mg/kg	0.47	--	1	11/25/14 20:07	11/26/14 00:07	EPA 3050B	97,6010C	TT
Cadmium, Total	ND		mg/kg	0.47	--	1	11/25/14 20:07	11/26/14 00:07	EPA 3050B	97,6010C	TT
Chromium, Total	14		mg/kg	0.47	--	1	11/25/14 20:07	11/26/14 00:07	EPA 3050B	97,6010C	TT
Lead, Total	2.8		mg/kg	2.3	--	1	11/25/14 20:07	11/26/14 00:07	EPA 3050B	97,6010C	TT
Mercury, Total	ND		mg/kg	0.081	--	1	11/25/14 08:01	11/25/14 12:31	EPA 7471B	97,7471B	MC
Selenium, Total	ND		mg/kg	2.3	--	1	11/25/14 20:07	11/26/14 00:07	EPA 3050B	97,6010C	TT
Silver, Total	ND		mg/kg	0.47	--	1	11/25/14 20:07	11/26/14 00:07	EPA 3050B	97,6010C	TT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02 Batch: WG743554-1									
Mercury, Total	ND	mg/kg	0.083	--	1	11/25/14 08:01	11/25/14 12:04	97,7471B	MC

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02 Batch: WG743877-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	11/25/14 20:07	11/25/14 23:21	97,6010C	TT
Barium, Total	ND	mg/kg	0.40	--	1	11/25/14 20:07	11/25/14 23:21	97,6010C	TT
Cadmium, Total	ND	mg/kg	0.40	--	1	11/25/14 20:07	11/25/14 23:21	97,6010C	TT
Chromium, Total	ND	mg/kg	0.40	--	1	11/25/14 20:07	11/25/14 23:21	97,6010C	TT
Lead, Total	ND	mg/kg	2.0	--	1	11/25/14 20:07	11/25/14 23:21	97,6010C	TT
Selenium, Total	ND	mg/kg	2.0	--	1	11/25/14 20:07	11/25/14 23:21	97,6010C	TT
Silver, Total	ND	mg/kg	0.40	--	1	11/25/14 20:07	11/25/14 23:21	97,6010C	TT

### Prep Information

Digestion Method: EPA 3050B

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428385

Project Number: 4426.9.1D

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Westborough Lab Associated sample(s): 02 Batch: WG743554-2 WG743554-3 SRM Lot Number: D083-540								
Mercury, Total	94		92		75-126	2		30
MCP Total Metals - Westborough Lab Associated sample(s): 02 Batch: WG743877-2 WG743877-3 SRM Lot Number: D083-540								
Arsenic, Total	98		98		78-122	0		30
Barium, Total	90		96		82-117	6		30
Cadmium, Total	91		93		82-118	2		30
Chromium, Total	93		95		79-121	2		30
Lead, Total	91		93		81-119	2		30
Selenium, Total	102		102		78-123	0		30
Silver, Total	91		94		74-125	3		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D**Project Number:** 4426.9.1D**Lab Number:** L1428385**Report Date:** 12/02/14**SAMPLE RESULTS**

**Lab ID:** L1428385-02  
**Client ID:** COMPOSITE D-18,D-19 AND D-20 O  
**Sample Location:** BOSTON, MA  
**Matrix:** Silt/Clay

**Date Collected:** 11/24/14 11:00  
**Date Received:** 11/24/14  
**Field Prep:** Not Specified

**Test Material Information**

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Soil  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

<b>Parameter</b>	<b>Result</b>	<b>Date Analyzed</b>	<b>Analytical Method</b>	<b>Analyst</b>
<b>Ignitability of Solids - Westborough Lab</b>				
Ignitability	NI	11/25/14 13:41	1,1030	AB



Project Name: FAN PIER PARCEL D

Lab Number: L1428385

Project Number: 4426.9.1D

Report Date: 12/02/14

## SAMPLE RESULTS

Lab ID: L1428385-01

Date Collected: 11/24/14 11:00

Client ID: D-18 S13 24-26

Date Received: 11/24/14

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Silt/Clay

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.0		%	0.100	NA	1	-	11/24/14 21:01	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

**SAMPLE RESULTS**

**Lab ID:** L1428385-02  
**Client ID:** COMPOSITE D-18,D-19 AND D-20 O  
**Sample Location:** BOSTON, MA  
**Matrix:** Silt/Clay

**Date Collected:** 11/24/14 11:00  
**Date Received:** 11/24/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	670		umhos/cm	10	--	1	-	11/24/14 21:50	1,9050A	AS
Solids, Total	80.0		%	0.100	NA	1	-	11/24/14 21:01	30,2540G	RT
pH (H)	8.4		SU	-	NA	1	-	11/24/14 23:30	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	11/26/14 18:10	11/26/14 19:48	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	11/26/14 18:10	11/26/14 19:41	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1428385

Project Number: 4426.9.1D

Report Date: 12/02/14

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG744200-1										
Cyanide, Reactive	ND		mg/kg	10	--	1	11/26/14 18:10	11/26/14 19:47	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG744201-1										
Sulfide, Reactive	ND		mg/kg	10	--	1	11/26/14 18:10	11/26/14 19:40	1,7.3	TL



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1428385

Report Date: 12/02/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG743510-1								
pH	101		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG743520-1								
Specific Conductance	98		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG744200-2								
Cyanide, Reactive	47		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG744201-2								
Sulfide, Reactive	84		-		60-125	-		40

### Lab Duplicate Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG743509-1 QC Sample: L1428177-05 Client ID: DUP Sample						
Solids, Total	66.1	68.2	%	3		20
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG743510-2 QC Sample: L1428170-03 Client ID: DUP Sample						
pH	7.8	7.8	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG743520-2 QC Sample: L1428381-01 Client ID: DUP Sample						
Specific Conductance	320	500	umhos/cm	44	Q	20
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG744200-3 QC Sample: L1428387-05 Client ID: DUP Sample						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG744201-3 QC Sample: L1428387-05 Client ID: DUP Sample						
Sulfide, Reactive	ND	ND	mg/kg	NC		40



Project Name: FAN PIER PARCEL D

Lab Number: L1428385

Project Number: 4426.9.1D

Report Date: 12/02/14

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 11/24/2014 19:13

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1428385-01A	Vial MeOH preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)
L1428385-01B	Vial water preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)
L1428385-01C	Vial water preserved	A	N/A	5.1	Y	Absent	MCP-8260HLW-10(14)
L1428385-02A	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428385-02B	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D**Project Number:** 4426.9.1D**Lab Number:** L1428385**Report Date:** 12/02/14**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1428385-02C	Glass 250ml/8oz unpreserved	A	N/A	5.1	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

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

### Terms

**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.
- 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.

**Report Format:** Data Usability Report



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

#### **Data Qualifiers**

- 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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428385  
**Report Date:** 12/02/14

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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 April 15, 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 8330A/B:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.

**EPA 8270D:** 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**

**EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4,**

**SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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



L1428385

# CHAIN OF CUSTODY

PAGE 1 OF 1



Westborough, MA    Mansfield, MA  
 TEL: 508-898-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3288

### Project Information

Project Name: Fan Pier Parcel D

### Client Information

Client: McPhail Associates, LLC

Project Location: Boston, MA

Project #: 4426.9.1D

Address: 2269 Massachusetts Avenue

Project Manager: Ben Downing/Peter DeChaves

Cambridge, MA 02140

ALPHA Quote #: Fan Pier Pricing

Phone: 6178681420

### Turn-Around Time

Fax: 6178681423

Standard     Rush (ONLY IF PRE-APPROVED)

Email: bdowning@mcphailgeo.com

Due Date: 12/2/14    Time:

These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT

\*Denotes obtain total solid sample from composite sample.

\*\*Minus VOCs

Date Rec'd in Lab: 11/24/14    ALPHA Job #: L1428385 91

**Report Information**    **Data Deliverables**    **Billing Information**

FAX     EMAIL     Same as Client info    PO #:

ADEx     Add'l Deliverables

**Regulatory Requirements/Report Limits**

State/Fed Program: MA    Criteria: RCS-1

**MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS**

Yes     No    Are MCP Analytical Methods Required?

Yes     No    Are CT RCP (Reasonable Confidence Protocols) Required?

ANALYSIS														SAMPLE HANDLING	TOTAL # BOTTLES	
VOCs (8260)*	Soil Management Package IV**															Filtration
															<input type="checkbox"/> Done	3
															<input checked="" type="checkbox"/> Not Needed	
															<input type="checkbox"/> Lab to do	
															Preservation	
															<input type="checkbox"/> Lab to do	
															(Please specify below)	

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials															Sample Specific Comments			
		Date	Time			VOCs (8260)*	Soil Management Package IV**																
28385-01	D-18 S13 24-26	11/24/14	1100	Organics	TRC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3	
28385-02	Composite D-18, D-19 and D-20 Organics		1100			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**IS YOUR PROJECT MA MCP or CT RCP?**

FORM NO. 01-01(1)  
(rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
<i>Tom Corneen</i>	11/24/14 15:05	<i>[Signature]</i>	11/24/14 15:05
<i>[Signature]</i>	11/24/14 18:05	<i>[Signature]</i>	11/24/14 18:05

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

7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1428385

Instrument ID: Voal04.i      Calibration Date: 26-NOV-2014      Time: 07:30

Lab File ID: 1126A03      Init. Calib. Date(s): 14-NOV-2      14-NOV-2

Sample No: 8260 CCAL      Init. Calib. Times : 18:34      21:39

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
=====	=====	=====	=====	=====	=====	
dichlorodifluoromethane	.16305	.19509	.1	20	20	
chloromethane	.31614	.34639	.1	10	20	
vinyl chloride	.2743	.34195	.1	25	20	F
bromomethane	100	92.196	.1	-8	20	
chloroethane	.13774	.18069	.1	31	20	F
trichlorofluoromethane	.27387	.36948	.1	35	20	F
ethyl ether	.09232	.1019	.05	10	20	
1,1,-dichloroethene	.2177	.22391	.1	3	20	
carbon disulfide	.70085	.77913	.1	11	20	
methylene chloride	.26137	.28258	.1	8	20	
acetone	100	91.301	.1	-9	20	
trans-1,2-dichloroethene	.25442	.28807	.1	13	20	
methyl tert butyl ether	.55986	.58453	.1	4	20	
Diisopropyl Ether	.94156	1.0291	.05	9	20	
1,1-dichloroethane	.49595	.54176	.2	9	20	
Ethyl-Tert-Butyl-Ether	.82014	.8506	.05	4	20	
cis-1,2-dichloroethene	.28074	.29797	.1	6	20	
2,2-dichloropropane	.35677	.38413	.05	8	20	
bromochloromethane	.12861	.13108	.05	2	20	
chloroform	.44837	.46768	.2	4	20	
carbontetrachloride	.32832	.37359	.1	14	20	
tetrahydrofuran	.06814	.05938	.05	-13	20	
1,1,1-trichloroethane	.37681	.42102	.1	12	20	
2-butanone	.09192	.08172	.1	-11	20	F
1,1-dichloropropene	.33481	.38845	.05	16	20	
benzene	.97656	1.0792	.5	11	20	
Tertiary-Amyl Methyl Ether	.62875	.65465	.05	4	20	
1,2-dichloroethane	.30244	.33458	.1	11	20	
trichloroethene	.264	.30367	.2	15	20	
dibromomethane	.14205	.14545	.05	2	20	
1,2-dichloropropane	.27957	.30103	.1	8	20	
bromodichloromethane	.33098	.3552	.2	7	20	
1,4-dioxane	.00202	.00173	.05	-14	20	F
cis-1,3-dichloropropene	.39239	.41294	.2	5	20	
toluene	.87644	.89743	.4	2	20	
tetrachloroethene	.36363	.40739	.2	12	20	
4-methyl-2-pentanone	.07517	.07464	.1	-1	20	F
trans-1,3-dichloropropene	.46349	.46481	.1	0	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1428385

Instrument ID: Voal04.i      Calibration Date: 26-NOV-2014      Time: 07:30

Lab File ID: 1126A03      Init. Calib. Date(s): 14-NOV-2      14-NOV-2

Sample No: 8260 CCAL      Init. Calib. Times : 18:34      21:39

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.23224	.23108	.1	-1	20
chlorodibromomethane	.34856	.34385	.1	-1	20
1,3-dichloropropane	.45928	.46071	.05	0	20
1,2-dibromoethane	.28223	.27804	.1	-1	20
2-hexanone	.19278	.17185	.1	-11	20
chlorobenzene	1.0010	1.0630	.5	6	20
ethyl benzene	1.6393	1.7845	.1	9	20
1,1,1,2-tetrachloroethane	.3581	.3736	.05	4	20
p/m xylene	.63448	.69686	.1	10	20
o xylene	.6125	.66165	.3	8	20
styrene	1.0136	1.0894	.3	7	20
bromoform	.39846	.3859	.1	-3	20
isopropylbenzene	3.1932	3.5344	.1	11	20
bromobenzene	.84329	.87101	.05	3	20
n-propylbenzene	3.6352	4.0744	.05	12	20
1,1,2,2,-tetrachloroethane	.67812	.67413	.3	-1	20
2-chlorotoluene	2.3296	2.5288	.05	9	20
1,2,3-trichloropropane	.49557	.48441	.05	-2	20
1,3,5-trimethylbenzene	2.6303	2.9134	.05	11	20
4-chlorotoluene	2.2427	2.4295	.05	8	20
tert-butylbenzene	2.2838	2.5261	.05	11	20
1,2,4-trimethylbenzene	2.6527	2.9360	.05	11	20
sec-butylbenzene	3.4242	3.8895	.05	14	20
p-isopropyltoluene	2.8275	3.2480	.05	15	20
1,3-dichlorobenzene	1.5651	1.7105	.6	9	20
1,4-dichlorobenzene	1.6000	1.7334	.5	8	20
n-butylbenzene	2.4383	3.0089	.05	23	20
1,2-dichlorobenzene	1.4443	1.5350	.4	6	20
1,2-dibromo-3-chloropropane	.10573	.09721	.05	-8	20
hexachlorobutadiene	.45607	.52492	.05	15	20
1,2,4-trichlorobenzene	.95262	1.0708	.2	12	20
naphthalene	2.1836	2.0232	.05	-7	20
1,2,3-trichlorobenzene	.88772	.93461	.05	5	20
dibromofluoromethane	.2538	.25094	.05	-1	30
1,2-dichloroethane-d4	.22706	.22141	.05	-2	30
toluene-d8	1.3076	1.2385	.05	-5	30
4-bromofluorobenzene	.90729	.89018	.05	-2	30

F

FORM VII MCP-8260HLW-10



## ANALYTICAL REPORT

Lab Number:	L1428671
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	12/04/14

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), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1428671-01	D-17 S16 30-30.7	SOIL	BOSTON, MA	11/26/14 10:15	11/26/14
L1428671-02	D-17 30-42 CLAY	SOIL	BOSTON, MA	11/26/14 10:15	11/26/14

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

### MADEP MCP Response Action Analytical Report Certification

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

### Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. 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.

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**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

The sample submitted for Volatile Organics was received without raw soil for the Total Solids analysis. The Total Solids results from the corresponding composite sample was utilized in the dry weight calculation of the Volatile Organics data.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1428671-01, did not meet the method required minimum response factor on the lowest calibration standard for 2-butanone (0.06561), 4-methyl-2-pentanone (0.08030), and 1,4-dioxane (0.00260), as well as the average response factor for 2-butanone, 4-methyl-2-pentanone, and 1,4-dioxane. In addition, a quadratic fit was utilized for chloroethane.

The continuing calibration standard, associated with L1428671-01, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

##### Metals

In reference to question I:

All samples were analyzed for a subset of MCP elements per the Chain of Custody.

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: 12/04/14



# ORGANICS

# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**SAMPLE RESULTS**

Lab ID: L1428671-01  
 Client ID: D-17 S16 30-30.7  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 12/01/14 10:31  
 Analyst: BN  
 Percent Solids: 78%

Date Collected: 11/26/14 10:15  
 Date Received: 11/26/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	23	--	1
1,1-Dichloroethane	ND		ug/kg	3.4	--	1
Chloroform	ND		ug/kg	3.4	--	1
Carbon tetrachloride	ND		ug/kg	2.3	--	1
1,2-Dichloropropane	ND		ug/kg	8.0	--	1
Dibromochloromethane	ND		ug/kg	2.3	--	1
1,1,2-Trichloroethane	ND		ug/kg	3.4	--	1
Tetrachloroethene	ND		ug/kg	2.3	--	1
Chlorobenzene	ND		ug/kg	2.3	--	1
Trichlorofluoromethane	ND		ug/kg	9.1	--	1
1,2-Dichloroethane	ND		ug/kg	2.3	--	1
1,1,1-Trichloroethane	ND		ug/kg	2.3	--	1
Bromodichloromethane	ND		ug/kg	2.3	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.3	--	1
cis-1,3-Dichloropropene	ND		ug/kg	2.3	--	1
1,3-Dichloropropene, Total	ND		ug/kg	2.3	--	1
1,1-Dichloropropene	ND		ug/kg	9.1	--	1
Bromoform	ND		ug/kg	9.1	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	2.3	--	1
Benzene	ND		ug/kg	2.3	--	1
Toluene	ND		ug/kg	3.4	--	1
Ethylbenzene	ND		ug/kg	2.3	--	1
Chloromethane	ND		ug/kg	9.1	--	1
Bromomethane	ND		ug/kg	4.6	--	1
Vinyl chloride	ND		ug/kg	4.6	--	1
Chloroethane	ND		ug/kg	4.6	--	1
1,1-Dichloroethene	ND		ug/kg	2.3	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.4	--	1
Trichloroethene	ND		ug/kg	2.3	--	1
1,2-Dichlorobenzene	ND		ug/kg	9.1	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**SAMPLE RESULTS**

**Lab ID:** L1428671-01  
**Client ID:** D-17 S16 30-30.7  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/26/14 10:15  
**Date Received:** 11/26/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	9.1	--	1
1,4-Dichlorobenzene	ND		ug/kg	9.1	--	1
Methyl tert butyl ether	ND		ug/kg	4.6	--	1
p/m-Xylene	ND		ug/kg	4.6	--	1
o-Xylene	ND		ug/kg	4.6	--	1
Xylenes, Total	ND		ug/kg	4.6	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.3	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.3	--	1
Dibromomethane	ND		ug/kg	9.1	--	1
1,2,3-Trichloropropane	ND		ug/kg	9.1	--	1
Styrene	ND		ug/kg	4.6	--	1
Dichlorodifluoromethane	ND		ug/kg	23	--	1
Acetone	ND		ug/kg	82	--	1
Carbon disulfide	ND		ug/kg	9.1	--	1
Methyl ethyl ketone	ND		ug/kg	23	--	1
Methyl isobutyl ketone	ND		ug/kg	23	--	1
2-Hexanone	ND		ug/kg	23	--	1
Bromochloromethane	ND		ug/kg	9.1	--	1
Tetrahydrofuran	35		ug/kg	9.1	--	1
2,2-Dichloropropane	ND		ug/kg	11	--	1
1,2-Dibromoethane	ND		ug/kg	9.1	--	1
1,3-Dichloropropane	ND		ug/kg	9.1	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	2.3	--	1
Bromobenzene	ND		ug/kg	11	--	1
n-Butylbenzene	ND		ug/kg	2.3	--	1
sec-Butylbenzene	ND		ug/kg	2.3	--	1
tert-Butylbenzene	ND		ug/kg	9.1	--	1
o-Chlorotoluene	ND		ug/kg	9.1	--	1
p-Chlorotoluene	ND		ug/kg	9.1	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	9.1	--	1
Hexachlorobutadiene	ND		ug/kg	9.1	--	1
Isopropylbenzene	ND		ug/kg	2.3	--	1
p-Isopropyltoluene	ND		ug/kg	2.3	--	1
Naphthalene	22		ug/kg	9.1	--	1
n-Propylbenzene	ND		ug/kg	2.3	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	9.1	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	9.1	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	9.1	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	9.1	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**SAMPLE RESULTS**

Lab ID: L1428671-01  
 Client ID: D-17 S16 30-30.7  
 Sample Location: BOSTON, MA

Date Collected: 11/26/14 10:15  
 Date Received: 11/26/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	11	--	1
Diisopropyl Ether	ND		ug/kg	9.1	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	9.1	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	9.1	--	1
1,4-Dioxane	ND		ug/kg	91	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	92		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 12/01/14 08:46  
**Analyst:** BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG744821-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 12/01/14 08:46  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG744821-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 12/01/14 08:46  
**Analyst:** BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG744821-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	87		70-130



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428671

Project Number: 4426.9.1D

Report Date: 12/04/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG744821-1 WG744821-2								
Methylene chloride	119		109		70-130	9		20
1,1-Dichloroethane	123		116		70-130	6		20
Chloroform	109		103		70-130	6		20
Carbon tetrachloride	95		86		70-130	10		20
1,2-Dichloropropane	129		123		70-130	5		20
Dibromochloromethane	92		87		70-130	6		20
1,1,2-Trichloroethane	114		109		70-130	4		20
Tetrachloroethene	90		82		70-130	9		20
Chlorobenzene	99		92		70-130	7		20
Trichlorofluoromethane	93		86		70-130	8		20
1,2-Dichloroethane	111		107		70-130	4		20
1,1,1-Trichloroethane	99		91		70-130	8		20
Bromodichloromethane	106		102		70-130	4		20
trans-1,3-Dichloropropene	111		105		70-130	6		20
cis-1,3-Dichloropropene	115		110		70-130	4		20
1,1-Dichloropropene	112		104		70-130	7		20
Bromoform	87		82		70-130	6		20
1,1,2,2-Tetrachloroethane	112		106		70-130	6		20
Benzene	120		113		70-130	6		20
Toluene	104		97		70-130	7		20
Ethylbenzene	101		94		70-130	7		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428671

Project Number: 4426.9.1D

Report Date: 12/04/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG744821-1 WG744821-2								
Chloromethane	132	Q	124		70-130	6		20
Bromomethane	107		100		70-130	7		20
Vinyl chloride	98		89		70-130	10		20
Chloroethane	97		90		70-130	7		20
1,1-Dichloroethene	102		94		70-130	8		20
trans-1,2-Dichloroethene	105		99		70-130	6		20
Trichloroethene	107		99		70-130	8		20
1,2-Dichlorobenzene	90		84		70-130	7		20
1,3-Dichlorobenzene	92		84		70-130	9		20
1,4-Dichlorobenzene	92		85		70-130	8		20
Methyl tert butyl ether	103		100		70-130	3		20
p/m-Xylene	98		91		70-130	7		20
o-Xylene	95		90		70-130	5		20
cis-1,2-Dichloroethene	109		103		70-130	6		20
Dibromomethane	106		101		70-130	5		20
1,2,3-Trichloropropane	112		104		70-130	7		20
Styrene	93		87		70-130	7		20
Dichlorodifluoromethane	97		90		70-130	7		20
Acetone	114		108		70-130	5		20
Carbon disulfide	75		69	Q	70-130	8		20
Methyl ethyl ketone	120		120		70-130	0		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428671

Project Number: 4426.9.1D

Report Date: 12/04/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG744821-1 WG744821-2								
Methyl isobutyl ketone	101		101		70-130	0		20
2-Hexanone	92		89		70-130	3		20
Bromochloromethane	101		97		70-130	4		20
Tetrahydrofuran	123		123		70-130	0		20
2,2-Dichloropropane	103		95		70-130	8		20
1,2-Dibromoethane	99		94		70-130	5		20
1,3-Dichloropropane	118		111		70-130	6		20
1,1,1,2-Tetrachloroethane	95		88		70-130	8		20
Bromobenzene	89		83		70-130	7		20
n-Butylbenzene	101		92		70-130	9		20
sec-Butylbenzene	96		87		70-130	10		20
tert-Butylbenzene	91		84		70-130	8		20
o-Chlorotoluene	104		96		70-130	8		20
p-Chlorotoluene	102		94		70-130	8		20
1,2-Dibromo-3-chloropropane	80		75		70-130	6		20
Hexachlorobutadiene	86		76		70-130	12		20
Isopropylbenzene	93		86		70-130	8		20
p-Isopropyltoluene	91		83		70-130	9		20
Naphthalene	88		84		70-130	5		20
n-Propylbenzene	100		92		70-130	8		20
1,2,3-Trichlorobenzene	89		83		70-130	7		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428671

Project Number: 4426.9.1D

Report Date: 12/04/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG744821-1 WG744821-2								
1,2,4-Trichlorobenzene	89		82		70-130	8		20
1,3,5-Trimethylbenzene	96		89		70-130	8		20
1,2,4-Trimethylbenzene	96		88		70-130	9		20
Diethyl ether	110		106		70-130	4		20
Diisopropyl Ether	128		124		70-130	3		20
Ethyl-Tert-Butyl-Ether	114		109		70-130	4		20
Tertiary-Amyl Methyl Ether	106		102		70-130	4		20
1,4-Dioxane	110		107		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		100		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	105		104		70-130
Dibromofluoromethane	96		96		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**SAMPLE RESULTS**

Lab ID: L1428671-02  
 Client ID: D-17 30-42 CLAY  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 12/02/14 02:11  
 Analyst: PS  
 Percent Solids: 78%

Date Collected: 11/26/14 10:15  
 Date Received: 11/26/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/29/14 13:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**SAMPLE RESULTS**

**Lab ID:** L1428671-02  
**Client ID:** D-17 30-42 CLAY  
**Sample Location:** BOSTON, MA

**Date Collected:** 11/26/14 10:15  
**Date Received:** 11/26/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	420	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	66		30-130
Phenol-d6	74		30-130
Nitrobenzene-d5	78		30-130
2-Fluorobiphenyl	73		30-130
2,4,6-Tribromophenol	79		30-130
4-Terphenyl-d14	96		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 12/01/14 16:25  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/29/14 13:37

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02 Batch: WG744345-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 12/01/14 16:25  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/29/14 13:37

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02 Batch: WG744345-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 12/01/14 16:25  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/29/14 13:37

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02 Batch: WG744345-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	79		30-130
Phenol-d6	89		30-130
Nitrobenzene-d5	89		30-130
2-Fluorobiphenyl	85		30-130
2,4,6-Tribromophenol	77		30-130
4-Terphenyl-d14	95		30-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428671

Project Number: 4426.9.1D

Report Date: 12/04/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG744345-2 WG744345-3								
Acenaphthene	69		73		40-140	6		30
1,2,4-Trichlorobenzene	76		78		40-140	3		30
Hexachlorobenzene	77		81		40-140	5		30
Bis(2-chloroethyl)ether	72		72		40-140	0		30
2-Chloronaphthalene	80		82		40-140	2		30
1,2-Dichlorobenzene	73		71		40-140	3		30
1,3-Dichlorobenzene	72		68		40-140	6		30
1,4-Dichlorobenzene	72		68		40-140	6		30
3,3'-Dichlorobenzidine	62		78		40-140	23		30
2,4-Dinitrotoluene	92		97		40-140	5		30
2,6-Dinitrotoluene	96		100		40-140	4		30
Azobenzene	80		84		40-140	5		30
Fluoranthene	78		84		40-140	7		30
4-Bromophenyl phenyl ether	77		82		40-140	6		30
Bis(2-chloroisopropyl)ether	72		72		40-140	0		30
Bis(2-chloroethoxy)methane	79		79		40-140	0		30
Hexachlorobutadiene	72		74		40-140	3		30
Hexachloroethane	72		70		40-140	3		30
Isophorone	82		82		40-140	0		30
Naphthalene	70		72		40-140	3		30
Nitrobenzene	86		88		40-140	2		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428671

Project Number: 4426.9.1D

Report Date: 12/04/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG744345-2 WG744345-3								
Bis(2-Ethylhexyl)phthalate	73		80		40-140	9		30
Butyl benzyl phthalate	79		84		40-140	6		30
Di-n-butylphthalate	76		82		40-140	8		30
Di-n-octylphthalate	77		82		40-140	6		30
Diethyl phthalate	80		84		40-140	5		30
Dimethyl phthalate	79		82		40-140	4		30
Benzo(a)anthracene	76		82		40-140	8		30
Benzo(a)pyrene	74		80		40-140	8		30
Benzo(b)fluoranthene	74		84		40-140	13		30
Benzo(k)fluoranthene	76		82		40-140	8		30
Chrysene	68		76		40-140	11		30
Acenaphthylene	81		84		40-140	4		30
Anthracene	73		79		40-140	8		30
Benzo(ghi)perylene	74		80		40-140	8		30
Fluorene	75		78		40-140	4		30
Phenanthrene	70		76		40-140	8		30
Dibenzo(a,h)anthracene	75		83		40-140	10		30
Indeno(1,2,3-cd)Pyrene	71		77		40-140	8		30
Pyrene	75		81		40-140	8		30
Aniline	49		60		40-140	20		30
4-Chloroaniline	82		90		40-140	9		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428671

Project Number: 4426.9.1D

Report Date: 12/04/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG744345-2 WG744345-3								
Dibenzofuran	75		79		40-140	5		30
2-Methylnaphthalene	82		85		40-140	4		30
Acetophenone	84		84		40-140	0		30
2,4,6-Trichlorophenol	95		98		30-130	3		30
2-Chlorophenol	91		90		30-130	1		30
2,4-Dichlorophenol	91		95		30-130	4		30
2,4-Dimethylphenol	86		87		30-130	1		30
2-Nitrophenol	114		114		30-130	0		30
4-Nitrophenol	98		101		30-130	3		30
2,4-Dinitrophenol	91		96		30-130	5		30
Pentachlorophenol	78		81		30-130	4		30
Phenol	84		85		30-130	1		30
2-Methylphenol	90		92		30-130	2		30
3-Methylphenol/4-Methylphenol	94		94		30-130	0		30
2,4,5-Trichlorophenol	96		97		30-130	1		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428671

Project Number: 4426.9.1D

Report Date: 12/04/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG744345-2 WG744345-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	87		85		30-130
Phenol-d6	94		94		30-130
Nitrobenzene-d5	98		98		30-130
2-Fluorobiphenyl	83		86		30-130
2,4,6-Tribromophenol	82		91		30-130
4-Terphenyl-d14	82		90		30-130

# PETROLEUM HYDROCARBONS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**SAMPLE RESULTS**

Lab ID: L1428671-02  
 Client ID: D-17 30-42 CLAY  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 12/01/14 22:11  
 Analyst: AR  
 Percent Solids: 78%

Date Collected: 11/26/14 10:15  
 Date Received: 11/26/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/30/14 04:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
--	--	--	--	--	--	--

TPH	ND		ug/kg	41000	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	83		40-140



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8015C(M)  
**Analytical Date:** 12/01/14 15:03  
**Analyst:** AR

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/30/14 04:00

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 02 Batch: WG744363-1					
TPH	ND		ug/kg	31700	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	81		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02 Batch: WG744363-2								
TPH	84		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	87				40-140

### Lab Duplicate Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02 QC Batch ID: WG744363-3 QC Sample: L1428491-29 Client ID: DUP Sample						
TPH	169000	109000	ug/kg	43	Q	40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	86		88		40-140

# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**SAMPLE RESULTS**

Lab ID: L1428671-02  
 Client ID: D-17 30-42 CLAY  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082  
 Analytical Date: 12/02/14 05:53  
 Analyst: JW  
 Percent Solids: 78%

Date Collected: 11/26/14 10:15  
 Date Received: 11/26/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 11/29/14 11:15  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 11/30/14  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 11/30/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	41.1	--	1	A
Aroclor 1221	ND		ug/kg	41.1	--	1	A
Aroclor 1232	ND		ug/kg	41.1	--	1	A
Aroclor 1242	ND		ug/kg	41.1	--	1	A
Aroclor 1248	ND		ug/kg	41.1	--	1	A
Aroclor 1254	ND		ug/kg	41.1	--	1	A
Aroclor 1260	ND		ug/kg	41.1	--	1	A
Aroclor 1262	ND		ug/kg	41.1	--	1	A
Aroclor 1268	ND		ug/kg	41.1	--	1	A
PCBs, Total	ND		ug/kg	41.1	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	58		30-150	A
Decachlorobiphenyl	62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	75		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**Method Blank Analysis  
 Batch Quality Control**

**Analytical Method:** 97,8082  
**Analytical Date:** 12/01/14 17:58  
**Analyst:** JW

**Extraction Method:** EPA 3546  
**Extraction Date:** 11/29/14 11:15  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 11/30/14  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 11/30/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 02 Batch: WG744336-1						
Aroclor 1016	ND		ug/kg	33.0	--	A
Aroclor 1221	ND		ug/kg	33.0	--	A
Aroclor 1232	ND		ug/kg	33.0	--	A
Aroclor 1242	ND		ug/kg	33.0	--	A
Aroclor 1248	ND		ug/kg	33.0	--	A
Aroclor 1254	ND		ug/kg	33.0	--	A
Aroclor 1260	ND		ug/kg	33.0	--	A
Aroclor 1262	ND		ug/kg	33.0	--	A
Aroclor 1268	ND		ug/kg	33.0	--	A
PCBs, Total	ND		ug/kg	33.0	--	A

Surrogate	%Recovery	Qualifier	Acceptance	Column
			Criteria	
2,4,5,6-Tetrachloro-m-xylene	69		30-150	A
Decachlorobiphenyl	71		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	81		30-150	B



## Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428671

Project Number: 4426.9.1D

Report Date: 12/04/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02 Batch: WG744336-2 WG744336-3									
Aroclor 1016	93		87		40-140	7		30	A
Aroclor 1260	92		89		40-140	3		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	82		78		30-150	A
Decachlorobiphenyl	85		82		30-150	A
2,4,5,6-Tetrachloro-m-xylene	86		82		30-150	B
Decachlorobiphenyl	96		92		30-150	B

## METALS



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**SAMPLE RESULTS**

Lab ID: L1428671-02  
 Client ID: D-17 30-42 CLAY  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 78%

Date Collected: 11/26/14 10:15  
 Date Received: 11/26/14  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	5.1		mg/kg	0.49	--	1	12/01/14 18:15	12/02/14 21:26	EPA 3050B	97,6010C	JH
Barium, Total	56		mg/kg	0.49	--	1	12/01/14 18:15	12/02/14 21:26	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.49	--	1	12/01/14 18:15	12/02/14 21:26	EPA 3050B	97,6010C	JH
Chromium, Total	31		mg/kg	0.49	--	1	12/01/14 18:15	12/02/14 21:26	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.4	--	1	12/01/14 18:15	12/02/14 21:26	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.089	--	1	12/02/14 09:49	12/02/14 11:48	EPA 7471B	97,7471B	MC
Selenium, Total	ND		mg/kg	2.4	--	1	12/01/14 18:15	12/02/14 21:26	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.49	--	1	12/01/14 18:15	12/02/14 21:26	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02 Batch: WG744677-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	12/01/14 18:15	12/02/14 19:38	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	12/01/14 18:15	12/02/14 19:38	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	12/01/14 18:15	12/02/14 19:38	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	12/01/14 18:15	12/02/14 19:38	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	12/01/14 18:15	12/02/14 19:38	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	12/01/14 18:15	12/02/14 19:38	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	12/01/14 18:15	12/02/14 19:38	97,6010C	JH

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02 Batch: WG744772-1									
Mercury, Total	ND	mg/kg	0.083	--	1	12/02/14 09:49	12/02/14 11:08	97,7471B	MC

### Prep Information

Digestion Method: EPA 7471B

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428671

Project Number: 4426.9.1D

Report Date: 12/04/14

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 02 Batch: WG744677-2 WG744677-3 SRM Lot Number: D083-540								
Arsenic, Total	98		90		78-122	9		30
Barium, Total	90		84		82-117	7		30
Cadmium, Total	93		85		82-118	9		30
Chromium, Total	88		85		79-121	3		30
Lead, Total	90		86		81-119	5		30
Selenium, Total	102		96		78-123	6		30
Silver, Total	91		91		74-125	0		30
MCP Total Metals - Westborough Lab Associated sample(s): 02 Batch: WG744772-2 WG744772-3 SRM Lot Number: D083-540								
Mercury, Total	115		104		75-126	10		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

### SAMPLE RESULTS

**Lab ID:** L1428671-02  
**Client ID:** D-17 30-42 CLAY  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/26/14 10:15  
**Date Received:** 11/26/14  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Dry Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	12/01/14 21:24	1,1030	SB



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1428671

Report Date: 12/04/14

## SAMPLE RESULTS

Lab ID: L1428671-01  
 Client ID: D-17 S16 30-30.7  
 Sample Location: BOSTON, MA  
 Matrix: Soil

Date Collected: 11/26/14 10:15  
 Date Received: 11/26/14  
 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	78.4		%	0.100	NA	1	-	11/26/14 19:34	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

**SAMPLE RESULTS**

**Lab ID:** L1428671-02  
**Client ID:** D-17 30-42 CLAY  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 11/26/14 10:15  
**Date Received:** 11/26/14  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	1000		umhos/cm	10	--	1	-	11/27/14 00:10	1,9050A	LH
Solids, Total	78.4		%	0.100	NA	1	-	11/26/14 19:34	30,2540G	RT
pH (H)	8.2		SU	-	NA	1	-	11/26/14 23:30	1,9045D	LH
Cyanide, Reactive	ND		mg/kg	10	--	1	11/30/14 20:40	11/30/14 22:17	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	11/30/14 20:40	11/30/14 22:04	1,7.3	RP



Project Name: FAN PIER PARCEL D

Lab Number: L1428671

Project Number: 4426.9.1D

Report Date: 12/04/14

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG744403-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	11/30/14 20:40	11/30/14 22:11	1,7.3	RP
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG744404-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	11/30/14 20:40	11/30/14 21:56	1,7.3	RP



## Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1428671

Project Number: 4426.9.1D

Report Date: 12/04/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG744249-1								
Specific Conductance	98		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG744250-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG744403-2								
Cyanide, Reactive	31		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG744404-2								
Sulfide, Reactive	103		-		60-125	-		40

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG744246-1 QC Sample: L1428589-01 Client ID: DUP Sample						
Solids, Total	83.0	82.7	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG744249-2 QC Sample: L1428663-01 Client ID: DUP Sample						
Specific Conductance	26	25	umhos/cm	4		20
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG744250-2 QC Sample: L1428663-01 Client ID: DUP Sample						
pH	7.3	7.3	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG744403-3 QC Sample: L1428491-31 Client ID: DUP Sample						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG744404-3 QC Sample: L1428491-31 Client ID: DUP Sample						
Sulfide, Reactive	ND	ND	mg/kg	NC		40

Project Name: FAN PIER PARCEL D

Lab Number: L1428671

Project Number: 4426.9.1D

Report Date: 12/04/14

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 11/26/2014 17:45

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1428671-01A	Vial MeOH preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1428671-01B	Vial water preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1428671-01C	Vial water preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1428671-02A	Glass 250ml/8oz unpreserved	A	N/A	2.2	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1428671-02B	Glass 250ml/8oz unpreserved	A	N/A	2.2	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D**Project Number:** 4426.9.1D**Lab Number:** L1428671**Report Date:** 12/04/14**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Analysis(*)</b>
L1428671-02C	Glass 250ml/8oz unpreserved	A	N/A	2.2	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

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

### Terms

**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.
- 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.

**Report Format:** Data Usability Report



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

#### **Data Qualifiers**

- 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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1428671  
**Report Date:** 12/04/14

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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 April 15, 2014

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

### Westborough Facility

**EPA 524.2:** Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.

**EPA 8330A/B:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.

**EPA 8270D:** 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**

**EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4,**

**SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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



# CHAIN OF CUSTODY

PAGE / OF 1



Westborough, MA    Mansfield, MA  
 TEL: 508-898-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3288

## Project Information

Project Name: Fan Pier Parcel D

Project Location: Boston, MA

Project #: 4426.9.1D

Project Manager: Ben Downing/Peter DeChaves

ALPHA Quote #: Fan Pier Pricing

## Turn-Around Time

Standard     Rush (ONLY IF PRE-APPROVED)

Due Date: 12/4/14 Time:

## Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: 6178681420

Fax: 6178681423

Email: bdowning@mcphailgeo.com

These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT

\*Denotes obtain total solid sample from composite sample.

\*\*Minus VOCs

Date Rec'd in Lab: 11/26/14

ALPHA Job #: 01428671

## Report Information Data Deliverables

FAX     EMAIL  
 ADEx     Add'l Deliverables

## Billing Information

Same as Client info    PO #:

## Regulatory Requirements/Report Limits

State/Fed Program

MA

Criteria

RCS-1

## MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes     No    Are MCP Analytical Methods Required?  
 Yes     No    Are CT RCP (Reasonable Confidence Protocols) Required?

## ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	VOCs (8260)*	Soil Management Package IV**											SAMPLE HANDLING Filtration <input type="checkbox"/> Done <input checked="" type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)	TOTAL # BOTTLES					
		Date	Time																					
28671	-01 D-17 SLG 30-307	11/26/14	10:5	Clay	TMC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3	
	02 D-17 30-42 CLAY		10:5			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
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PLEASE ANSWER QUESTIONS ABOVE!

**IS YOUR PROJECT MA MCP or CT RCP?**

FORM NO: 01-01(1)  
(rev. 30-JUL-07)

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Relinquished By:	Date/Time		Received By:		Date/Time																	
<i>Tom Cormican</i>	11/26/14 1430		<i>[Signature]</i>		11/26/14 1440																	
<i>[Signature]</i>	11/26/14 1657		<i>[Signature]</i>		11/26/14 1657																	

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

7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1428671

Instrument ID: Voall10.i      Calibration Date: 01-DEC-2014      Time: 07:27

Lab File ID: 1201A02      Init. Calib. Date(s): 01-NOV-2      01-NOV-2

Sample No: 8260 CCAL      Init. Calib. Times : 14:22      17:25

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
=====	=====	=====	=====	=====	=====	
dichlorodifluoromethane	.17542	.17062	.1	-3	20	
chloromethane	.22578	.29757	.1	32	20	F
vinyl chloride	.3536	.34597	.1	-2	20	
bromomethane	100	107	.1	7	20	
chloroethane	100	97.039	.1	-3	20	
trichlorofluoromethane	.42041	.39057	.1	-7	20	
ethyl ether	.15818	.17351	.05	10	20	
1,1,-dichloroethene	.24685	.25185	.1	2	20	
carbon disulfide	100	75.067	.1	-25	20	F
methylene chloride	100	119	.1	19	20	
acetone	100	114	.1	14	20	
trans-1,2-dichloroethene	.28583	.30062	.1	5	20	
methyl tert butyl ether	.75484	.77846	.1	3	20	
Diisopropyl Ether	.72259	.92751	.05	28	20	F
1,1-dichloroethane	.46551	.57095	.2	23	20	F
Ethyl-Tert-Butyl-Ether	.791	.89999	.05	14	20	
cis-1,2-dichloroethene	.31256	.34093	.1	9	20	
2,2-dichloropropane	.41844	.43125	.05	3	20	
bromochloromethane	.12769	.12861	.05	1	20	
chloroform	.50247	.54993	.2	9	20	
carbontetrachloride	.3617	.34418	.1	-5	20	
tetrahydrofuran	.06073	.07492	.05	23	20	F
1,1,1-trichloroethane	.4409	.43653	.1	-1	20	
2-butanone	.07965	.09542	.1	20	20	F
1,1-dichloropropene	.38726	.43353	.05	12	20	
benzene	1.0985	1.3135	.5	20	20	
Tertiary-Amyl Methyl Ether	.76832	.81118	.05	6	20	
1,2-dichloroethane	.35041	.38907	.1	11	20	
trichloroethene	.29982	.32125	.2	7	20	
dibromomethane	.15557	.16479	.05	6	20	
1,2-dichloropropane	.24705	.31945	.1	29	20	F
bromodichloromethane	.35358	.37633	.2	6	20	
1,4-dioxane	.00262	.00287	.05	10	20	F
cis-1,3-dichloropropene	.42515	.48748	.2	15	20	
toluene	1.0347	1.0762	.4	4	20	
4-methyl-2-pentanone	.07723	.07809	.1	1	20	F
tetrachloroethene	.38928	.34881	.2	-10	20	
trans-1,3-dichloropropene	.51027	.56681	.1	11	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1428671

Instrument ID: Voall10.i      Calibration Date: 01-DEC-2014      Time: 07:27

Lab File ID: 1201A02      Init. Calib. Date(s): 01-NOV-2      01-NOV-2

Sample No: 8260 CCAL      Init. Calib. Times : 14:22      17:25

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.26087	.29779	.1	14	20
chlorodibromomethane	.3241	.29758	.1	-8	20
1,3-dichloropropane	.5397	.63765	.05	18	20
1,2-dibromoethane	.29971	.29658	.1	-1	20
2-hexanone	.16746	.15397	.1	-8	20
chlorobenzene	1.1131	1.0982	.5	-1	20
ethyl benzene	1.9562	1.9847	.1	1	20
1,1,1,2-tetrachloroethane	.34876	.33184	.05	-5	20
p/m xylene	.77252	.75389	.1	-2	20
o xylene	.74918	.7104	.3	-5	20
styrene	1.2705	1.184	.3	-7	20
bromoform	.40302	.34937	.1	-13	20
isopropylbenzene	4.1169	3.8276	.1	-7	20
bromobenzene	.89337	.79212	.05	-11	20
n-propylbenzene	4.7919	4.8081	.05	0	20
1,1,2,2,-tetrachloroethane	.84793	.95184	.3	12	20
2-chlorotoluene	2.9658	3.0857	.05	4	20
1,3,5-trimethylbenzene	3.4272	3.2977	.05	-4	20
1,2,3-trichloropropane	.70134	.78472	.05	12	20
4-chlorotoluene	2.9381	3.0090	.05	2	20
tert-butylbenzene	2.8477	2.5834	.05	-9	20
1,2,4-trimethylbenzene	3.4605	3.3246	.05	-4	20
sec-butylbenzene	4.4455	4.2526	.05	-4	20
p-isopropyltoluene	3.6626	3.3226	.05	-9	20
1,3-dichlorobenzene	1.8447	1.6911	.6	-8	20
1,4-dichlorobenzene	1.8763	1.7305	.5	-8	20
n-butylbenzene	3.478	3.5218	.05	1	20
1,2-dichlorobenzene	1.7042	1.5423	.4	-10	20
1,2-dibromo-3-chloropropane	100	80.313	.05	-20	20
hexachlorobutadiene	.55293	.47855	.05	-13	20
1,2,4-trichlorobenzene	1.1250	.99651	.2	-11	20
naphthalene	2.6895	2.3790	.05	-12	20
1,2,3-trichlorobenzene	1.0493	.93255	.05	-11	20
dibromofluoromethane	.23914	.23005	.05	-4	30
1,2-dichloroethane-d4	.25922	.25302	.05	-2	30
toluene-d8	1.3156	1.3335	.05	1	30
4-bromofluorobenzene	1.0436	1.0937	.05	5	30

FORM VII MCP-8260HLW-10



## ANALYTICAL REPORT

Lab Number:	L1519241
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	08/19/15

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



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
<del>L1519241-01</del>	<del>D-15 0'-6' COMP.</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/12/15 14:00</del>	<del>08/12/15</del>
<del>L1519241-02</del>	<del>D-15 S-2 2'-4'</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/12/15 14:00</del>	<del>08/12/15</del>
L1519241-03	D-15 6'-12' COMP.	SOIL	BOSTON, MA	08/12/15 14:00	08/12/15
L1519241-04	D-15 S-4 7'-8'	SOIL	BOSTON, MA	08/12/15 14:00	08/12/15
L1519241-05	D-15 12'-18' COMP.	SOIL	BOSTON, MA	08/12/15 14:00	08/12/15
L1519241-06	D-15 S-9 16'-18'	SOIL	BOSTON, MA	08/12/15 14:00	08/12/15
L1519241-07	D-15 18'-24' COMP.	SOIL	BOSTON, MA	08/12/15 14:00	08/12/15
L1519241-08	D-15 S-10 18'-20'	SOIL	BOSTON, MA	08/12/15 14:00	08/12/15
L1519241-09	D-15 30'-42' COMP.	SOIL	BOSTON, MA	08/12/15 14:00	08/12/15
L1519241-10	D-15 S-17 35'-37'	SOIL	BOSTON, MA	08/12/15 14:00	08/12/15
<del>L1519241-11</del>	<del>D-16 0'-6' COMP.</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/12/15 14:00</del>	<del>08/12/15</del>
<del>L1519241-12</del>	<del>D-16 S-2 2'-4'</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/12/15 14:00</del>	<del>08/12/15</del>

Project Name: FAN PIER PARCEL D

Lab Number: L1519241

Project Number: 4426.9.1D

Report Date: 08/19/15

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

### 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.

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**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

#### Volatile Organics

In reference to question H:

The initial calibration, associated with L1519241-02, -04, -06, -08, -10, and -12 did not meet the method required minimum response factor on the lowest calibration standard for acetone (0.09844), 4-methyl-2-pentanone (0.07160), and 1,4-dioxane (0.00172), as well as the average response factor for acetone, 4-methyl-2-pentanone, and 1,4-dioxane.

The continuing calibration standards, associated with L1519241-02, -04, -06, -08, -10, and -12, are outside the acceptance criteria for several compounds; however, they are within overall method allowances. Copies of the continuing calibration standards are included as an addendum to this report.


#### Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

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

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 08/19/15



# ORGANICS

# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-04  
 Client ID: D-15 S-4 7'-8'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/18/15 15:03  
 Analyst: MV  
 Percent Solids: 81%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	7.6	--	1
1,1-Dichloroethane	ND		ug/kg	1.1	--	1
Chloroform	ND		ug/kg	1.1	--	1
Carbon tetrachloride	ND		ug/kg	0.76	--	1
1,2-Dichloropropane	ND		ug/kg	2.7	--	1
Dibromochloromethane	ND		ug/kg	0.76	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	--	1
Tetrachloroethene	ND		ug/kg	0.76	--	1
Chlorobenzene	ND		ug/kg	0.76	--	1
Trichlorofluoromethane	ND		ug/kg	3.0	--	1
1,2-Dichloroethane	ND		ug/kg	0.76	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.76	--	1
Bromodichloromethane	ND		ug/kg	0.76	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.76	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.76	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.76	--	1
1,1-Dichloropropene	ND		ug/kg	3.0	--	1
Bromoform	ND		ug/kg	3.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.76	--	1
Benzene	ND		ug/kg	0.76	--	1
Toluene	ND		ug/kg	1.1	--	1
Ethylbenzene	ND		ug/kg	0.76	--	1
Chloromethane	ND		ug/kg	3.0	--	1
Bromomethane	ND		ug/kg	1.5	--	1
Vinyl chloride	ND		ug/kg	1.5	--	1
Chloroethane	ND		ug/kg	1.5	--	1
1,1-Dichloroethene	ND		ug/kg	0.76	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.1	--	1
Trichloroethene	ND		ug/kg	0.76	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.0	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-04  
**Client ID:** D-15 S-4 7'-8'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	3.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.0	--	1
Methyl tert butyl ether	ND		ug/kg	1.5	--	1
p/m-Xylene	ND		ug/kg	1.5	--	1
o-Xylene	ND		ug/kg	1.5	--	1
Xylenes, Total	ND		ug/kg	1.5	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.76	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.76	--	1
Dibromomethane	ND		ug/kg	3.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.0	--	1
Styrene	ND		ug/kg	1.5	--	1
Dichlorodifluoromethane	ND		ug/kg	7.6	--	1
Acetone	ND		ug/kg	27	--	1
Carbon disulfide	ND		ug/kg	3.0	--	1
Methyl ethyl ketone	ND		ug/kg	7.6	--	1
Methyl isobutyl ketone	ND		ug/kg	7.6	--	1
2-Hexanone	ND		ug/kg	7.6	--	1
Bromochloromethane	ND		ug/kg	3.0	--	1
Tetrahydrofuran	ND		ug/kg	3.0	--	1
2,2-Dichloropropane	ND		ug/kg	3.8	--	1
1,2-Dibromoethane	ND		ug/kg	3.0	--	1
1,3-Dichloropropane	ND		ug/kg	3.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.76	--	1
Bromobenzene	ND		ug/kg	3.8	--	1
n-Butylbenzene	ND		ug/kg	0.76	--	1
sec-Butylbenzene	ND		ug/kg	0.76	--	1
tert-Butylbenzene	ND		ug/kg	3.0	--	1
o-Chlorotoluene	ND		ug/kg	3.0	--	1
p-Chlorotoluene	ND		ug/kg	3.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--	1
Hexachlorobutadiene	ND		ug/kg	3.0	--	1
Isopropylbenzene	ND		ug/kg	0.76	--	1
p-Isopropyltoluene	ND		ug/kg	0.76	--	1
Naphthalene	ND		ug/kg	3.0	--	1
n-Propylbenzene	ND		ug/kg	0.76	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.0	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-04  
 Client ID: D-15 S-4 7'-8'  
 Sample Location: BOSTON, MA

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	3.8	--	1
Diisopropyl Ether	ND		ug/kg	3.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.0	--	1
1,4-Dioxane	ND		ug/kg	30	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	97		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-06  
 Client ID: D-15 S-9 16'-18'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/18/15 05:53  
 Analyst: MS  
 Percent Solids: 78%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	12	--	1
1,1-Dichloroethane	ND		ug/kg	1.8	--	1
Chloroform	ND		ug/kg	1.8	--	1
Carbon tetrachloride	ND		ug/kg	1.2	--	1
1,2-Dichloropropane	ND		ug/kg	4.2	--	1
Dibromochloromethane	ND		ug/kg	1.2	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.8	--	1
Tetrachloroethene	ND		ug/kg	1.2	--	1
Chlorobenzene	ND		ug/kg	1.2	--	1
Trichlorofluoromethane	ND		ug/kg	4.8	--	1
1,2-Dichloroethane	ND		ug/kg	1.2	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.2	--	1
Bromodichloromethane	ND		ug/kg	1.2	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.2	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.2	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.2	--	1
1,1-Dichloropropene	ND		ug/kg	4.8	--	1
Bromoform	ND		ug/kg	4.8	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.2	--	1
Benzene	ND		ug/kg	1.2	--	1
Toluene	ND		ug/kg	1.8	--	1
Ethylbenzene	ND		ug/kg	1.2	--	1
Chloromethane	ND		ug/kg	4.8	--	1
Bromomethane	ND		ug/kg	2.4	--	1
Vinyl chloride	ND		ug/kg	2.4	--	1
Chloroethane	ND		ug/kg	2.4	--	1
1,1-Dichloroethene	ND		ug/kg	1.2	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.8	--	1
Trichloroethene	ND		ug/kg	1.2	--	1
1,2-Dichlorobenzene	ND		ug/kg	4.8	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-06  
**Client ID:** D-15 S-9 16'-18'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	4.8	--	1
1,4-Dichlorobenzene	ND		ug/kg	4.8	--	1
Methyl tert butyl ether	ND		ug/kg	2.4	--	1
p/m-Xylene	ND		ug/kg	2.4	--	1
o-Xylene	ND		ug/kg	2.4	--	1
Xylenes, Total	ND		ug/kg	2.4	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.2	--	1
Dibromomethane	ND		ug/kg	4.8	--	1
1,2,3-Trichloropropane	ND		ug/kg	4.8	--	1
Styrene	ND		ug/kg	2.4	--	1
Dichlorodifluoromethane	ND		ug/kg	12	--	1
Acetone	ND		ug/kg	43	--	1
Carbon disulfide	ND		ug/kg	4.8	--	1
Methyl ethyl ketone	ND		ug/kg	12	--	1
Methyl isobutyl ketone	ND		ug/kg	12	--	1
2-Hexanone	ND		ug/kg	12	--	1
Bromochloromethane	ND		ug/kg	4.8	--	1
Tetrahydrofuran	ND		ug/kg	4.8	--	1
2,2-Dichloropropane	ND		ug/kg	6.0	--	1
1,2-Dibromoethane	ND		ug/kg	4.8	--	1
1,3-Dichloropropane	ND		ug/kg	4.8	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.2	--	1
Bromobenzene	ND		ug/kg	6.0	--	1
n-Butylbenzene	ND		ug/kg	1.2	--	1
sec-Butylbenzene	ND		ug/kg	1.2	--	1
tert-Butylbenzene	ND		ug/kg	4.8	--	1
o-Chlorotoluene	ND		ug/kg	4.8	--	1
p-Chlorotoluene	ND		ug/kg	4.8	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.8	--	1
Hexachlorobutadiene	ND		ug/kg	4.8	--	1
Isopropylbenzene	ND		ug/kg	1.2	--	1
p-Isopropyltoluene	ND		ug/kg	1.2	--	1
Naphthalene	ND		ug/kg	4.8	--	1
n-Propylbenzene	ND		ug/kg	1.2	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	4.8	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	4.8	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	4.8	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	4.8	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-06  
 Client ID: D-15 S-9 16'-18'  
 Sample Location: BOSTON, MA

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	6.0	--	1
Diisopropyl Ether	ND		ug/kg	4.8	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.8	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.8	--	1
1,4-Dioxane	ND		ug/kg	48	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	99		70-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-08  
 Client ID: D-15 S-10 18'-20'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/18/15 15:31  
 Analyst: MV  
 Percent Solids: 77%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	11	--	1
1,1-Dichloroethane	ND		ug/kg	1.7	--	1
Chloroform	ND		ug/kg	1.7	--	1
Carbon tetrachloride	ND		ug/kg	1.1	--	1
1,2-Dichloropropane	ND		ug/kg	4.0	--	1
Dibromochloromethane	ND		ug/kg	1.1	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.7	--	1
Tetrachloroethene	ND		ug/kg	1.1	--	1
Chlorobenzene	ND		ug/kg	1.1	--	1
Trichlorofluoromethane	ND		ug/kg	4.6	--	1
1,2-Dichloroethane	ND		ug/kg	1.1	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.1	--	1
Bromodichloromethane	ND		ug/kg	1.1	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.1	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.1	--	1
1,1-Dichloropropene	ND		ug/kg	4.6	--	1
Bromoform	ND		ug/kg	4.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.1	--	1
Benzene	ND		ug/kg	1.1	--	1
Toluene	ND		ug/kg	1.7	--	1
Ethylbenzene	ND		ug/kg	1.1	--	1
Chloromethane	ND		ug/kg	4.6	--	1
Bromomethane	ND		ug/kg	2.3	--	1
Vinyl chloride	ND		ug/kg	2.3	--	1
Chloroethane	ND		ug/kg	2.3	--	1
1,1-Dichloroethene	ND		ug/kg	1.1	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.7	--	1
Trichloroethene	ND		ug/kg	1.1	--	1
1,2-Dichlorobenzene	ND		ug/kg	4.6	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-08  
**Client ID:** D-15 S-10 18'-20'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	4.6	--	1
1,4-Dichlorobenzene	ND		ug/kg	4.6	--	1
Methyl tert butyl ether	ND		ug/kg	2.3	--	1
p/m-Xylene	ND		ug/kg	2.3	--	1
o-Xylene	ND		ug/kg	2.3	--	1
Xylenes, Total	ND		ug/kg	2.3	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	--	1
Dibromomethane	ND		ug/kg	4.6	--	1
1,2,3-Trichloropropane	ND		ug/kg	4.6	--	1
Styrene	ND		ug/kg	2.3	--	1
Dichlorodifluoromethane	ND		ug/kg	11	--	1
Acetone	ND		ug/kg	41	--	1
Carbon disulfide	ND		ug/kg	4.6	--	1
Methyl ethyl ketone	ND		ug/kg	11	--	1
Methyl isobutyl ketone	ND		ug/kg	11	--	1
2-Hexanone	ND		ug/kg	11	--	1
Bromochloromethane	ND		ug/kg	4.6	--	1
Tetrahydrofuran	ND		ug/kg	4.6	--	1
2,2-Dichloropropane	ND		ug/kg	5.7	--	1
1,2-Dibromoethane	ND		ug/kg	4.6	--	1
1,3-Dichloropropane	ND		ug/kg	4.6	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.1	--	1
Bromobenzene	ND		ug/kg	5.7	--	1
n-Butylbenzene	ND		ug/kg	1.1	--	1
sec-Butylbenzene	ND		ug/kg	1.1	--	1
tert-Butylbenzene	ND		ug/kg	4.6	--	1
o-Chlorotoluene	ND		ug/kg	4.6	--	1
p-Chlorotoluene	ND		ug/kg	4.6	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.6	--	1
Hexachlorobutadiene	ND		ug/kg	4.6	--	1
Isopropylbenzene	ND		ug/kg	1.1	--	1
p-Isopropyltoluene	ND		ug/kg	1.1	--	1
Naphthalene	ND		ug/kg	4.6	--	1
n-Propylbenzene	ND		ug/kg	1.1	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	4.6	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	4.6	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	4.6	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	4.6	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-08  
**Client ID:** D-15 S-10 18'-20'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	5.7	--	1
Diisopropyl Ether	ND		ug/kg	4.6	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.6	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.6	--	1
1,4-Dioxane	ND		ug/kg	46	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	99		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-10  
 Client ID: D-15 S-17 35'-37'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/18/15 06:21  
 Analyst: MS  
 Percent Solids: 75%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	13	--	1
1,1-Dichloroethane	ND		ug/kg	1.9	--	1
Chloroform	ND		ug/kg	1.9	--	1
Carbon tetrachloride	ND		ug/kg	1.3	--	1
1,2-Dichloropropane	ND		ug/kg	4.4	--	1
Dibromochloromethane	ND		ug/kg	1.3	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.9	--	1
Tetrachloroethene	ND		ug/kg	1.3	--	1
Chlorobenzene	ND		ug/kg	1.3	--	1
Trichlorofluoromethane	ND		ug/kg	5.0	--	1
1,2-Dichloroethane	ND		ug/kg	1.3	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.3	--	1
Bromodichloromethane	ND		ug/kg	1.3	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.3	--	1
1,1-Dichloropropene	ND		ug/kg	5.0	--	1
Bromoform	ND		ug/kg	5.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Benzene	ND		ug/kg	1.3	--	1
Toluene	ND		ug/kg	1.9	--	1
Ethylbenzene	ND		ug/kg	1.3	--	1
Chloromethane	ND		ug/kg	5.0	--	1
Bromomethane	ND		ug/kg	2.5	--	1
Vinyl chloride	ND		ug/kg	2.5	--	1
Chloroethane	ND		ug/kg	2.5	--	1
1,1-Dichloroethene	ND		ug/kg	1.3	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.9	--	1
Trichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.0	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-10  
**Client ID:** D-15 S-17 35'-37'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	5.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.0	--	1
Methyl tert butyl ether	ND		ug/kg	2.5	--	1
p/m-Xylene	ND		ug/kg	2.5	--	1
o-Xylene	ND		ug/kg	2.5	--	1
Xylenes, Total	ND		ug/kg	2.5	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.3	--	1
Dibromomethane	ND		ug/kg	5.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.0	--	1
Styrene	ND		ug/kg	2.5	--	1
Dichlorodifluoromethane	ND		ug/kg	13	--	1
Acetone	ND		ug/kg	46	--	1
Carbon disulfide	ND		ug/kg	5.0	--	1
Methyl ethyl ketone	ND		ug/kg	13	--	1
Methyl isobutyl ketone	ND		ug/kg	13	--	1
2-Hexanone	ND		ug/kg	13	--	1
Bromochloromethane	ND		ug/kg	5.0	--	1
Tetrahydrofuran	ND		ug/kg	5.0	--	1
2,2-Dichloropropane	ND		ug/kg	6.3	--	1
1,2-Dibromoethane	ND		ug/kg	5.0	--	1
1,3-Dichloropropane	ND		ug/kg	5.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Bromobenzene	ND		ug/kg	6.3	--	1
n-Butylbenzene	ND		ug/kg	1.3	--	1
sec-Butylbenzene	ND		ug/kg	1.3	--	1
tert-Butylbenzene	ND		ug/kg	5.0	--	1
o-Chlorotoluene	ND		ug/kg	5.0	--	1
p-Chlorotoluene	ND		ug/kg	5.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.0	--	1
Hexachlorobutadiene	ND		ug/kg	5.0	--	1
Isopropylbenzene	ND		ug/kg	1.3	--	1
p-Isopropyltoluene	ND		ug/kg	1.3	--	1
Naphthalene	ND		ug/kg	5.0	--	1
n-Propylbenzene	ND		ug/kg	1.3	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	5.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.0	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-10  
 Client ID: D-15 S-17 35'-37'  
 Sample Location: BOSTON, MA

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	6.3	--	1
Diisopropyl Ether	ND		ug/kg	5.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.0	--	1
1,4-Dioxane	ND		ug/kg	50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	96		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/17/15 22:58  
Analyst: MS

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,06,10 Batch: WG813098-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 08/17/15 22:58  
**Analyst:** MS

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,06,10 Batch: WG813098-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylene (Total)	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene (total)	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 08/17/15 22:58  
**Analyst:** MS

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,06,10 Batch: WG813098-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Ethyl ether	ND		ug/kg	5.0	--
Isopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	91		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/18/15 10:55  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 04,08,12 Batch: WG813464-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 08/18/15 10:55  
**Analyst:** MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 04,08,12 Batch: WG813464-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylene (Total)	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene (total)	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 08/18/15 10:55  
**Analyst:** MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 04,08,12 Batch: WG813464-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Ethyl ether	ND		ug/kg	5.0	--
Isopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	92		70-130

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,06,10 Batch: WG813098-1 WG813098-2								
Methylene chloride	100		98		70-130	2		20
1,1-Dichloroethane	112		107		70-130	5		20
Chloroform	104		102		70-130	2		20
Carbon tetrachloride	108		104		70-130	4		20
1,2-Dichloropropane	107		105		70-130	2		20
Dibromochloromethane	97		95		70-130	2		20
1,1,2-Trichloroethane	108		107		70-130	1		20
Tetrachloroethene	101		96		70-130	5		20
Chlorobenzene	101		98		70-130	3		20
Trichlorofluoromethane	114		110		70-130	4		20
1,2-Dichloroethane	108		104		70-130	4		20
1,1,1-Trichloroethane	106		103		70-130	3		20
Bromodichloromethane	101		99		70-130	2		20
trans-1,3-Dichloropropene	103		99		70-130	4		20
cis-1,3-Dichloropropene	100		98		70-130	2		20
1,1-Dichloropropene	114		110		70-130	4		20
Bromoform	83		82		70-130	1		20
1,1,2,2-Tetrachloroethane	113		112		70-130	1		20
Benzene	106		103		70-130	3		20
Toluene	104		100		70-130	4		20
Ethylbenzene	106		101		70-130	5		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,06,10 Batch: WG813098-1 WG813098-2								
Chloromethane	108		100		70-130	8		20
Bromomethane	86		80		70-130	7		20
Vinyl chloride	108		104		70-130	4		20
Chloroethane	151	Q	149	Q	70-130	1		20
1,1-Dichloroethene	108		105		70-130	3		20
trans-1,2-Dichloroethene	104		99		70-130	5		20
Trichloroethene	105		101		70-130	4		20
1,2-Dichlorobenzene	99		97		70-130	2		20
1,3-Dichlorobenzene	100		97		70-130	3		20
1,4-Dichlorobenzene	100		96		70-130	4		20
Methyl tert butyl ether	94		91		70-130	3		20
p/m-Xylene	101		98		70-130	3		20
o-Xylene	99		96		70-130	3		20
cis-1,2-Dichloroethene	100		97		70-130	3		20
Dibromomethane	102		100		70-130	2		20
1,2,3-Trichloropropane	114		112		70-130	2		20
Styrene	98		95		70-130	3		20
Dichlorodifluoromethane	114		110		70-130	4		20
Acetone	114		107		70-130	6		20
Carbon disulfide	99		96		70-130	3		20
Methyl ethyl ketone	111		109		70-130	2		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519241

Project Number: 4426.9.1D

Report Date: 08/19/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,06,10 Batch: WG813098-1 WG813098-2								
Methyl isobutyl ketone	91		91		70-130	0		20
2-Hexanone	98		94		70-130	4		20
Bromochloromethane	99		97		70-130	2		20
Tetrahydrofuran	124		106		70-130	16		20
2,2-Dichloropropane	102		96		70-130	6		20
1,2-Dibromoethane	101		100		70-130	1		20
1,3-Dichloropropane	110		107		70-130	3		20
1,1,1,2-Tetrachloroethane	98		95		70-130	3		20
Bromobenzene	97		94		70-130	3		20
n-Butylbenzene	116		113		70-130	3		20
sec-Butylbenzene	111		108		70-130	3		20
tert-Butylbenzene	105		101		70-130	4		20
o-Chlorotoluene	110		106		70-130	4		20
p-Chlorotoluene	110		107		70-130	3		20
1,2-Dibromo-3-chloropropane	89		87		70-130	2		20
Hexachlorobutadiene	95		92		70-130	3		20
Isopropylbenzene	106		104		70-130	2		20
p-Isopropyltoluene	105		101		70-130	4		20
Naphthalene	95		93		70-130	2		20
n-Propylbenzene	112		108		70-130	4		20
1,2,3-Trichlorobenzene	94		91		70-130	3		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,06,10 Batch: WG813098-1 WG813098-2								
1,2,4-Trichlorobenzene	95		92		70-130	3		20
1,3,5-Trimethylbenzene	106		104		70-130	2		20
1,2,4-Trimethylbenzene	105		101		70-130	4		20
Diethyl ether	103		103		70-130	0		20
Diisopropyl Ether	111		109		70-130	2		20
Ethyl-Tert-Butyl-Ether	97		95		70-130	2		20
Tertiary-Amyl Methyl Ether	88		86		70-130	2		20
1,4-Dioxane	101		98		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		107		70-130
Toluene-d8	104		105		70-130
4-Bromofluorobenzene	108		107		70-130
Dibromofluoromethane	97		99		70-130



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 04,08,12 Batch: WG813464-1 WG813464-2								
Methylene chloride	102		101		70-130	1		20
1,1-Dichloroethane	110		109		70-130	1		20
Chloroform	105		105		70-130	0		20
Carbon tetrachloride	100		100		70-130	0		20
1,2-Dichloropropane	106		106		70-130	0		20
Dibromochloromethane	97		97		70-130	0		20
1,1,2-Trichloroethane	109		108		70-130	1		20
Tetrachloroethene	94		93		70-130	1		20
Chlorobenzene	99		100		70-130	1		20
Trichlorofluoromethane	110		105		70-130	5		20
1,2-Dichloroethane	109		110		70-130	1		20
1,1,1-Trichloroethane	101		102		70-130	1		20
Bromodichloromethane	99		101		70-130	2		20
trans-1,3-Dichloropropene	102		102		70-130	0		20
cis-1,3-Dichloropropene	99		100		70-130	1		20
1,1-Dichloropropene	108		107		70-130	1		20
Bromoform	81		81		70-130	0		20
1,1,2,2-Tetrachloroethane	112		112		70-130	0		20
Benzene	104		104		70-130	0		20
Toluene	103		102		70-130	1		20
Ethylbenzene	102		103		70-130	1		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 04,08,12 Batch: WG813464-1 WG813464-2								
Chloromethane	114		110		70-130	4		20
Bromomethane	89		93		70-130	4		20
Vinyl chloride	111		107		70-130	4		20
Chloroethane	158	Q	153	Q	70-130	3		20
1,1-Dichloroethene	104		100		70-130	4		20
trans-1,2-Dichloroethene	100		98		70-130	2		20
Trichloroethene	102		103		70-130	1		20
1,2-Dichlorobenzene	97		98		70-130	1		20
1,3-Dichlorobenzene	99		98		70-130	1		20
1,4-Dichlorobenzene	97		97		70-130	0		20
Methyl tert butyl ether	95		94		70-130	1		20
p/m-Xylene	98		99		70-130	1		20
o-Xylene	96		97		70-130	1		20
cis-1,2-Dichloroethene	98		98		70-130	0		20
Dibromomethane	102		101		70-130	1		20
1,2,3-Trichloropropane	114		112		70-130	2		20
Styrene	94		95		70-130	1		20
Dichlorodifluoromethane	122		116		70-130	5		20
Acetone	114		116		70-130	2		20
Carbon disulfide	103		101		70-130	2		20
Methyl ethyl ketone	108		106		70-130	2		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 04,08,12 Batch: WG813464-1 WG813464-2								
Methyl isobutyl ketone	88		88		70-130	0		20
2-Hexanone	93		92		70-130	1		20
Bromochloromethane	100		100		70-130	0		20
Tetrahydrofuran	115		107		70-130	7		20
2,2-Dichloropropane	100		99		70-130	1		20
1,2-Dibromoethane	100		99		70-130	1		20
1,3-Dichloropropane	108		109		70-130	1		20
1,1,1,2-Tetrachloroethane	97		97		70-130	0		20
Bromobenzene	94		94		70-130	0		20
n-Butylbenzene	112		111		70-130	1		20
sec-Butylbenzene	105		105		70-130	0		20
tert-Butylbenzene	100		99		70-130	1		20
o-Chlorotoluene	108		107		70-130	1		20
p-Chlorotoluene	108		108		70-130	0		20
1,2-Dibromo-3-chloropropane	86		82		70-130	5		20
Hexachlorobutadiene	87		86		70-130	1		20
Isopropylbenzene	101		102		70-130	1		20
p-Isopropyltoluene	100		100		70-130	0		20
Naphthalene	91		92		70-130	1		20
n-Propylbenzene	108		107		70-130	1		20
1,2,3-Trichlorobenzene	90		89		70-130	1		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	RPD	
	%Recovery	Qual	%Recovery	Qual			Qual	Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 04,08,12 Batch: WG813464-1 WG813464-2								
1,2,4-Trichlorobenzene	91		90		70-130	1		20
1,3,5-Trimethylbenzene	103		102		70-130	1		20
1,2,4-Trimethylbenzene	102		102		70-130	0		20
Diethyl ether	111		106		70-130	5		20
Diisopropyl Ether	111		112		70-130	1		20
Ethyl-Tert-Butyl-Ether	97		97		70-130	0		20
Tertiary-Amyl Methyl Ether	87		88		70-130	1		20
1,4-Dioxane	94		92		70-130	2		20

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
1,2-Dichloroethane-d4	110		109		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	106		106		70-130
Dibromofluoromethane	98		97		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-03  
 Client ID: D-15 6'-12' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/17/15 13:51  
 Analyst: RC  
 Percent Solids: 81%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/15/15 00:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-03  
**Client ID:** D-15 6'-12' COMP.  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	440	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	970	--	1
Pentachlorophenol	ND		ug/kg	410	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	98		30-130
Phenol-d6	103		30-130
Nitrobenzene-d5	102		30-130
2-Fluorobiphenyl	95		30-130
2,4,6-Tribromophenol	72		30-130
4-Terphenyl-d14	98		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-05  
 Client ID: D-15 12'-18' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/15/15 19:13  
 Analyst: RC  
 Percent Solids: 78%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/15/15 00:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	230	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-05  
**Client ID:** D-15 12'-18' COMP.  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	130	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	420	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	79		30-130
Phenol-d6	81		30-130
Nitrobenzene-d5	82		30-130
2-Fluorobiphenyl	89		30-130
2,4,6-Tribromophenol	103		30-130
4-Terphenyl-d14	95		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-07  
 Client ID: D-15 18'-24' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/17/15 14:16  
 Analyst: RC  
 Percent Solids: 77%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/15/15 00:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	220	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	220	--	1
1,2-Dichlorobenzene	ND		ug/kg	220	--	1
1,3-Dichlorobenzene	ND		ug/kg	220	--	1
1,4-Dichlorobenzene	ND		ug/kg	220	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	220	--	1
2,4-Dinitrotoluene	ND		ug/kg	220	--	1
2,6-Dinitrotoluene	ND		ug/kg	220	--	1
Azobenzene	ND		ug/kg	220	--	1
Fluoranthene	ND		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	220	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	260	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	230	--	1
Hexachlorobutadiene	ND		ug/kg	220	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	220	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	220	--	1
Butyl benzyl phthalate	ND		ug/kg	220	--	1
Di-n-butylphthalate	ND		ug/kg	220	--	1
Di-n-octylphthalate	ND		ug/kg	220	--	1
Diethyl phthalate	ND		ug/kg	220	--	1
Dimethyl phthalate	ND		ug/kg	220	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-07  
**Client ID:** D-15 18'-24' COMP.  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	220	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	130	--	1
Aniline	ND		ug/kg	260	--	1
4-Chloroaniline	ND		ug/kg	220	--	1
Dibenzofuran	ND		ug/kg	220	--	1
2-Methylnaphthalene	ND		ug/kg	260	--	1
Acetophenone	ND		ug/kg	220	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	220	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	220	--	1
2-Nitrophenol	ND		ug/kg	470	--	1
4-Nitrophenol	ND		ug/kg	300	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	430	--	1
Phenol	ND		ug/kg	220	--	1
2-Methylphenol	ND		ug/kg	220	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	310	--	1
2,4,5-Trichlorophenol	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	95		30-130
Phenol-d6	99		30-130
Nitrobenzene-d5	98		30-130
2-Fluorobiphenyl	96		30-130
2,4,6-Tribromophenol	72		30-130
4-Terphenyl-d14	96		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-09  
 Client ID: D-15 30'-42' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/17/15 14:41  
 Analyst: RC  
 Percent Solids: 75%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/15/15 00:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	180	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	220	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	200	--	1
2-Chloronaphthalene	ND		ug/kg	220	--	1
1,2-Dichlorobenzene	ND		ug/kg	220	--	1
1,3-Dichlorobenzene	ND		ug/kg	220	--	1
1,4-Dichlorobenzene	ND		ug/kg	220	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	220	--	1
2,4-Dinitrotoluene	ND		ug/kg	220	--	1
2,6-Dinitrotoluene	ND		ug/kg	220	--	1
Azobenzene	ND		ug/kg	220	--	1
Fluoranthene	ND		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	220	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	270	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	240	--	1
Hexachlorobutadiene	ND		ug/kg	220	--	1
Hexachloroethane	ND		ug/kg	180	--	1
Isophorone	ND		ug/kg	200	--	1
Naphthalene	ND		ug/kg	220	--	1
Nitrobenzene	ND		ug/kg	200	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	220	--	1
Butyl benzyl phthalate	ND		ug/kg	220	--	1
Di-n-butylphthalate	ND		ug/kg	220	--	1
Di-n-octylphthalate	ND		ug/kg	220	--	1
Diethyl phthalate	ND		ug/kg	220	--	1
Dimethyl phthalate	ND		ug/kg	220	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	180	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-09  
**Client ID:** D-15 30'-42' COMP.  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	180	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	180	--	1
Fluorene	ND		ug/kg	220	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	180	--	1
Pyrene	ND		ug/kg	130	--	1
Aniline	ND		ug/kg	270	--	1
4-Chloroaniline	ND		ug/kg	220	--	1
Dibenzofuran	ND		ug/kg	220	--	1
2-Methylnaphthalene	ND		ug/kg	270	--	1
Acetophenone	ND		ug/kg	220	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	220	--	1
2,4-Dichlorophenol	ND		ug/kg	200	--	1
2,4-Dimethylphenol	ND		ug/kg	220	--	1
2-Nitrophenol	ND		ug/kg	480	--	1
4-Nitrophenol	ND		ug/kg	310	--	1
2,4-Dinitrophenol	ND		ug/kg	1100	--	1
Pentachlorophenol	ND		ug/kg	440	--	1
Phenol	ND		ug/kg	220	--	1
2-Methylphenol	ND		ug/kg	220	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	320	--	1
2,4,5-Trichlorophenol	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	104		30-130
Phenol-d6	104		30-130
Nitrobenzene-d5	102		30-130
2-Fluorobiphenyl	97		30-130
2,4,6-Tribromophenol	72		30-130
4-Terphenyl-d14	95		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/15/15 17:00  
**Analyst:** RC

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/15/15 00:48

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09,11 Batch: WG812416-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/15/15 17:00  
**Analyst:** RC

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/15/15 00:48

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09,11 Batch: WG812416-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	790	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/15/15 17:00  
**Analyst:** RC

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/15/15 00:48

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09,11 Batch: WG812416-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	85		30-130
Phenol-d6	87		30-130
Nitrobenzene-d5	88		30-130
2-Fluorobiphenyl	98		30-130
2,4,6-Tribromophenol	111		30-130
4-Terphenyl-d14	104		30-130



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG812416-2 WG812416-3								
Acenaphthene	86		93		40-140	8		30
1,2,4-Trichlorobenzene	90		92		40-140	2		30
Hexachlorobenzene	98		108		40-140	10		30
Bis(2-chloroethyl)ether	71		74		40-140	4		30
2-Chloronaphthalene	87		94		40-140	8		30
1,2-Dichlorobenzene	81		82		40-140	1		30
1,3-Dichlorobenzene	80		80		40-140	0		30
1,4-Dichlorobenzene	80		81		40-140	1		30
3,3'-Dichlorobenzidine	63		71		40-140	12		30
2,4-Dinitrotoluene	86		96		40-140	11		30
2,6-Dinitrotoluene	89		98		40-140	10		30
Azobenzene	77		87		40-140	12		30
Fluoranthene	91		99		40-140	8		30
4-Bromophenyl phenyl ether	94		107		40-140	13		30
Bis(2-chloroisopropyl)ether	62		64		40-140	3		30
Bis(2-chloroethoxy)methane	75		79		40-140	5		30
Hexachlorobutadiene	98		105		40-140	7		30
Hexachloroethane	81		81		40-140	0		30
Isophorone	76		81		40-140	6		30
Naphthalene	82		87		40-140	6		30
Nitrobenzene	78		82		40-140	5		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG812416-2 WG812416-3								
Bis(2-Ethylhexyl)phthalate	85		92		40-140	8		30
Butyl benzyl phthalate	88		95		40-140	8		30
Di-n-butylphthalate	90		98		40-140	9		30
Di-n-octylphthalate	85		94		40-140	10		30
Diethyl phthalate	88		97		40-140	10		30
Dimethyl phthalate	85		93		40-140	9		30
Benzo(a)anthracene	86		93		40-140	8		30
Benzo(a)pyrene	87		96		40-140	10		30
Benzo(b)fluoranthene	86		92		40-140	7		30
Benzo(k)fluoranthene	91		100		40-140	9		30
Chrysene	90		97		40-140	7		30
Acenaphthylene	88		96		40-140	9		30
Anthracene	92		99		40-140	7		30
Benzo(ghi)perylene	86		92		40-140	7		30
Fluorene	86		96		40-140	11		30
Phenanthrene	89		96		40-140	8		30
Dibenzo(a,h)anthracene	87		93		40-140	7		30
Indeno(1,2,3-cd)Pyrene	86		93		40-140	8		30
Pyrene	92		99		40-140	7		30
Aniline	52		61		40-140	16		30
4-Chloroaniline	66		78		40-140	17		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG812416-2 WG812416-3								
Dibenzofuran	86		95		40-140	10		30
2-Methylnaphthalene	83		92		40-140	10		30
Acetophenone	78		82		40-140	5		30
2,4,6-Trichlorophenol	92		101		30-130	9		30
2-Chlorophenol	84		88		30-130	5		30
2,4-Dichlorophenol	92		103		30-130	11		30
2,4-Dimethylphenol	85		92		30-130	8		30
2-Nitrophenol	82		89		30-130	8		30
4-Nitrophenol	84		95		30-130	12		30
2,4-Dinitrophenol	49		58		30-130	17		30
Pentachlorophenol	92		99		30-130	7		30
Phenol	73		76		30-130	4		30
2-Methylphenol	81		84		30-130	4		30
3-Methylphenol/4-Methylphenol	78		85		30-130	9		30
2,4,5-Trichlorophenol	98		104		30-130	6		30

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG812416-2 WG812416-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
2-Fluorophenol	81		82		30-130
Phenol-d6	79		84		30-130
Nitrobenzene-d5	79		80		30-130
2-Fluorobiphenyl	90		95		30-130
2,4,6-Tribromophenol	99		108		30-130
4-Terphenyl-d14	93		99		30-130

# PETROLEUM HYDROCARBONS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-03  
 Client ID: D-15 6'-12' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/18/15 00:07  
 Analyst: AR  
 Percent Solids: 81%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/16/15 19:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	ND		ug/kg	40600	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	78		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-05  
 Client ID: D-15 12'-18' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/18/15 03:45  
 Analyst: AR  
 Percent Solids: 78%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/16/15 19:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	ND		ug/kg	42400	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	69		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-07  
 Client ID: D-15 18'-24' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/17/15 22:55  
 Analyst: AR  
 Percent Solids: 77%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/16/15 19:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	ND		ug/kg	41900	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	71		40-140



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-09  
 Client ID: D-15 30'-42' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/17/15 23:31  
 Analyst: AR  
 Percent Solids: 75%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/16/15 19:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	ND		ug/kg	43600	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	71		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8015C(M)  
Analytical Date: 08/17/15 20:31  
Analyst: AR

Extraction Method: EPA 3546  
Extraction Date: 08/16/15 19:52

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01,03,05,07,09,11 Batch: WG812646-1					
TPH	ND		ug/kg	32900	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	72		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG812646-2								
TPH	84		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	69				40-140

# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-03  
 Client ID: D-15 6'-12' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/17/15 19:15  
 Analyst: JW  
 Percent Solids: 81%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/14/15 16:45  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/16/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/16/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	39.4	--	1	A
Aroclor 1221	ND		ug/kg	39.4	--	1	A
Aroclor 1232	ND		ug/kg	39.4	--	1	A
Aroclor 1242	ND		ug/kg	39.4	--	1	A
Aroclor 1248	ND		ug/kg	39.4	--	1	A
Aroclor 1254	ND		ug/kg	39.4	--	1	A
Aroclor 1260	ND		ug/kg	39.4	--	1	A
Aroclor 1262	ND		ug/kg	39.4	--	1	A
Aroclor 1268	ND		ug/kg	39.4	--	1	A
PCBs, Total	ND		ug/kg	39.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	43		30-150	A
Decachlorobiphenyl	27	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	40		30-150	B
Decachlorobiphenyl	46		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-05  
 Client ID: D-15 12'-18' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/17/15 19:28  
 Analyst: JW  
 Percent Solids: 78%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/14/15 16:45  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/16/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/16/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	42.1	--	1	A
Aroclor 1221	ND		ug/kg	42.1	--	1	A
Aroclor 1232	ND		ug/kg	42.1	--	1	A
Aroclor 1242	ND		ug/kg	42.1	--	1	A
Aroclor 1248	ND		ug/kg	42.1	--	1	A
Aroclor 1254	ND		ug/kg	42.1	--	1	A
Aroclor 1260	ND		ug/kg	42.1	--	1	A
Aroclor 1262	ND		ug/kg	42.1	--	1	A
Aroclor 1268	ND		ug/kg	42.1	--	1	A
PCBs, Total	ND		ug/kg	42.1	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	44		30-150	A
Decachlorobiphenyl	25	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	42		30-150	B
Decachlorobiphenyl	46		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-07  
 Client ID: D-15 18'-24' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/17/15 19:40  
 Analyst: JW  
 Percent Solids: 77%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/14/15 16:45  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/16/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/16/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	41.8	--	1	A
Aroclor 1221	ND		ug/kg	41.8	--	1	A
Aroclor 1232	ND		ug/kg	41.8	--	1	A
Aroclor 1242	ND		ug/kg	41.8	--	1	A
Aroclor 1248	ND		ug/kg	41.8	--	1	A
Aroclor 1254	ND		ug/kg	41.8	--	1	A
Aroclor 1260	ND		ug/kg	41.8	--	1	A
Aroclor 1262	ND		ug/kg	41.8	--	1	A
Aroclor 1268	ND		ug/kg	41.8	--	1	A
PCBs, Total	ND		ug/kg	41.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	52		30-150	A
Decachlorobiphenyl	31		30-150	A
2,4,5,6-Tetrachloro-m-xylene	49		30-150	B
Decachlorobiphenyl	52		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-09  
 Client ID: D-15 30'-42' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/19/15 00:18  
 Analyst: JT  
 Percent Solids: 75%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/18/15 14:12  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/18/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/18/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	43.4	--	1	A
Aroclor 1221	ND		ug/kg	43.4	--	1	A
Aroclor 1232	ND		ug/kg	43.4	--	1	A
Aroclor 1242	ND		ug/kg	43.4	--	1	A
Aroclor 1248	ND		ug/kg	43.4	--	1	A
Aroclor 1254	ND		ug/kg	43.4	--	1	A
Aroclor 1260	ND		ug/kg	43.4	--	1	A
Aroclor 1262	ND		ug/kg	43.4	--	1	A
Aroclor 1268	ND		ug/kg	43.4	--	1	A
PCBs, Total	ND		ug/kg	43.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	65		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	64		30-150	B



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**Method Blank Analysis  
 Batch Quality Control**

**Analytical Method:** 97,8082A  
**Analytical Date:** 08/17/15 17:36  
**Analyst:** JW

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/14/15 16:45  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 08/16/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 08/16/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01,03,05,07,11 Batch: WG812327-1						
Aroclor 1016	ND		ug/kg	31.7	--	A
Aroclor 1221	ND		ug/kg	31.7	--	A
Aroclor 1232	ND		ug/kg	31.7	--	A
Aroclor 1242	ND		ug/kg	31.7	--	A
Aroclor 1248	ND		ug/kg	31.7	--	A
Aroclor 1254	ND		ug/kg	31.7	--	A
Aroclor 1260	ND		ug/kg	31.7	--	A
Aroclor 1262	ND		ug/kg	31.7	--	A
Aroclor 1268	ND		ug/kg	31.7	--	A
PCBs, Total	ND		ug/kg	31.7	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	49		30-150	A
Decachlorobiphenyl	50		30-150	A
2,4,5,6-Tetrachloro-m-xylene	48		30-150	B
Decachlorobiphenyl	75		30-150	B



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8082A  
 Analytical Date: 08/19/15 00:50  
 Analyst: JT

Extraction Method: EPA 3546  
 Extraction Date: 08/18/15 14:12  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/18/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/18/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 09 Batch: WG813154-1						
Aroclor 1016	ND		ug/kg	33.0	--	A
Aroclor 1221	ND		ug/kg	33.0	--	A
Aroclor 1232	ND		ug/kg	33.0	--	A
Aroclor 1242	ND		ug/kg	33.0	--	A
Aroclor 1248	ND		ug/kg	33.0	--	A
Aroclor 1254	ND		ug/kg	33.0	--	A
Aroclor 1260	ND		ug/kg	33.0	--	A
Aroclor 1262	ND		ug/kg	33.0	--	A
Aroclor 1268	ND		ug/kg	33.0	--	A
PCBs, Total	ND		ug/kg	33.0	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	54		30-150	B



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>	<b>Column</b>
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01,03,05,07,11 Batch: WG812327-2 WG812327-3									
Aroclor 1016	50		58		40-140	15		30	A
Aroclor 1260	45		53		40-140	16		30	A

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>	<b>Column</b>
2,4,5,6-Tetrachloro-m-xylene	50		59		30-150	A
Decachlorobiphenyl	51		62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	47		55		30-150	B
Decachlorobiphenyl	76		90		30-150	B

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 09 Batch: WG813154-2 WG813154-3									
Aroclor 1016	70		82		40-140	16		30	A
Aroclor 1260	60		67		40-140	11		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		77		30-150	A
Decachlorobiphenyl	61		69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		77		30-150	B
Decachlorobiphenyl	58		67		30-150	B

## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-03  
 Client ID: D-15 6'-12' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 81%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.2		mg/kg	0.48	--	1	08/13/15 06:07	08/15/15 02:02	EPA 3050B	97,6010C	JH
Barium, Total	36		mg/kg	0.48	--	1	08/13/15 06:07	08/15/15 02:02	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.48	--	1	08/13/15 06:07	08/15/15 02:02	EPA 3050B	97,6010C	JH
Chromium, Total	23		mg/kg	0.48	--	1	08/13/15 06:07	08/15/15 02:02	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.4	--	1	08/13/15 06:07	08/15/15 02:02	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.083	--	1	08/13/15 08:10	08/13/15 10:55	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.4	--	1	08/13/15 06:07	08/15/15 02:02	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.48	--	1	08/13/15 06:07	08/15/15 02:02	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-05  
 Client ID: D-15 12'-18' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 78%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	3.6		mg/kg	0.51	--	1	08/13/15 06:07	08/15/15 02:06	EPA 3050B	97,6010C	JH
Barium, Total	17		mg/kg	0.51	--	1	08/13/15 06:07	08/15/15 02:06	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.51	--	1	08/13/15 06:07	08/15/15 02:06	EPA 3050B	97,6010C	JH
Chromium, Total	14		mg/kg	0.51	--	1	08/13/15 06:07	08/15/15 02:06	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.5	--	1	08/13/15 06:07	08/15/15 02:06	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.084	--	1	08/13/15 08:10	08/13/15 10:57	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.5	--	1	08/13/15 06:07	08/15/15 02:06	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.51	--	1	08/13/15 06:07	08/15/15 02:06	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-07  
 Client ID: D-15 18'-24' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 77%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	3.5		mg/kg	0.52	--	1	08/13/15 06:07	08/15/15 02:09	EPA 3050B	97,6010C	JH
Barium, Total	19		mg/kg	0.52	--	1	08/13/15 06:07	08/15/15 02:09	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.52	--	1	08/13/15 06:07	08/15/15 02:09	EPA 3050B	97,6010C	JH
Chromium, Total	14		mg/kg	0.52	--	1	08/13/15 06:07	08/15/15 02:09	EPA 3050B	97,6010C	JH
Lead, Total	5.3		mg/kg	2.6	--	1	08/13/15 06:07	08/15/15 02:09	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.090	--	1	08/13/15 08:10	08/13/15 11:02	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.6	--	1	08/13/15 06:07	08/15/15 02:09	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.52	--	1	08/13/15 06:07	08/15/15 02:09	EPA 3050B	97,6010C	JH





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

Lab ID: L1519241-09  
 Client ID: D-15 30'-42' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 75%

Date Collected: 08/12/15 14:00  
 Date Received: 08/12/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.3		mg/kg	0.52	--	1	08/13/15 06:07	08/15/15 02:13	EPA 3050B	97,6010C	JH
Barium, Total	44		mg/kg	0.52	--	1	08/13/15 06:07	08/15/15 02:13	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.52	--	1	08/13/15 06:07	08/15/15 02:13	EPA 3050B	97,6010C	JH
Chromium, Total	25		mg/kg	0.52	--	1	08/13/15 06:07	08/15/15 02:13	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.6	--	1	08/13/15 06:07	08/15/15 02:13	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.086	--	1	08/13/15 08:10	08/13/15 11:04	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.6	--	1	08/13/15 06:07	08/15/15 02:13	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.52	--	1	08/13/15 06:07	08/15/15 02:13	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01,03,05,07,09,11 Batch: WG811649-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	08/13/15 05:27	08/15/15 00:48	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	08/13/15 05:27	08/15/15 00:48	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	08/13/15 05:27	08/15/15 00:48	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	08/13/15 05:27	08/15/15 00:48	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	08/13/15 05:27	08/15/15 00:48	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	08/13/15 05:27	08/15/15 00:48	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	08/13/15 05:27	08/15/15 00:48	97,6010C	JH

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01,03,05,07,09,11 Batch: WG811654-1									
Mercury, Total	ND	mg/kg	0.083	--	1	08/13/15 08:10	08/13/15 10:18	97,7471B	DB

### Prep Information

Digestion Method: EPA 7471B

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG811649-2 WG811649-3 SRM Lot Number: D088-540								
Arsenic, Total	87		88		79-121	1		30
Barium, Total	83		88		83-117	6		30
Cadmium, Total	94		98		83-117	4		30
Chromium, Total	85		87		80-120	2		30
Lead, Total	93		108		81-117	15		30
Selenium, Total	97		97		78-122	0		30
Silver, Total	96		96		75-124	0		30
MCP Total Metals - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG811654-2 WG811654-3 SRM Lot Number: D088-540								
Mercury, Total	98		100		72-128	2		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

### SAMPLE RESULTS

**Lab ID:** L1519241-03  
**Client ID:** D-15 6'-12' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/13/15 23:45	1,1030	SB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

### SAMPLE RESULTS

**Lab ID:** L1519241-05  
**Client ID:** D-15 12'-18' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/13/15 23:45	1,1030	SB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

### SAMPLE RESULTS

**Lab ID:** L1519241-07  
**Client ID:** D-15 18'-24' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/13/15 23:45	1,1030	SB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

### SAMPLE RESULTS

**Lab ID:** L1519241-09  
**Client ID:** D-15 30'-42' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Dry Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/13/15 23:45	1,1030	SB





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-03  
**Client ID:** D-15 6'-12' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	160		umhos/cm	10	--	1	-	08/13/15 16:38	1,9050A	AS
Solids, Total	80.9		%	0.100	NA	1	-	08/13/15 02:23	30,2540G	RT
pH (H)	10.0		SU	-	NA	1	-	08/12/15 23:09	1,9045D	MR
Cyanide, Reactive	ND		mg/kg	10	--	1	08/13/15 20:10	08/13/15 23:00	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/13/15 20:10	08/13/15 22:50	1,7.3	TL



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-04  
**Client ID:** D-15 S-4 7'-8'  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**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	80.9		%	0.100	NA	1	-	08/13/15 02:23	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-05  
**Client ID:** D-15 12'-18' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	140		umhos/cm	10	--	1	-	08/13/15 16:38	1,9050A	AS
Solids, Total	77.6		%	0.100	NA	1	-	08/13/15 02:23	30,2540G	RT
pH (H)	9.2		SU	-	NA	1	-	08/12/15 23:09	1,9045D	MR
Cyanide, Reactive	ND		mg/kg	10	--	1	08/13/15 20:10	08/13/15 23:00	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/13/15 20:10	08/13/15 22:50	1,7.3	TL



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-06  
**Client ID:** D-15 S-9 16'-18'  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**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	77.6		%	0.100	NA	1	-	08/13/15 02:23	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-07  
**Client ID:** D-15 18'-24' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	220		umhos/cm	10	--	1	-	08/13/15 16:38	1,9050A	AS
Solids, Total	76.8		%	0.100	NA	1	-	08/13/15 02:23	30,2540G	RT
pH (H)	8.8		SU	-	NA	1	-	08/12/15 23:09	1,9045D	MR
Cyanide, Reactive	ND		mg/kg	10	--	1	08/13/15 20:10	08/13/15 23:00	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/13/15 20:10	08/13/15 22:50	1,7.3	TL



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1519241

Report Date: 08/19/15

## SAMPLE RESULTS

Lab ID: L1519241-08

Client ID: D-15 S-10 18'-20'

Sample Location: BOSTON, MA

Matrix: Soil

Date Collected: 08/12/15 14:00

Date Received: 08/12/15

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	76.8		%	0.100	NA	1	-	08/13/15 02:23	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-09  
**Client ID:** D-15 30'-42' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	1000		umhos/cm	10	--	1	-	08/13/15 16:38	1,9050A	AS
Solids, Total	74.6		%	0.100	NA	1	-	08/13/15 02:23	30,2540G	RT
pH (H)	8.1		SU	-	NA	1	-	08/12/15 23:09	1,9045D	MR
Cyanide, Reactive	ND		mg/kg	10	--	1	08/13/15 20:10	08/13/15 23:00	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/13/15 20:10	08/13/15 22:50	1,7.3	TL



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**SAMPLE RESULTS**

**Lab ID:** L1519241-10  
**Client ID:** D-15 S-17 35'-37'  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/12/15 14:00  
**Date Received:** 08/12/15  
**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	74.6		%	0.100	NA	1	-	08/13/15 02:23	30,2540G	RT





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,03,05,07,09,11 Batch: WG811958-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	08/13/15 20:10	08/13/15 22:57	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01,03,05,07,09,11 Batch: WG811960-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	08/13/15 20:10	08/13/15 22:47	1,7.3	TL

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG811602-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG811924-1								
Specific Conductance	99		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG811958-2								
Cyanide, Reactive	52		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09,11 Batch: WG811960-2								
Sulfide, Reactive	81		-		60-125	-		40

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG811639-1 QC Sample: L1519241-01 Client ID: D-15 0'-6' COMP.						
Solids, Total	89.6	89.1	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09,11 QC Batch ID: WG811924-2 QC Sample: L1519241-01 Client ID: D-15 0'-6' COMP.						
Specific Conductance	190	160	umhos/cm	17		20
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09,11 QC Batch ID: WG811958-3 QC Sample: L1519241-11 Client ID: D-16 0'-6' COMP.						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09,11 QC Batch ID: WG811960-3 QC Sample: L1519241-11 Client ID: D-16 0'-6' COMP.						
Sulfide, Reactive	ND	ND	mg/kg	NC		40

Project Name: FAN PIER PARCEL D

Lab Number: L1519241

Project Number: 4426.9.1D

Report Date: 08/19/15

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 08/12/2015 20:38

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1519241-01A	Glass 500ml/16oz unpreserved	A	N/A	3.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519241-02A	Vial MeOH preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-02B	Vial water preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-02C	Vial water preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-03A	Glass 500ml/16oz unpreserved	A	N/A	3.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519241-04A	Vial MeOH preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-04B	Vial water preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-04C	Vial water preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1519241-05A	Glass 500ml/16oz unpreserved	A	N/A	3.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519241-06A	Vial MeOH preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-06B	Vial water preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-06C	Vial water preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-07A	Glass 500ml/16oz unpreserved	A	N/A	3.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519241-08A	Vial MeOH preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-08B	Vial water preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-08C	Vial water preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-09A	Glass 500ml/16oz unpreserved	A	N/A	3.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519241-10A	Vial MeOH preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-10B	Vial water preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-10C	Vial water preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1519241

Report Date: 08/19/15

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1519241-11A	Glass 500ml/16oz unpreserved	A	N/A	3.0	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519241-12A	Vial MeOH preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-12B	Vial water preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)
L1519241-12C	Vial water preserved	A	N/A	3.0	Y	Absent	MCP-8260HLW-10(14)

**Container Comments**

L1519241-01A

L1519241-03A

L1519241-05A

L1519241-07A

L1519241-09A

L1519241-11A

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

## 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

#### **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.



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519241  
**Report Date:** 08/19/15

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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, NO<sub>2</sub>, NO<sub>3</sub>.

**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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

# CHAIN OF CUSTODY

PAGE 1 OF 2



Westborough, MA  
TEL: 508-898-9220  
FAX: 508-898-9193

Mansfield, MA  
TEL: 508-822-9300  
FAX: 508-822-3288

## Project Information

Project Name: Fan Pier Parcel D

Project Location: Boston, MA

Project #: 4426.9.1D

Project Manager: Ben Downing/Peter DeChaves

ALPHA Quote #: Fan Pier Pricing

## Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: 6178681420

Fax: 6178681423

Email: bdowning@mcphailgeo.com

These samples have been Previously analyzed by Alpha

## Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT

\*Denotes obtain total solid sample from composite sample.

\*\*Minus VOCs

Date Rec'd in Lab: 8-12-15

ALPHA Job #: L1519341

## Report Information Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

## Billing Information

Same as Client info PO #:

## Regulatory Requirements/Report Limits

State/Fed Program: MA  
Criteria: RCS-1

## MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

## ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	VOCs (8260)*	Soil Management Package IV**	ANALYSIS																SAMPLE HANDLING Filtration <input type="checkbox"/> Done <input checked="" type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)	TOTAL # BOTTLES			
		Date	Time					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
14241-01	D-15 0'-6' Comp.	8/12/15	2:00	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 16oz Amber	1
02	D-15 S-2 2'-4'	8/12/15	2:00	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low 1 High	3
03	D-15 6'-12' Comp.	8/12/15	2:00	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 16oz Amber	1
04	D-15 S-4 7'-8'	8/12/15	2:00	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low 1 High	3
05	D-15 12'-18' Comp.	8/12/15	2:00	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 16oz Amber	1
06	D-15 S-9 16'-18'	8/12/15	2:00	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low 1 High	3
07	D-15 18'-24' Comp.	8/12/15	2:00	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 16oz Amber	1
08	D-15 S-10 18'-20'	8/12/15	2:00	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low 1 High	3
09	D-15 30'-42' Comp.	8/12/15	2:00	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 16oz Amber	1
10	D-15 S-17 35'-37'	8/12/15	2:00	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low 1 High	3

PLEASE ANSWER QUESTIONS ABOVE!

Container Type

V A - - - - -

Preservative

F A - - - - -

IS YOUR PROJECT MA MCP or CT RCP?

FORM NO 01-010 (rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	8/12/15 2:00	<i>[Signature]</i> AAL	8/12/15 1445
<i>[Signature]</i>	8/12/15 1819	<i>[Signature]</i>	8/12/15 1819

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



7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1519241

Instrument ID: Voall10.i      Calibration Date: 18-AUG-2015      Time: 08:38

Lab File ID: 0818A01      Init. Calib. Date(s): 12-AUG-2      12-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 13:32      16:49

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.22596	.27497	.1	22	20	F
chloromethane	.25549	.29275	.1	15	20	
vinyl chloride	.32994	.36564	.1	11	20	
bromomethane	100	89.284	.1	-11	20	
chloroethane	100	158	.1	58	20	F
trichlorofluoromethane	.37899	.41541	.1	10	20	
ethyl ether	.14897	.1653	.05	11	20	
1,1,-dichloroethene	.22393	.2329	.1	4	20	
carbon disulfide	.73895	.76081	.1	3	20	
methylene chloride	.27994	.28553	.1	2	20	
acetone	.0704	.08015	.1	14	20	F
trans-1,2-dichloroethene	.26098	.26101	.1	0	20	
methyl tert butyl ether	.76577	.72686	.1	-5	20	
Diisopropyl Ether	.83503	.92559	.05	11	20	
1,1-dichloroethane	.47594	.52591	.2	10	20	
Ethyl-Tert-Butyl-Ether	.828	.80119	.05	-3	20	
cis-1,2-dichloroethene	.28419	.27862	.1	-2	20	
2,2-dichloropropane	.37174	.37045	.05	0	20	
bromochloromethane	.11572	.1159	.05	0	20	
chloroform	.46186	.48335	.2	5	20	
carbontetrachloride	.32441	.32565	.1	0	20	
tetrahydrofuran	.08034	.09236	.05	15	20	
1,1,1-trichloroethane	.393	.39747	.1	1	20	
2-butanone	.11061	.11958	.1	8	20	
1,1-dichloropropene	.34462	.37319	.05	8	20	
benzene	1.0475	1.0914	.5	4	20	
Tertiary-Amyl Methyl Ether	.75742	.65959	.05	-13	20	
1,2-dichloroethane	.35229	.38361	.1	9	20	
trichloroethene	.26232	.26787	.2	2	20	
dibromomethane	.1408	.14343	.05	2	20	
1,2-dichloropropane	.25448	.26896	.1	6	20	
bromodichloromethane	.3399	.33709	.2	-1	20	
1,4-dioxane	.00296	.00278	.05	-6	20	F
cis-1,3-dichloropropene	.41271	.40843	.2	-1	20	
toluene	.96071	.98957	.4	3	20	
4-methyl-2-pentanone	.08998	.07915	.1	-12	20	F
tetrachloroethene	.34468	.3252	.2	-6	20	
trans-1,3-dichloropropene	.51535	.52791	.1	2	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1519241

Instrument ID: Voal10.i      Calibration Date: 18-AUG-2015      Time: 08:38

Lab File ID: 0818A01      Init. Calib. Date(s): 12-AUG-2      12-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 13:32      16:49

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.25723	.27956	.1	9	20
chlorodibromomethane	.33402	.32317	.1	-3	20
1,3-dichloropropane	.54606	.58908	.05	8	20
1,2-dibromoethane	.29183	.29075	.1	0	20
2-hexanone	.2266	.20984	.1	-7	20
chlorobenzene	1.0313	1.0196	.5	-1	20
ethyl benzene	1.7760	1.8151	.1	2	20
1,1,1,2-tetrachloroethane	.34262	.33121	.05	-3	20
p/m xylene	.71267	.70136	.1	-2	20
o xylene	.68551	.65952	.3	-4	20
styrene	1.1763	1.1098	.3	-6	20
bromoform	100	80.590	.1	-19	20
isopropylbenzene	3.5063	3.5549	.1	1	20
bromobenzene	.79683	.7494	.05	-6	20
n-propylbenzene	4.1574	4.4777	.05	8	20
1,1,2,2,-tetrachloroethane	.80166	.90122	.3	12	20
2-chlorotoluene	2.5697	2.7694	.05	8	20
1,3,5-trimethylbenzene	3.0113	3.1097	.05	3	20
1,2,3-trichloropropane	.68038	.77891	.05	14	20
4-chlorotoluene	2.5402	2.7350	.05	8	20
tert-butylbenzene	2.5446	2.5476	.05	0	20
1,2,4-trimethylbenzene	2.9967	3.0519	.05	2	20
sec-butylbenzene	3.7765	3.9737	.05	5	20
p-isopropyltoluene	3.3116	3.3005	.05	0	20
1,3-dichlorobenzene	1.5860	1.5751	.6	-1	20
1,4-dichlorobenzene	1.6084	1.5675	.5	-3	20
n-butylbenzene	2.9757	3.3195	.05	12	20
1,2-dichlorobenzene	1.4693	1.4264	.4	-3	20
1,2-dibromo-3-chloropropane	.11334	.09755	.05	-14	20
hexachlorobutadiene	.45751	.3982	.05	-13	20
1,2,4-trichlorobenzene	.98141	.89068	.2	-9	20
naphthalene	2.6149	2.3854	.05	-9	20
1,2,3-trichlorobenzene	.92497	.8349	.05	-10	20
dibromofluoromethane	.23562	.23208	.05	-2	30
1,2-dichloroethane-d4	.26988	.29783	.05	10	30
toluene-d8	1.3455	1.4152	.05	5	30
4-bromofluorobenzene	.96878	1.0241	.05	6	30

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1519241

Instrument ID: Voall10.i      Calibration Date: 17-AUG-2015      Time: 21:32

Lab File ID: 0817N02      Init. Calib. Date(s): 12-AUG-2      12-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 13:32      16:49

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
=====	=====	=====	=====	=====	=====	
dichlorodifluoromethane	.22596	.25741	.1	14	20	
chloromethane	.25549	.2765	.1	8	20	
vinyl chloride	.32994	.35806	.1	9	20	
bromomethane	100	85.885	.1	-14	20	
chloroethane	100	151	.1	51	20	F
trichlorofluoromethane	.37899	.43106	.1	14	20	
ethyl ether	.14897	.15383	.05	3	20	
1,1,-dichloroethene	.22393	.24144	.1	8	20	
carbon disulfide	.73895	.73333	.1	-1	20	
methylene chloride	.27994	.28107	.1	0	20	
acetone	.0704	.08007	.1	14	20	F
trans-1,2-dichloroethene	.26098	.27048	.1	4	20	
methyl tert butyl ether	.76577	.71588	.1	-7	20	
Diisopropyl Ether	.83503	.93053	.05	11	20	
1,1-dichloroethane	.47594	.53103	.2	12	20	
Ethyl-Tert-Butyl-Ether	.828	.80477	.05	-3	20	
cis-1,2-dichloroethene	.28419	.28481	.1	0	20	
2,2-dichloropropane	.37174	.37762	.05	2	20	
bromochloromethane	.11572	.11414	.05	-1	20	
chloroform	.46186	.48126	.2	4	20	
carbontetrachloride	.32441	.35032	.1	8	20	
tetrahydrofuran	.08034	.09951	.05	24	20	F
1,1,1-trichloroethane	.393	.41794	.1	6	20	
2-butanone	.11061	.12308	.1	11	20	
1,1-dichloropropene	.34462	.39163	.05	14	20	
benzene	1.0475	1.1154	.5	6	20	
Tertiary-Amyl Methyl Ether	.75742	.66882	.05	-12	20	
1,2-dichloroethane	.35229	.38125	.1	8	20	
trichloroethene	.26232	.27466	.2	5	20	
dibromomethane	.1408	.14319	.05	2	20	
1,2-dichloropropane	.25448	.27302	.1	7	20	
bromodichloromethane	.3399	.34336	.2	1	20	
1,4-dioxane	.00296	.00299	.05	1	20	F
cis-1,3-dichloropropene	.41271	.41264	.2	0	20	
toluene	.96071	1.0002	.4	4	20	
4-methyl-2-pentanone	.08998	.08173	.1	-9	20	F
tetrachloroethene	.34468	.34713	.2	1	20	
trans-1,3-dichloropropene	.51535	.52979	.1	3	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1519241

Instrument ID: Voal10.i      Calibration Date: 17-AUG-2015      Time: 21:32

Lab File ID: 0817N02      Init. Calib. Date(s): 12-AUG-2      12-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 13:32      16:49

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.25723	.27695	.1	8	20
chlorodibromomethane	.33402	.32461	.1	-3	20
1,3-dichloropropane	.54606	.59937	.05	10	20
1,2-dibromoethane	.29183	.29431	.1	1	20
2-hexanone	.2266	.22309	.1	-2	20
chlorobenzene	1.0313	1.0403	.5	1	20
ethyl benzene	1.7760	1.8866	.1	6	20
1,1,1,2-tetrachloroethane	.34262	.33441	.05	-2	20
p/m xylene	.71267	.72135	.1	1	20
o xylene	.68551	.68092	.3	-1	20
styrene	1.1763	1.1559	.3	-2	20
bromoform	100	83.025	.1	-17	20
isopropylbenzene	3.5063	3.7236	.1	6	20
bromobenzene	.79683	.77547	.05	-3	20
n-propylbenzene	4.1574	4.6618	.05	12	20
1,1,2,2,-tetrachloroethane	.80166	.90542	.3	13	20
2-chlorotoluene	2.5697	2.8388	.05	10	20
1,3,5-trimethylbenzene	3.0113	3.2084	.05	7	20
1,2,3-trichloropropane	.68038	.77287	.05	14	20
4-chlorotoluene	2.5402	2.7982	.05	10	20
tert-butylbenzene	2.5446	2.6697	.05	5	20
1,2,4-trimethylbenzene	2.9967	3.1385	.05	5	20
sec-butylbenzene	3.7765	4.1898	.05	11	20
p-isopropyltoluene	3.3116	3.4663	.05	5	20
1,3-dichlorobenzene	1.5860	1.5850	.6	0	20
1,4-dichlorobenzene	1.6084	1.6005	.5	0	20
n-butylbenzene	2.9757	3.4679	.05	17	20
1,2-dichlorobenzene	1.4693	1.4496	.4	-1	20
1,2-dibromo-3-chloropropane	.11334	.10136	.05	-11	20
hexachlorobutadiene	.45751	.43363	.05	-5	20
1,2,4-trichlorobenzene	.98141	.93603	.2	-5	20
naphthalene	2.6149	2.4952	.05	-5	20
1,2,3-trichlorobenzene	.92497	.86833	.05	-6	20
dibromofluoromethane	.23562	.22966	.05	-3	30
1,2-dichloroethane-d4	.26988	.28955	.05	7	30
toluene-d8	1.3455	1.4020	.05	4	30
4-bromofluorobenzene	.96878	1.0415	.05	8	30

FORM VII MCP-8260HLW-10





## ANALYTICAL REPORT

Lab Number:	L1519590
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	08/23/15

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

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



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1519590-01	D14 S12 22-24'	SOIL	BOSTON, MA	08/14/15 07:30	08/14/15
L1519590-02	D14 18-24' COMP	SOIL	BOSTON, MA	08/14/15 07:30	08/14/15
L1519590-03	D14 S17 35-37'	SOIL	BOSTON, MA	08/14/15 10:15	08/14/15
L1519590-04	D14 27-42' CLAY	SOIL	BOSTON, MA	08/14/15 10:15	08/14/15
L1519590-05	D8 S1 0-2'	SOIL	BOSTON, MA	08/14/15 12:00	08/14/15
L1519590-06	D8 0-6' COMP	SOIL	BOSTON, MA	08/14/15 12:00	08/14/15

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

### 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

The samples submitted for Volatile Organics were received without raw soil for the Total Solids analysis. The Total Solids results from the corresponding composite samples were utilized in the dry weight calculation of the Volatile Organics data.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1519590-01, -03, and -05, did not meet the method required minimum response factor on the lowest calibration standard for acetone (0.09844), 4-methyl-2-pentanone (0.07160), and 1,4-dioxane (0.00172), as well as the average response factor for acetone, 4-methyl-2-pentanone, and 1,4-dioxane.

The continuing calibration standards, associated with L1519590-01, -03, and -05, are outside the acceptance criteria for several compounds; however, they are within overall method allowances. A copy of the continuing calibration standards is included as an addendum to this report.

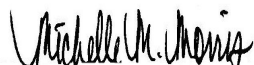
##### Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

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:

 Michelle M. Morris

Title: Technical Director/Representative

Date: 08/23/15

# ORGANICS

# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-01  
 Client ID: D14 S12 22-24'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/21/15 01:38  
 Analyst: BN  
 Percent Solids: 75%

Date Collected: 08/14/15 07:30  
 Date Received: 08/14/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	7.7	--	1
1,1-Dichloroethane	ND		ug/kg	1.2	--	1
Chloroform	ND		ug/kg	1.2	--	1
Carbon tetrachloride	ND		ug/kg	0.77	--	1
1,2-Dichloropropane	ND		ug/kg	2.7	--	1
Dibromochloromethane	ND		ug/kg	0.77	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.2	--	1
Tetrachloroethene	ND		ug/kg	0.77	--	1
Chlorobenzene	ND		ug/kg	0.77	--	1
Trichlorofluoromethane	ND		ug/kg	3.1	--	1
1,2-Dichloroethane	ND		ug/kg	0.77	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.77	--	1
Bromodichloromethane	ND		ug/kg	0.77	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.77	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.77	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.77	--	1
1,1-Dichloropropene	ND		ug/kg	3.1	--	1
Bromoform	ND		ug/kg	3.1	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.77	--	1
Benzene	ND		ug/kg	0.77	--	1
Toluene	ND		ug/kg	1.2	--	1
Ethylbenzene	ND		ug/kg	0.77	--	1
Chloromethane	ND		ug/kg	3.1	--	1
Bromomethane	ND		ug/kg	1.5	--	1
Vinyl chloride	ND		ug/kg	1.5	--	1
Chloroethane	ND		ug/kg	1.5	--	1
1,1-Dichloroethene	ND		ug/kg	0.77	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.2	--	1
Trichloroethene	ND		ug/kg	0.77	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.1	--	1



Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

## SAMPLE RESULTS

Lab ID: L1519590-01  
 Client ID: D14 S12 22-24'  
 Sample Location: BOSTON, MA

Date Collected: 08/14/15 07:30  
 Date Received: 08/14/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	3.1	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.1	--	1
Methyl tert butyl ether	ND		ug/kg	1.5	--	1
p/m-Xylene	ND		ug/kg	1.5	--	1
o-Xylene	ND		ug/kg	1.5	--	1
Xylenes, Total	ND		ug/kg	1.5	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.77	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.77	--	1
Dibromomethane	ND		ug/kg	3.1	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.1	--	1
Styrene	ND		ug/kg	1.5	--	1
Dichlorodifluoromethane	ND		ug/kg	7.7	--	1
Acetone	ND		ug/kg	28	--	1
Carbon disulfide	ND		ug/kg	3.1	--	1
Methyl ethyl ketone	ND		ug/kg	7.7	--	1
Methyl isobutyl ketone	ND		ug/kg	7.7	--	1
2-Hexanone	ND		ug/kg	7.7	--	1
Bromochloromethane	ND		ug/kg	3.1	--	1
Tetrahydrofuran	ND		ug/kg	3.1	--	1
2,2-Dichloropropane	ND		ug/kg	3.9	--	1
1,2-Dibromoethane	ND		ug/kg	3.1	--	1
1,3-Dichloropropane	ND		ug/kg	3.1	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.77	--	1
Bromobenzene	ND		ug/kg	3.9	--	1
n-Butylbenzene	ND		ug/kg	0.77	--	1
sec-Butylbenzene	ND		ug/kg	0.77	--	1
tert-Butylbenzene	ND		ug/kg	3.1	--	1
o-Chlorotoluene	ND		ug/kg	3.1	--	1
p-Chlorotoluene	ND		ug/kg	3.1	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.1	--	1
Hexachlorobutadiene	ND		ug/kg	3.1	--	1
Isopropylbenzene	ND		ug/kg	0.77	--	1
p-Isopropyltoluene	ND		ug/kg	0.77	--	1
Naphthalene	ND		ug/kg	3.1	--	1
n-Propylbenzene	ND		ug/kg	0.77	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.1	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.1	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.1	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.1	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-01  
 Client ID: D14 S12 22-24'  
 Sample Location: BOSTON, MA

Date Collected: 08/14/15 07:30  
 Date Received: 08/14/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
-----------	--------	-----------	-------	----	-----	-----------------

## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	3.9	--	1
Diisopropyl Ether	ND		ug/kg	3.1	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.1	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.1	--	1
1,4-Dioxane	ND		ug/kg	31	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	100		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-03  
 Client ID: D14 S17 35-37'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/21/15 21:14  
 Analyst: PP  
 Percent Solids: 79%

Date Collected: 08/14/15 10:15  
 Date Received: 08/14/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	15	--	1
1,1-Dichloroethane	ND		ug/kg	2.2	--	1
Chloroform	ND		ug/kg	2.2	--	1
Carbon tetrachloride	ND		ug/kg	1.5	--	1
1,2-Dichloropropane	ND		ug/kg	5.2	--	1
Dibromochloromethane	ND		ug/kg	1.5	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.2	--	1
Tetrachloroethene	ND		ug/kg	1.5	--	1
Chlorobenzene	ND		ug/kg	1.5	--	1
Trichlorofluoromethane	ND		ug/kg	5.9	--	1
1,2-Dichloroethane	ND		ug/kg	1.5	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.5	--	1
Bromodichloromethane	ND		ug/kg	1.5	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.5	--	1
1,1-Dichloropropene	ND		ug/kg	5.9	--	1
Bromoform	ND		ug/kg	5.9	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Benzene	ND		ug/kg	1.5	--	1
Toluene	ND		ug/kg	2.2	--	1
Ethylbenzene	ND		ug/kg	1.5	--	1
Chloromethane	ND		ug/kg	5.9	--	1
Bromomethane	ND		ug/kg	3.0	--	1
Vinyl chloride	ND		ug/kg	3.0	--	1
Chloroethane	ND		ug/kg	3.0	--	1
1,1-Dichloroethene	ND		ug/kg	1.5	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.2	--	1
Trichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.9	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

## SAMPLE RESULTS

Lab ID: L1519590-03  
 Client ID: D14 S17 35-37'  
 Sample Location: BOSTON, MA

Date Collected: 08/14/15 10:15  
 Date Received: 08/14/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	5.9	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.9	--	1
Methyl tert butyl ether	ND		ug/kg	3.0	--	1
p/m-Xylene	ND		ug/kg	3.0	--	1
o-Xylene	ND		ug/kg	3.0	--	1
Xylenes, Total	ND		ug/kg	3.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.5	--	1
Dibromomethane	ND		ug/kg	5.9	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.9	--	1
Styrene	ND		ug/kg	3.0	--	1
Dichlorodifluoromethane	ND		ug/kg	15	--	1
Acetone	ND		ug/kg	53	--	1
Carbon disulfide	ND		ug/kg	5.9	--	1
Methyl ethyl ketone	ND		ug/kg	15	--	1
Methyl isobutyl ketone	ND		ug/kg	15	--	1
2-Hexanone	ND		ug/kg	15	--	1
Bromochloromethane	ND		ug/kg	5.9	--	1
Tetrahydrofuran	ND		ug/kg	5.9	--	1
2,2-Dichloropropane	ND		ug/kg	7.4	--	1
1,2-Dibromoethane	ND		ug/kg	5.9	--	1
1,3-Dichloropropane	ND		ug/kg	5.9	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Bromobenzene	ND		ug/kg	7.4	--	1
n-Butylbenzene	ND		ug/kg	1.5	--	1
sec-Butylbenzene	ND		ug/kg	1.5	--	1
tert-Butylbenzene	ND		ug/kg	5.9	--	1
o-Chlorotoluene	ND		ug/kg	5.9	--	1
p-Chlorotoluene	ND		ug/kg	5.9	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.9	--	1
Hexachlorobutadiene	ND		ug/kg	5.9	--	1
Isopropylbenzene	ND		ug/kg	1.5	--	1
p-Isopropyltoluene	ND		ug/kg	1.5	--	1
Naphthalene	ND		ug/kg	5.9	--	1
n-Propylbenzene	ND		ug/kg	1.5	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	5.9	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.9	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.9	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.9	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-03  
 Client ID: D14 S17 35-37'  
 Sample Location: BOSTON, MA

Date Collected: 08/14/15 10:15  
 Date Received: 08/14/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	7.4	--	1
Diisopropyl Ether	ND		ug/kg	5.9	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.9	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.9	--	1
1,4-Dioxane	ND		ug/kg	59	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	110		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-05  
 Client ID: D8 S1 0-2'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/22/15 14:13  
 Analyst: BN  
 Percent Solids: 83%

Date Collected: 08/14/15 12:00  
 Date Received: 08/14/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	14	--	1
1,1-Dichloroethane	ND		ug/kg	2.1	--	1
Chloroform	ND		ug/kg	2.1	--	1
Carbon tetrachloride	ND		ug/kg	1.4	--	1
1,2-Dichloropropane	ND		ug/kg	4.9	--	1
Dibromochloromethane	ND		ug/kg	1.4	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.1	--	1
Tetrachloroethene	ND		ug/kg	1.4	--	1
Chlorobenzene	ND		ug/kg	1.4	--	1
Trichlorofluoromethane	ND		ug/kg	5.6	--	1
1,2-Dichloroethane	ND		ug/kg	1.4	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.4	--	1
Bromodichloromethane	ND		ug/kg	1.4	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.4	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.4	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.4	--	1
1,1-Dichloropropene	ND		ug/kg	5.6	--	1
Bromoform	ND		ug/kg	5.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.4	--	1
Benzene	ND		ug/kg	1.4	--	1
Toluene	ND		ug/kg	2.1	--	1
Ethylbenzene	ND		ug/kg	1.4	--	1
Chloromethane	ND		ug/kg	5.6	--	1
Bromomethane	ND		ug/kg	2.8	--	1
Vinyl chloride	ND		ug/kg	2.8	--	1
Chloroethane	ND		ug/kg	2.8	--	1
1,1-Dichloroethene	ND		ug/kg	1.4	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.1	--	1
Trichloroethene	ND		ug/kg	1.4	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.6	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

## SAMPLE RESULTS

Lab ID: L1519590-05

Date Collected: 08/14/15 12:00

Client ID: D8 S1 0-2'

Date Received: 08/14/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	5.6	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.6	--	1
Methyl tert butyl ether	ND		ug/kg	2.8	--	1
p/m-Xylene	ND		ug/kg	2.8	--	1
o-Xylene	ND		ug/kg	2.8	--	1
Xylenes, Total	ND		ug/kg	2.8	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.4	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.4	--	1
Dibromomethane	ND		ug/kg	5.6	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.6	--	1
Styrene	ND		ug/kg	2.8	--	1
Dichlorodifluoromethane	ND		ug/kg	14	--	1
Acetone	ND		ug/kg	50	--	1
Carbon disulfide	ND		ug/kg	5.6	--	1
Methyl ethyl ketone	ND		ug/kg	14	--	1
Methyl isobutyl ketone	ND		ug/kg	14	--	1
2-Hexanone	ND		ug/kg	14	--	1
Bromochloromethane	ND		ug/kg	5.6	--	1
Tetrahydrofuran	ND		ug/kg	5.6	--	1
2,2-Dichloropropane	ND		ug/kg	7.0	--	1
1,2-Dibromoethane	ND		ug/kg	5.6	--	1
1,3-Dichloropropane	ND		ug/kg	5.6	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.4	--	1
Bromobenzene	ND		ug/kg	7.0	--	1
n-Butylbenzene	ND		ug/kg	1.4	--	1
sec-Butylbenzene	ND		ug/kg	1.4	--	1
tert-Butylbenzene	ND		ug/kg	5.6	--	1
o-Chlorotoluene	ND		ug/kg	5.6	--	1
p-Chlorotoluene	ND		ug/kg	5.6	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.6	--	1
Hexachlorobutadiene	ND		ug/kg	5.6	--	1
Isopropylbenzene	ND		ug/kg	1.4	--	1
p-Isopropyltoluene	ND		ug/kg	1.4	--	1
Naphthalene	ND		ug/kg	5.6	--	1
n-Propylbenzene	ND		ug/kg	1.4	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	5.6	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.6	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.6	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.6	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-05  
 Client ID: D8 S1 0-2'  
 Sample Location: BOSTON, MA

Date Collected: 08/14/15 12:00  
 Date Received: 08/14/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	7.0	--	1
Diisopropyl Ether	ND		ug/kg	5.6	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.6	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.6	--	1
1,4-Dioxane	ND		ug/kg	56	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	132	Q	70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	119		70-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/20/15 21:50  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG814205-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/20/15 21:50  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG814205-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylene (Total)	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene (total)	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 08/20/15 21:50  
**Analyst:** BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01 Batch: WG814205-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Ethyl ether	ND		ug/kg	5.0	--
Isopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	92		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/21/15 20:48  
Analyst: PP

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 03 Batch: WG814646-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/21/15 20:48  
Analyst: PP

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 03 Batch: WG814646-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylene (Total)	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene (total)	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 08/21/15 20:48  
**Analyst:** PP

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 03 Batch: WG814646-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Ethyl ether	ND		ug/kg	5.0	--
Isopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	105		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/22/15 08:38  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 05 Batch: WG814809-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
 Analytical Date: 08/22/15 08:38  
 Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 05 Batch: WG814809-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylene (Total)	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene (total)	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 08/22/15 08:38  
**Analyst:** BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 05 Batch: WG814809-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Ethyl ether	ND		ug/kg	5.0	--
Isopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	123		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	106		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG814205-1 WG814205-2								
Methylene chloride	93		96		70-130	3		20
1,1-Dichloroethane	100		104		70-130	4		20
Chloroform	98		101		70-130	3		20
Carbon tetrachloride	94		97		70-130	3		20
1,2-Dichloropropane	100		103		70-130	3		20
Dibromochloromethane	87		91		70-130	4		20
1,1,2-Trichloroethane	96		101		70-130	5		20
Tetrachloroethene	86		89		70-130	3		20
Chlorobenzene	91		95		70-130	4		20
Trichlorofluoromethane	96		100		70-130	4		20
1,2-Dichloroethane	96		100		70-130	4		20
1,1,1-Trichloroethane	95		97		70-130	2		20
Bromodichloromethane	94		98		70-130	4		20
trans-1,3-Dichloropropene	97		101		70-130	4		20
cis-1,3-Dichloropropene	93		96		70-130	3		20
1,1-Dichloropropene	100		103		70-130	3		20
Bromoform	73		76		70-130	4		20
1,1,2,2-Tetrachloroethane	95		98		70-130	3		20
Benzene	97		100		70-130	3		20
Toluene	97		100		70-130	3		20
Ethylbenzene	97		100		70-130	3		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG814205-1 WG814205-2								
Chloromethane	108		112		70-130	4		20
Bromomethane	96		101		70-130	5		20
Vinyl chloride	103		108		70-130	5		20
Chloroethane	158	Q	159	Q	70-130	1		20
1,1-Dichloroethene	93		96		70-130	3		20
trans-1,2-Dichloroethene	92		95		70-130	3		20
Trichloroethene	94		96		70-130	2		20
1,2-Dichlorobenzene	88		92		70-130	4		20
1,3-Dichlorobenzene	91		93		70-130	2		20
1,4-Dichlorobenzene	90		92		70-130	2		20
Methyl tert butyl ether	82		86		70-130	5		20
p/m-Xylene	92		96		70-130	4		20
o-Xylene	90		93		70-130	3		20
cis-1,2-Dichloroethene	92		95		70-130	3		20
Dibromomethane	90		95		70-130	5		20
1,2,3-Trichloropropane	94		96		70-130	2		20
Styrene	86		90		70-130	5		20
Dichlorodifluoromethane	113		117		70-130	3		20
Acetone	135	Q	127		70-130	6		20
Carbon disulfide	99		101		70-130	2		20
Methyl ethyl ketone	104		104		70-130	0		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG814205-1 WG814205-2								
Methyl isobutyl ketone	71		73		70-130	3		20
2-Hexanone	80		80		70-130	0		20
Bromochloromethane	94		96		70-130	2		20
Tetrahydrofuran	84		102		70-130	19		20
2,2-Dichloropropane	98		101		70-130	3		20
1,2-Dibromoethane	88		92		70-130	4		20
1,3-Dichloropropane	97		101		70-130	4		20
1,1,1,2-Tetrachloroethane	88		93		70-130	6		20
Bromobenzene	87		89		70-130	2		20
n-Butylbenzene	104		106		70-130	2		20
sec-Butylbenzene	99		101		70-130	2		20
tert-Butylbenzene	94		96		70-130	2		20
o-Chlorotoluene	102		104		70-130	2		20
p-Chlorotoluene	101		104		70-130	3		20
1,2-Dibromo-3-chloropropane	68	Q	73		70-130	7		20
Hexachlorobutadiene	82		83		70-130	1		20
Isopropylbenzene	97		99		70-130	2		20
p-Isopropyltoluene	93		96		70-130	3		20
Naphthalene	77		82		70-130	6		20
n-Propylbenzene	102		103		70-130	1		20
1,2,3-Trichlorobenzene	79		83		70-130	5		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG814205-1 WG814205-2								
1,2,4-Trichlorobenzene	81		84		70-130	4		20
1,3,5-Trimethylbenzene	96		99		70-130	3		20
1,2,4-Trimethylbenzene	95		97		70-130	2		20
Diethyl ether	96		99		70-130	3		20
Diisopropyl Ether	104		108		70-130	4		20
Ethyl-Tert-Butyl-Ether	90		93		70-130	3		20
Tertiary-Amyl Methyl Ether	81		84		70-130	4		20
1,4-Dioxane	65	Q	66	Q	70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		105		70-130
Toluene-d8	105		106		70-130
4-Bromofluorobenzene	108		107		70-130
Dibromofluoromethane	95		97		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG814646-1 WG814646-2								
Methylene chloride	102		101		70-130	1		20
1,1-Dichloroethane	114		112		70-130	2		20
Chloroform	109		106		70-130	3		20
Carbon tetrachloride	106		102		70-130	4		20
1,2-Dichloropropane	107		106		70-130	1		20
Dibromochloromethane	94		94		70-130	0		20
1,1,2-Trichloroethane	107		104		70-130	3		20
Tetrachloroethene	89		87		70-130	2		20
Chlorobenzene	96		95		70-130	1		20
Trichlorofluoromethane	110		105		70-130	5		20
1,2-Dichloroethane	113		111		70-130	2		20
1,1,1-Trichloroethane	105		104		70-130	1		20
Bromodichloromethane	106		105		70-130	1		20
trans-1,3-Dichloropropene	102		102		70-130	0		20
cis-1,3-Dichloropropene	98		97		70-130	1		20
1,1-Dichloropropene	106		102		70-130	4		20
Bromoform	79		77		70-130	3		20
1,1,2,2-Tetrachloroethane	106		103		70-130	3		20
Benzene	106		105		70-130	1		20
Toluene	102		99		70-130	3		20
Ethylbenzene	102		100		70-130	2		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG814646-1 WG814646-2								
Chloromethane	135	Q	130		70-130	4		20
Bromomethane	126		123		70-130	2		20
Vinyl chloride	120		112		70-130	7		20
Chloroethane	176	Q	169	Q	70-130	4		20
1,1-Dichloroethene	100		98		70-130	2		20
trans-1,2-Dichloroethene	99		96		70-130	3		20
Trichloroethene	106		102		70-130	4		20
1,2-Dichlorobenzene	92		90		70-130	2		20
1,3-Dichlorobenzene	95		92		70-130	3		20
1,4-Dichlorobenzene	94		92		70-130	2		20
Methyl tert butyl ether	86		86		70-130	0		20
p/m-Xylene	98		96		70-130	2		20
o-Xylene	94		92		70-130	2		20
cis-1,2-Dichloroethene	95		94		70-130	1		20
Dibromomethane	101		101		70-130	0		20
1,2,3-Trichloropropane	106		104		70-130	2		20
Styrene	94		93		70-130	1		20
Dichlorodifluoromethane	127		122		70-130	4		20
Acetone	142	Q	137	Q	70-130	4		20
Carbon disulfide	112		107		70-130	5		20
Methyl ethyl ketone	119		115		70-130	3		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG814646-1 WG814646-2								
Methyl isobutyl ketone	71		70		70-130	1		20
2-Hexanone	76		74		70-130	3		20
Bromochloromethane	98		99		70-130	1		20
Tetrahydrofuran	95		108		70-130	13		20
2,2-Dichloropropane	108		105		70-130	3		20
1,2-Dibromoethane	92		92		70-130	0		20
1,3-Dichloropropane	103		103		70-130	0		20
1,1,1,2-Tetrachloroethane	96		94		70-130	2		20
Bromobenzene	86		85		70-130	1		20
n-Butylbenzene	112		108		70-130	4		20
sec-Butylbenzene	102		98		70-130	4		20
tert-Butylbenzene	93		90		70-130	3		20
o-Chlorotoluene	105		102		70-130	3		20
p-Chlorotoluene	105		101		70-130	4		20
1,2-Dibromo-3-chloropropane	71		66	Q	70-130	7		20
Hexachlorobutadiene	78		77		70-130	1		20
Isopropylbenzene	93		91		70-130	2		20
p-Isopropyltoluene	94		91		70-130	3		20
Naphthalene	76		74		70-130	3		20
n-Propylbenzene	105		101		70-130	4		20
1,2,3-Trichlorobenzene	80		79		70-130	1		20



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG814646-1 WG814646-2								
1,2,4-Trichlorobenzene	79		77		70-130	3		20
1,3,5-Trimethylbenzene	100		96		70-130	4		20
1,2,4-Trimethylbenzene	98		95		70-130	3		20
Diethyl ether	99		100		70-130	1		20
Diisopropyl Ether	109		109		70-130	0		20
Ethyl-Tert-Butyl-Ether	93		92		70-130	1		20
Tertiary-Amyl Methyl Ether	83		82		70-130	1		20
1,4-Dioxane	72		67	Q	70-130	7		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	117		118		70-130
Toluene-d8	105		106		70-130
4-Bromofluorobenzene	99		100		70-130
Dibromofluoromethane	105		105		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 05 Batch: WG814809-1 WG814809-2								
Methylene chloride	104		96		70-130	8		20
1,1-Dichloroethane	114		101		70-130	12		20
Chloroform	111		100		70-130	10		20
Carbon tetrachloride	102		82		70-130	22	Q	20
1,2-Dichloropropane	110		99		70-130	11		20
Dibromochloromethane	98		92		70-130	6		20
1,1,2-Trichloroethane	111		106		70-130	5		20
Tetrachloroethene	85		73		70-130	15		20
Chlorobenzene	98		89		70-130	10		20
Trichlorofluoromethane	109		83		70-130	27	Q	20
1,2-Dichloroethane	116		109		70-130	6		20
1,1,1-Trichloroethane	104		86		70-130	19		20
Bromodichloromethane	109		101		70-130	8		20
trans-1,3-Dichloropropene	103		99		70-130	4		20
cis-1,3-Dichloropropene	100		92		70-130	8		20
1,1-Dichloropropene	100		82		70-130	20		20
Bromoform	79		77		70-130	3		20
1,1,2,2-Tetrachloroethane	106		104		70-130	2		20
Benzene	106		93		70-130	13		20
Toluene	102		90		70-130	13		20
Ethylbenzene	102		88		70-130	15		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 05 Batch: WG814809-1 WG814809-2								
Chloromethane	133	Q	111		70-130	18		20
Bromomethane	130		113		70-130	14		20
Vinyl chloride	117		91		70-130	25	Q	20
Chloroethane	178	Q	147	Q	70-130	19		20
1,1-Dichloroethene	97		78		70-130	22	Q	20
trans-1,2-Dichloroethene	97		82		70-130	17		20
Trichloroethene	104		88		70-130	17		20
1,2-Dichlorobenzene	94		88		70-130	7		20
1,3-Dichlorobenzene	95		87		70-130	9		20
1,4-Dichlorobenzene	95		89		70-130	7		20
Methyl tert butyl ether	88		85		70-130	3		20
p/m-Xylene	97		85		70-130	13		20
o-Xylene	93		84		70-130	10		20
cis-1,2-Dichloroethene	97		87		70-130	11		20
Dibromomethane	105		97		70-130	8		20
1,2,3-Trichloropropane	107		107		70-130	0		20
Styrene	95		88		70-130	8		20
Dichlorodifluoromethane	131	Q	97		70-130	30	Q	20
Acetone	141	Q	129		70-130	9		20
Carbon disulfide	111		90		70-130	21	Q	20
Methyl ethyl ketone	103		96		70-130	7		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 05 Batch: WG814809-1 WG814809-2								
Methyl isobutyl ketone	68	Q	67	Q	70-130	1		20
2-Hexanone	77		76		70-130	1		20
Bromochloromethane	105		97		70-130	8		20
Tetrahydrofuran	97		99		70-130	2		20
2,2-Dichloropropane	106		89		70-130	17		20
1,2-Dibromoethane	95		91		70-130	4		20
1,3-Dichloropropane	106		101		70-130	5		20
1,1,1,2-Tetrachloroethane	99		91		70-130	8		20
Bromobenzene	86		80		70-130	7		20
n-Butylbenzene	109		91		70-130	18		20
sec-Butylbenzene	98		82		70-130	18		20
tert-Butylbenzene	89		75		70-130	17		20
o-Chlorotoluene	105		96		70-130	9		20
p-Chlorotoluene	104		95		70-130	9		20
1,2-Dibromo-3-chloropropane	71		72		70-130	1		20
Hexachlorobutadiene	78		63	Q	70-130	21	Q	20
Isopropylbenzene	90		77		70-130	16		20
p-Isopropyltoluene	91		77		70-130	17		20
Naphthalene	76		74		70-130	3		20
n-Propylbenzene	102		86		70-130	17		20
1,2,3-Trichlorobenzene	81		76		70-130	6		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 05 Batch: WG814809-1 WG814809-2								
1,2,4-Trichlorobenzene	81		74		70-130	9		20
1,3,5-Trimethylbenzene	98		86		70-130	13		20
1,2,4-Trimethylbenzene	97		86		70-130	12		20
Diethyl ether	103		99		70-130	4		20
Diisopropyl Ether	112		104		70-130	7		20
Ethyl-Tert-Butyl-Ether	94		89		70-130	5		20
Tertiary-Amyl Methyl Ether	84		81		70-130	4		20
1,4-Dioxane	68	Q	68	Q	70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	118		120		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	105		104		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-02  
 Client ID: D14 18-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/20/15 01:54  
 Analyst: PS  
 Percent Solids: 75%

Date Collected: 08/14/15 07:30  
 Date Received: 08/14/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/18/15 13:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	260	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	230	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

**Lab ID:** L1519590-02  
**Client ID:** D14 18-24' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/14/15 07:30  
**Date Received:** 08/14/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	130	--	1
Aniline	ND		ug/kg	260	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	260	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	460	--	1
4-Nitrophenol	ND		ug/kg	300	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	430	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	310	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	82		30-130
Phenol-d6	85		30-130
Nitrobenzene-d5	78		30-130
2-Fluorobiphenyl	77		30-130
2,4,6-Tribromophenol	84		30-130
4-Terphenyl-d14	73		30-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-04  
 Client ID: D14 27-42' CLAY  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/20/15 02:19  
 Analyst: PS  
 Percent Solids: 79%

Date Collected: 08/14/15 10:15  
 Date Received: 08/14/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/18/15 13:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

**Lab ID:** L1519590-04  
**Client ID:** D14 27-42' CLAY  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/14/15 10:15  
**Date Received:** 08/14/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	420	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	84		30-130
Phenol-d6	85		30-130
Nitrobenzene-d5	78		30-130
2-Fluorobiphenyl	76		30-130
2,4,6-Tribromophenol	80		30-130
4-Terphenyl-d14	66		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-06  
 Client ID: D8 0-6' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/20/15 02:44  
 Analyst: PS  
 Percent Solids: 83%

Date Collected: 08/14/15 12:00  
 Date Received: 08/14/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/18/15 13:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	610		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	210	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	240		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	340		ug/kg	120	--	1
Benzo(a)pyrene	320		ug/kg	160	--	1
Benzo(b)fluoranthene	320		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

**Lab ID:** L1519590-06  
**Client ID:** D8 0-6' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/14/15 12:00  
**Date Received:** 08/14/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	280		ug/kg	120	--	1
Chrysene	360		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	120		ug/kg	120	--	1
Benzo(ghi)perylene	200		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	380		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	210		ug/kg	160	--	1
Pyrene	560		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	430	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	950	--	1
Pentachlorophenol	ND		ug/kg	390	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	53		30-130
Phenol-d6	68		30-130
Nitrobenzene-d5	68		30-130
2-Fluorobiphenyl	57		30-130
2,4,6-Tribromophenol	27	Q	30-130
4-Terphenyl-d14	44		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/19/15 20:27  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/18/15 13:41

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06 Batch: WG813142-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/19/15 20:27  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/18/15 13:41

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06 Batch: WG813142-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	320	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 08/19/15 20:27  
Analyst: PS

Extraction Method: EPA 3546  
Extraction Date: 08/18/15 13:41

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06 Batch: WG813142-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	81		30-130
Phenol-d6	86		30-130
Nitrobenzene-d5	75		30-130
2-Fluorobiphenyl	80		30-130
2,4,6-Tribromophenol	86		30-130
4-Terphenyl-d14	89		30-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06 Batch: WG813142-2 WG813142-3								
Acenaphthene	78		75		40-140	4		30
1,2,4-Trichlorobenzene	75		75		40-140	0		30
Hexachlorobenzene	81		76		40-140	6		30
Bis(2-chloroethyl)ether	78		75		40-140	4		30
2-Chloronaphthalene	80		77		40-140	4		30
1,2-Dichlorobenzene	73		72		40-140	1		30
1,3-Dichlorobenzene	70		72		40-140	3		30
1,4-Dichlorobenzene	71		72		40-140	1		30
3,3'-Dichlorobenzidine	74		66		40-140	11		30
2,4-Dinitrotoluene	88		80		40-140	10		30
2,6-Dinitrotoluene	86		81		40-140	6		30
Azobenzene	81		76		40-140	6		30
Fluoranthene	86		78		40-140	10		30
4-Bromophenyl phenyl ether	82		77		40-140	6		30
Bis(2-chloroisopropyl)ether	77		74		40-140	4		30
Bis(2-chloroethoxy)methane	81		76		40-140	6		30
Hexachlorobutadiene	72		72		40-140	0		30
Hexachloroethane	68		70		40-140	3		30
Isophorone	80		77		40-140	4		30
Naphthalene	75		74		40-140	1		30
Nitrobenzene	77		75		40-140	3		30



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCS %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06 Batch: WG813142-2 WG813142-3								
Bis(2-Ethylhexyl)phthalate	85		78		40-140	9		30
Butyl benzyl phthalate	85		74		40-140	14		30
Di-n-butylphthalate	83		75		40-140	10		30
Di-n-octylphthalate	83		75		40-140	10		30
Diethyl phthalate	83		76		40-140	9		30
Dimethyl phthalate	83		78		40-140	6		30
Benzo(a)anthracene	88		80		40-140	10		30
Benzo(a)pyrene	82		74		40-140	10		30
Benzo(b)fluoranthene	85		75		40-140	13		30
Benzo(k)fluoranthene	82		78		40-140	5		30
Chrysene	86		79		40-140	8		30
Acenaphthylene	80		77		40-140	4		30
Anthracene	87		82		40-140	6		30
Benzo(ghi)perylene	81		74		40-140	9		30
Fluorene	80		76		40-140	5		30
Phenanthrene	81		77		40-140	5		30
Dibenzo(a,h)anthracene	82		75		40-140	9		30
Indeno(1,2,3-cd)Pyrene	93		85		40-140	9		30
Pyrene	86		78		40-140	10		30
Aniline	74		70		40-140	6		30
4-Chloroaniline	79		78		40-140	1		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06 Batch: WG813142-2 WG813142-3								
Dibenzofuran	79		76		40-140	4		30
2-Methylnaphthalene	78		76		40-140	3		30
Acetophenone	76		73		40-140	4		30
2,4,6-Trichlorophenol	86		81		30-130	6		30
2-Chlorophenol	82		79		30-130	4		30
2,4-Dichlorophenol	83		78		30-130	6		30
2,4-Dimethylphenol	85		81		30-130	5		30
2-Nitrophenol	78		75		30-130	4		30
4-Nitrophenol	83		75		30-130	10		30
2,4-Dinitrophenol	58		45		30-130	25		30
Pentachlorophenol	76		67		30-130	13		30
Phenol	83		79		30-130	5		30
2-Methylphenol	84		80		30-130	5		30
3-Methylphenol/4-Methylphenol	92		87		30-130	6		30
2,4,5-Trichlorophenol	84		78		30-130	7		30

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
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MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06 Batch: WG813142-2 WG813142-3

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
2-Fluorophenol	86		80		30-130
Phenol-d6	88		82		30-130
Nitrobenzene-d5	81		76		30-130
2-Fluorobiphenyl	79		75		30-130
2,4,6-Tribromophenol	87		79		30-130
4-Terphenyl-d14	83		74		30-130

# PETROLEUM HYDROCARBONS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-02  
 Client ID: D14 18-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/19/15 23:05  
 Analyst: AR  
 Percent Solids: 75%

Date Collected: 08/14/15 07:30  
 Date Received: 08/14/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/19/15 01:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	42800	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	94		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-04  
 Client ID: D14 27-42' CLAY  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/19/15 20:05  
 Analyst: AR  
 Percent Solids: 79%

Date Collected: 08/14/15 10:15  
 Date Received: 08/14/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/19/15 01:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	40400	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	84		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-06  
 Client ID: D8 0-6' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/20/15 04:29  
 Analyst: AR  
 Percent Solids: 83%

Date Collected: 08/14/15 12:00  
 Date Received: 08/14/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/19/15 01:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	147000		ug/kg	38200	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	81		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8015C(M)  
 Analytical Date: 08/19/15 18:16  
 Analyst: AR

Extraction Method: EPA 3546  
 Extraction Date: 08/19/15 01:57

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 02,04,06 Batch: WG813316-1					
TPH	ND		ug/kg	32200	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	80		40-140



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02,04,06 Batch: WG813316-2								
TPH	128		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	84				40-140

# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-02  
 Client ID: D14 18-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/18/15 22:48  
 Analyst: JW  
 Percent Solids: 75%

Date Collected: 08/14/15 07:30  
 Date Received: 08/14/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/15/15 08:59  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/16/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/16/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	44.0	--	1	A
Aroclor 1221	ND		ug/kg	44.0	--	1	A
Aroclor 1232	ND		ug/kg	44.0	--	1	A
Aroclor 1242	ND		ug/kg	44.0	--	1	A
Aroclor 1248	ND		ug/kg	44.0	--	1	A
Aroclor 1254	ND		ug/kg	44.0	--	1	A
Aroclor 1260	ND		ug/kg	44.0	--	1	A
Aroclor 1262	ND		ug/kg	44.0	--	1	A
Aroclor 1268	ND		ug/kg	44.0	--	1	A
PCBs, Total	ND		ug/kg	44.0	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	45		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	50		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

**Lab ID:** L1519590-04  
**Client ID:** D14 27-42' CLAY  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil  
**Analytical Method:** 97,8082A  
**Analytical Date:** 08/19/15 16:33  
**Analyst:** JW  
**Percent Solids:** 79%

**Date Collected:** 08/14/15 10:15  
**Date Received:** 08/14/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3546  
**Extraction Date:** 08/18/15 19:05  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 08/19/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 08/19/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	40.5	--	1	A
Aroclor 1221	ND		ug/kg	40.5	--	1	A
Aroclor 1232	ND		ug/kg	40.5	--	1	A
Aroclor 1242	ND		ug/kg	40.5	--	1	A
Aroclor 1248	ND		ug/kg	40.5	--	1	A
Aroclor 1254	ND		ug/kg	40.5	--	1	A
Aroclor 1260	ND		ug/kg	40.5	--	1	A
Aroclor 1262	ND		ug/kg	40.5	--	1	A
Aroclor 1268	ND		ug/kg	40.5	--	1	A
PCBs, Total	ND		ug/kg	40.5	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		30-150	A
Decachlorobiphenyl	74		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	71		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

**Lab ID:** L1519590-06  
**Client ID:** D8 0-6' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil  
**Analytical Method:** 97,8082A  
**Analytical Date:** 08/19/15 16:49  
**Analyst:** JW  
**Percent Solids:** 83%

**Date Collected:** 08/14/15 12:00  
**Date Received:** 08/14/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3546  
**Extraction Date:** 08/18/15 19:05  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 08/19/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 08/19/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	38.6	--	1	A
Aroclor 1221	ND		ug/kg	38.6	--	1	A
Aroclor 1232	ND		ug/kg	38.6	--	1	A
Aroclor 1242	ND		ug/kg	38.6	--	1	A
Aroclor 1248	ND		ug/kg	38.6	--	1	A
Aroclor 1254	ND		ug/kg	38.6	--	1	A
Aroclor 1260	ND		ug/kg	38.6	--	1	A
Aroclor 1262	ND		ug/kg	38.6	--	1	A
Aroclor 1268	ND		ug/kg	38.6	--	1	A
PCBs, Total	ND		ug/kg	38.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	69		30-150	A
Decachlorobiphenyl	72		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	78		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis  
 Batch Quality Control**

Analytical Method: 97,8082A  
 Analytical Date: 08/18/15 23:01  
 Analyst: JW

Extraction Method: EPA 3546  
 Extraction Date: 08/15/15 08:59  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/16/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/16/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 02 Batch: WG812473-1						
Aroclor 1016	ND		ug/kg	31.4	--	A
Aroclor 1221	ND		ug/kg	31.4	--	A
Aroclor 1232	ND		ug/kg	31.4	--	A
Aroclor 1242	ND		ug/kg	31.4	--	A
Aroclor 1248	ND		ug/kg	31.4	--	A
Aroclor 1254	ND		ug/kg	31.4	--	A
Aroclor 1260	ND		ug/kg	31.4	--	A
Aroclor 1262	ND		ug/kg	31.4	--	A
Aroclor 1268	ND		ug/kg	31.4	--	A
PCBs, Total	ND		ug/kg	31.4	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	59		30-150	B



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8082A  
 Analytical Date: 08/19/15 15:45  
 Analyst: JW

Extraction Method: EPA 3546  
 Extraction Date: 08/18/15 19:05  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/19/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/19/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 04,06 Batch: WG813243-1						
Aroclor 1016	ND		ug/kg	32.0	--	A
Aroclor 1221	ND		ug/kg	32.0	--	A
Aroclor 1232	ND		ug/kg	32.0	--	A
Aroclor 1242	ND		ug/kg	32.0	--	A
Aroclor 1248	ND		ug/kg	32.0	--	A
Aroclor 1254	ND		ug/kg	32.0	--	A
Aroclor 1260	ND		ug/kg	32.0	--	A
Aroclor 1262	ND		ug/kg	32.0	--	A
Aroclor 1268	ND		ug/kg	32.0	--	A
PCBs, Total	ND		ug/kg	32.0	--	A

Surrogate	%Recovery	Qualifier	Acceptance	
			Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	A
Decachlorobiphenyl	82		30-150	A
2,4,5,6-Tetrachloro-m-xylene	89		30-150	B
Decachlorobiphenyl	81		30-150	B



## Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02 Batch: WG812473-2 WG812473-3									
Aroclor 1016	87		100		40-140	14		30	A
Aroclor 1260	67		64		40-140	5		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		88		30-150	A
Decachlorobiphenyl	69		62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		86		30-150	B
Decachlorobiphenyl	70		64		30-150	B



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 04,06 Batch: WG813243-2 WG813243-3									
Aroclor 1016	67		76		40-140	13		30	A
Aroclor 1260	72		82		40-140	13		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		77		30-150	A
Decachlorobiphenyl	73		85		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		83		30-150	B
Decachlorobiphenyl	65		76		30-150	B

## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-02  
 Client ID: D14 18-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 75%

Date Collected: 08/14/15 07:30  
 Date Received: 08/14/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.2		mg/kg	0.52	--	1	08/15/15 14:43	08/20/15 00:03	EPA 3050B	97,6010C	JH
Barium, Total	25		mg/kg	0.52	--	1	08/15/15 14:43	08/20/15 00:03	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.52	--	1	08/15/15 14:43	08/20/15 00:03	EPA 3050B	97,6010C	JH
Chromium, Total	15		mg/kg	0.52	--	1	08/15/15 14:43	08/20/15 00:03	EPA 3050B	97,6010C	JH
Lead, Total	3.1		mg/kg	2.6	--	1	08/15/15 14:43	08/20/15 00:03	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.095	--	1	08/15/15 12:38	08/17/15 14:09	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.6	--	1	08/15/15 14:43	08/20/15 00:03	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.52	--	1	08/15/15 14:43	08/20/15 00:03	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-04  
 Client ID: D14 27-42' CLAY  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 79%

Date Collected: 08/14/15 10:15  
 Date Received: 08/14/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	5.4		mg/kg	0.50	--	1	08/15/15 12:24	08/17/15 15:30	EPA 3050B	97,6010C	JH
Barium, Total	52		mg/kg	0.50	--	1	08/15/15 12:24	08/17/15 15:30	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.50	--	1	08/15/15 12:24	08/17/15 15:30	EPA 3050B	97,6010C	JH
Chromium, Total	27		mg/kg	0.50	--	1	08/15/15 12:24	08/17/15 15:30	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.5	--	1	08/15/15 12:24	08/17/15 15:30	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.087	--	1	08/15/15 12:38	08/17/15 14:11	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.5	--	1	08/15/15 12:24	08/17/15 15:30	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.50	--	1	08/15/15 12:24	08/17/15 15:30	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

Lab ID: L1519590-06  
 Client ID: D8 0-6' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 83%

Date Collected: 08/14/15 12:00  
 Date Received: 08/14/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.9		mg/kg	0.46	--	1	08/15/15 12:24	08/17/15 15:59	EPA 3050B	97,6010C	JH
Barium, Total	37		mg/kg	0.46	--	1	08/15/15 12:24	08/17/15 15:59	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.46	--	1	08/15/15 12:24	08/17/15 15:59	EPA 3050B	97,6010C	JH
Chromium, Total	12		mg/kg	0.46	--	1	08/15/15 12:24	08/17/15 15:59	EPA 3050B	97,6010C	JH
Lead, Total	31		mg/kg	2.3	--	1	08/15/15 12:24	08/17/15 15:59	EPA 3050B	97,6010C	JH
Mercury, Total	0.102		mg/kg	0.084	--	1	08/15/15 12:38	08/17/15 14:16	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.3	--	1	08/15/15 12:24	08/17/15 15:59	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.46	--	1	08/15/15 12:24	08/17/15 15:59	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02,04,06 Batch: WG812453-1									
Mercury, Total	ND	mg/kg	0.083	--	1	08/15/15 12:38	08/17/15 13:17	97,7471B	DB

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 04,06 Batch: WG812503-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	08/15/15 12:24	08/17/15 11:08	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	08/15/15 12:24	08/17/15 11:08	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	08/15/15 12:24	08/17/15 11:08	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	08/15/15 12:24	08/17/15 11:08	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	08/15/15 12:24	08/17/15 11:08	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	08/15/15 12:24	08/17/15 11:08	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	08/15/15 12:24	08/17/15 11:08	97,6010C	JH

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02 Batch: WG812529-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	08/15/15 14:43	08/19/15 22:52	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	08/15/15 14:43	08/19/15 22:52	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	08/15/15 14:43	08/19/15 22:52	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	08/15/15 14:43	08/19/15 22:52	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	08/15/15 14:43	08/19/15 22:52	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	08/15/15 14:43	08/19/15 22:52	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	08/15/15 14:43	08/19/15 22:52	97,6010C	JH

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

## Method Blank Analysis Batch Quality Control

### Prep Information

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Digestion Method: EPA 3050B

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 02,04,06 Batch: WG812453-2 WG812453-3 SRM Lot Number: D088-540								
Mercury, Total	109		111		72-128	2		30
MCP Total Metals - Westborough Lab Associated sample(s): 04,06 Batch: WG812503-2 WG812503-3 SRM Lot Number: D088-540								
Arsenic, Total	96		96		79-121	0		30
Barium, Total	88		88		83-117	0		30
Cadmium, Total	86		84		83-117	2		30
Chromium, Total	84		84		80-120	0		30
Lead, Total	90		89		81-117	1		30
Selenium, Total	97		97		78-122	0		30
Silver, Total	91		91		75-124	0		30
MCP Total Metals - Westborough Lab Associated sample(s): 02 Batch: WG812529-2 WG812529-3 SRM Lot Number: D088-540								
Arsenic, Total	88		96		79-121	9		30
Barium, Total	94		94		83-117	0		30
Cadmium, Total	94		94		83-117	0		30
Chromium, Total	92		101		80-120	9		30
Lead, Total	89		89		81-117	0		30
Selenium, Total	97		97		78-122	0		30
Silver, Total	98		100		75-124	2		30





# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

### SAMPLE RESULTS

**Lab ID:** L1519590-02  
**Client ID:** D14 18-24' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/14/15 07:30  
**Date Received:** 08/14/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Wet Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/15/15 11:50	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

### SAMPLE RESULTS

**Lab ID:** L1519590-04  
**Client ID:** D14 27-42' CLAY  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/14/15 10:15  
**Date Received:** 08/14/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/15/15 09:51	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

### SAMPLE RESULTS

**Lab ID:** L1519590-06  
**Client ID:** D8 0-6' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/14/15 12:00  
**Date Received:** 08/14/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Soil  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/15/15 09:51	1,1030	AB



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1519590

Report Date: 08/23/15

## SAMPLE RESULTS

Lab ID: L1519590-01

Client ID: D14 S12 22-24'

Sample Location: BOSTON, MA

Matrix: Soil

Date Collected: 08/14/15 07:30

Date Received: 08/14/15

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	75.3		%	0.100	NA	1	-	08/15/15 03:55	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

**Lab ID:** L1519590-02  
**Client ID:** D14 18-24' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/14/15 07:30  
**Date Received:** 08/14/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	140		umhos/cm	10	--	1	-	08/15/15 00:16	1,9050A	AS
Solids, Total	75.3		%	0.100	NA	1	-	08/15/15 03:55	30,2540G	RT
pH (H)	8.7		SU	-	NA	1	-	08/15/15 03:21	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/19/15 14:20	08/19/15 16:33	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	08/19/15 14:20	08/19/15 15:56	1,7.3	RP



Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

## SAMPLE RESULTS

Lab ID: L1519590-03

Date Collected: 08/14/15 10:15

Client ID: D14 S17 35-37'

Date Received: 08/14/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.7		%	0.100	NA	1	-	08/15/15 03:55	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

**Lab ID:** L1519590-04  
**Client ID:** D14 27-42' CLAY  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/14/15 10:15  
**Date Received:** 08/14/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	970		umhos/cm	10	--	1	-	08/15/15 00:16	1,9050A	AS
Solids, Total	78.7		%	0.100	NA	1	-	08/15/15 03:55	30,2540G	RT
pH (H)	8.3		SU	-	NA	1	-	08/15/15 03:21	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/19/15 14:20	08/19/15 16:33	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	08/19/15 14:20	08/19/15 15:56	1,7.3	RP





Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1519590

Report Date: 08/23/15

## SAMPLE RESULTS

Lab ID: L1519590-05

Client ID: D8 S1 0-2'

Sample Location: BOSTON, MA

Matrix: Soil

Date Collected: 08/14/15 12:00

Date Received: 08/14/15

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	83.3		%	0.100	NA	1	-	08/15/15 03:55	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

**SAMPLE RESULTS**

**Lab ID:** L1519590-06  
**Client ID:** D8 0-6' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/14/15 12:00  
**Date Received:** 08/14/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	76		umhos/cm	10	--	1	-	08/15/15 00:16	1,9050A	AS
Solids, Total	83.3		%	0.100	NA	1	-	08/15/15 03:55	30,2540G	RT
pH (H)	8.3		SU	-	NA	1	-	08/15/15 03:21	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/19/15 14:20	08/19/15 16:33	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	08/19/15 14:20	08/19/15 15:56	1,7.3	RP



Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02,04,06 Batch: WG813556-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	08/19/15 14:20	08/19/15 15:55	1,7.3	RP
General Chemistry - Westborough Lab for sample(s): 02,04,06 Batch: WG813557-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	08/19/15 14:20	08/19/15 16:32	1,7.3	RP

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04,06 Batch: WG812418-1								
Specific Conductance	94		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 02,04,06 Batch: WG812425-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 02,04,06 Batch: WG813556-2								
Sulfide, Reactive	79		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02,04,06 Batch: WG813557-2								
Cyanide, Reactive	46		-		30-125	-		40

## Lab Duplicate Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1519590

Report Date: 08/23/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04,06 QC Batch ID: WG813556-3 QC Sample: L1519590-06 Client ID: D8 0-6' COMP						
Sulfide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 02,04,06 QC Batch ID: WG813557-3 QC Sample: L1519590-06 Client ID: D8 0-6' COMP						
Cyanide, Reactive	ND	ND	mg/kg	NC		40

Project Name: FAN PIER PARCEL D

Lab Number: L1519590

Project Number: 4426.9.1D

Report Date: 08/23/15

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 08/14/2015 21:57

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1519590-01A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1519590-01B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1519590-01C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1519590-02A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519590-03A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1519590-03B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1519590-03C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1519590-04A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519590-05A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1519590-05B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1519590-05C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D**Project Number:** 4426.9.1D**Lab Number:** L1519590**Report Date:** 08/23/15**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1519590-06A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)

**Container Comments**

L1519590-02A

\*Values in parentheses indicate holding time in days

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

## 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

#### **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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519590  
**Report Date:** 08/23/15

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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, NO<sub>2</sub>, NO<sub>3</sub>.

**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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

# CHAIN OF CUSTODY

PAGE 1 OF 1



Westborough, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

Mansfield, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

## Project Information

Project Name: Fan Pier Parcel D

Project Location: Boston, MA

Project #: 4426.9.1D

Project Manager: Ben Downing/Peter DeChaves

ALPHA Quote #: Fan Pier Pricing

## Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: 6178681420

Fax: 6178681423

Email: bdowning@mcphailgeo.com

These samples have been Previously analyzed by Alpha

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT

\*Denotes obtain total solid sample from composite sample.

\*\*Minus VOCs

Date Rec'd in Lab: 8/14/15

ALPHA Job #: L1519590

## Report Information Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

## Billing Information

Same as Client info PO #:

## Regulatory Requirements/Report Limits

State/Fed Program: MA Criteria: RCS-1

## MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

## ANALYSIS

VOCs (8260)*	Soil Management Package IV**																	TOTAL # BOTTLES	
		SAMPLE HANDLING																	
																		Filtration <input type="checkbox"/> Done <input checked="" type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)	
																		Sample Specific Comments	

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
19590-015	D14 S12 22-24'	8/14/15	7:30	S	MGS
026	D14 18-24' Comp		7:30		
035	D14 S17 35-37'		10:15		
047	D14 27-42' CLAY		10:15		
055	D8 S1 0-2'		12:00		
066	D8 0-6' Comp		12:00		

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-	-

IS YOUR PROJECT MA MCP or CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	8/14/15 14:00	<i>[Signature]</i>	8/14/15 14:00
<i>[Signature]</i>	8/14/15 18:16	<i>[Signature]</i>	8/14/15 18:16

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

7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1519590

Instrument ID: Voall10.i      Calibration Date: 20-AUG-2015      Time: 20:34

Lab File ID: 0820B02      Init. Calib. Date(s): 12-AUG-2      12-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 13:32      16:49

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
=====	=====	=====	=====	=====	=====	
dichlorodifluoromethane	.22596	.25559	.1	13	20	
chloromethane	.25549	.27505	.1	8	20	
vinyl chloride	.32994	.33998	.1	3	20	
bromomethane	100	95.581	.1	-4	20	
chloroethane	100	158	.1	58	20	F
trichlorofluoromethane	.37899	.36233	.1	-4	20	
ethyl ether	.14897	.14235	.05	-4	20	
1,1,-dichloroethene	.22393	.2086	.1	-7	20	
carbon disulfide	.73895	.72943	.1	-1	20	
methylene chloride	.27994	.26139	.1	-7	20	
acetone	.0704	.09475	.1	35	20	F
trans-1,2-dichloroethene	.26098	.2398	.1	-8	20	
methyl tert butyl ether	.76577	.63007	.1	-18	20	
Diisopropyl Ether	.83503	.86859	.05	4	20	
1,1-dichloroethane	.47594	.47721	.2	0	20	
Ethyl-Tert-Butyl-Ether	.828	.74233	.05	-10	20	
cis-1,2-dichloroethene	.28419	.26053	.1	-8	20	
2,2-dichloropropane	.37174	.3661	.05	-2	20	
bromochloromethane	.11572	.10889	.05	-6	20	
chloroform	.46186	.45102	.2	-2	20	
carbontetrachloride	.32441	.30663	.1	-5	20	
tetrahydrofuran	.08034	.06781	.05	-16	20	
1,1,1-trichloroethane	.393	.37159	.1	-5	20	
2-butanone	.11061	.11496	.1	4	20	
1,1-dichloropropene	.34462	.34318	.05	0	20	
benzene	1.0475	1.0206	.5	-3	20	
Tertiary-Amyl Methyl Ether	.75742	.61361	.05	-19	20	
1,2-dichloroethane	.35229	.33772	.1	-4	20	
trichloroethene	.26232	.24588	.2	-6	20	
dibromomethane	.1408	.12746	.05	-9	20	
1,2-dichloropropane	.25448	.25336	.1	0	20	
bromodichloromethane	.3399	.31824	.2	-6	20	
1,4-dioxane	.00296	.00192	.05	-35	20	F
cis-1,3-dichloropropene	.41271	.38344	.2	-7	20	
toluene	.96071	.93108	.4	-3	20	
4-methyl-2-pentanone	.08998	.06402	.1	-29	20	F
tetrachloroethene	.34468	.29663	.2	-14	20	
trans-1,3-dichloropropene	.51535	.50031	.1	-3	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1519590

Instrument ID: Voal10.i      Calibration Date: 20-AUG-2015      Time: 20:34

Lab File ID: 0820B02      Init. Calib. Date(s): 12-AUG-2      12-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 13:32      16:49

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
=====	=====	=====	=====	=====	=====	
1,1,2-trichloroethane	.25723	.24598	.1	-4	20	
chlorodibromomethane	.33402	.29005	.1	-13	20	
1,3-dichloropropane	.54606	.52839	.05	-3	20	
1,2-dibromoethane	.29183	.2565	.1	-12	20	
2-hexanone	.2266	.18023	.1	-20	20	F
chlorobenzene	1.0313	.93765	.5	-9	20	
ethyl benzene	1.7760	1.7254	.1	-3	20	
1,1,1,2-tetrachloroethane	.34262	.30306	.05	-12	20	
p/m xylene	.71267	.65805	.1	-8	20	
o xylene	.68551	.61569	.3	-10	20	
styrene	1.1763	1.0064	.3	-14	20	
bromoform	100	72.861	.1	-27	20	F
isopropylbenzene	3.5063	3.3951	.1	-3	20	
bromobenzene	.79683	.69562	.05	-13	20	
n-propylbenzene	4.1574	4.2237	.05	2	20	
1,1,2,2,-tetrachloroethane	.80166	.7597	.3	-5	20	
2-chlorotoluene	2.5697	2.6119	.05	2	20	
1,3,5-trimethylbenzene	3.0113	2.8933	.05	-4	20	
1,2,3-trichloropropane	.68038	.6413	.05	-6	20	
4-chlorotoluene	2.5402	2.5643	.05	1	20	
tert-butylbenzene	2.5446	2.4004	.05	-6	20	
1,2,4-trimethylbenzene	2.9967	2.8577	.05	-5	20	
sec-butylbenzene	3.7765	3.7358	.05	-1	20	
p-isopropyltoluene	3.3116	3.0796	.05	-7	20	
1,3-dichlorobenzene	1.5860	1.4470	.6	-9	20	
1,4-dichlorobenzene	1.6084	1.4498	.5	-10	20	
n-butylbenzene	2.9757	3.0893	.05	4	20	
1,2-dichlorobenzene	1.4693	1.2965	.4	-12	20	
1,2-dibromo-3-chloropropane	.11334	.07677	.05	-32	20	F
hexachlorobutadiene	.45751	.37391	.05	-18	20	
1,2,4-trichlorobenzene	.98141	.7964	.2	-19	20	
naphthalene	2.6149	2.0247	.05	-23	20	F
1,2,3-trichlorobenzene	.92497	.73013	.05	-21	20	F
=====	=====	=====	=====	=====	=====	
dibromofluoromethane	.23562	.22438	.05	-5	30	
1,2-dichloroethane-d4	.26988	.28031	.05	4	30	
toluene-d8	1.3455	1.4125	.05	5	30	
4-bromofluorobenzene	.96878	1.0439	.05	8	30	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1519590

Instrument ID: Voall10.i      Calibration Date: 21-AUG-2015      Time: 19:30

Lab File ID: 0821N02      Init. Calib. Date(s): 12-AUG-2      12-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 13:32      16:49

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.22596	.28654	.1	27	20	F
chloromethane	.25549	.34416	.1	35	20	F
vinyl chloride	.32994	.39777	.1	21	20	F
bromomethane	.100	.126	.1	26	20	F
chloroethane	.100	.176	.1	76	20	F
trichlorofluoromethane	.37899	.41521	.1	10	20	
ethyl ether	.14897	.14694	.05	-1	20	
1,1,-dichloroethene	.22393	.22473	.1	0	20	
carbon disulfide	.73895	.8298	.1	12	20	
methylene chloride	.27994	.28614	.1	2	20	
acetone	.0704	.10013	.1	42	20	F
trans-1,2-dichloroethene	.26098	.25734	.1	-1	20	
methyl tert butyl ether	.76577	.65591	.1	-14	20	
Diisopropyl Ether	.83503	.90699	.05	9	20	
1,1-dichloroethane	.47594	.54185	.2	14	20	
Ethyl-Tert-Butyl-Ether	.828	.76977	.05	-7	20	
cis-1,2-dichloroethene	.28419	.26934	.1	-5	20	
2,2-dichloropropane	.37174	.40162	.05	8	20	
bromochloromethane	.11572	.11312	.05	-2	20	
chloroform	.46186	.50286	.2	9	20	
carbontetrachloride	.32441	.34397	.1	6	20	
tetrahydrofuran	.08034	.07635	.05	-5	20	
1,1,1-trichloroethane	.393	.41201	.1	5	20	
2-butanone	.11061	.13195	.1	19	20	
1,1-dichloropropene	.34462	.36385	.05	6	20	
benzene	1.0475	1.1112	.5	6	20	
Tertiary-Amyl Methyl Ether	.75742	.62983	.05	-17	20	
1,2-dichloroethane	.35229	.39725	.1	13	20	
trichloroethene	.26232	.27759	.2	6	20	
dibromomethane	.1408	.1426	.05	1	20	
1,2-dichloropropane	.25448	.27294	.1	7	20	
bromodichloromethane	.3399	.36232	.2	7	20	
1,4-dioxane	.00296	.00213	.05	-28	20	F
cis-1,3-dichloropropene	.41271	.40228	.2	-3	20	
toluene	.96071	.97594	.4	2	20	
4-methyl-2-pentanone	.08998	.0635	.1	-29	20	F
tetrachloroethene	.34468	.30718	.2	-11	20	
trans-1,3-dichloropropene	.51535	.52749	.1	2	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1519590

Instrument ID: Voal10.i      Calibration Date: 21-AUG-2015      Time: 19:30

Lab File ID: 0821N02      Init. Calib. Date(s): 12-AUG-2      12-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 13:32      16:49

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
1,1,2-trichloroethane	.25723	.27511	.1	7	20	
chlorodibromomethane	.33402	.31411	.1	-6	20	
1,3-dichloropropane	.54606	.56328	.05	3	20	
1,2-dibromoethane	.29183	.26755	.1	-8	20	
2-hexanone	.2266	.17108	.1	-24	20	F
chlorobenzene	1.0313	.9938	.5	-4	20	
ethyl benzene	1.7760	1.8179	.1	2	20	
1,1,1,2-tetrachloroethane	.34262	.33046	.05	-4	20	
p/m xylene	.71267	.69978	.1	-2	20	
o xylene	.68551	.64179	.3	-6	20	
styrene	1.1763	1.1036	.3	-6	20	
bromoform	100	79.084	.1	-21	20	F
isopropylbenzene	3.5063	3.2752	.1	-7	20	
bromobenzene	.79683	.68868	.05	-14	20	
n-propylbenzene	4.1574	4.3617	.05	5	20	
1,1,2,2,-tetrachloroethane	.80166	.84615	.3	6	20	
2-chlorotoluene	2.5697	2.6915	.05	5	20	
1,3,5-trimethylbenzene	3.0113	3.0039	.05	0	20	
1,2,3-trichloropropane	.68038	.72333	.05	6	20	
4-chlorotoluene	2.5402	2.6683	.05	5	20	
tert-butylbenzene	2.5446	2.3622	.05	-7	20	
1,2,4-trimethylbenzene	2.9967	2.9447	.05	-2	20	
sec-butylbenzene	3.7765	3.8516	.05	2	20	
p-isopropyltoluene	3.3116	3.1023	.05	-6	20	
1,3-dichlorobenzene	1.5860	1.5137	.6	-5	20	
1,4-dichlorobenzene	1.6084	1.5207	.5	-5	20	
n-butylbenzene	2.9757	3.3413	.05	12	20	
1,2-dichlorobenzene	1.4693	1.3555	.4	-8	20	
1,2-dibromo-3-chloropropane	.11334	.08092	.05	-29	20	F
hexachlorobutadiene	.45751	.3567	.05	-22	20	F
1,2,4-trichlorobenzene	.98141	.77332	.2	-21	20	F
naphthalene	2.6149	1.9975	.05	-24	20	F
1,2,3-trichlorobenzene	.92497	.74234	.05	-20	20	
dibromofluoromethane	.23562	.24721	.05	5	30	
1,2-dichloroethane-d4	.26988	.31599	.05	17	30	
toluene-d8	1.3455	1.4164	.05	5	30	
4-bromofluorobenzene	.96878	.96371	.05	-1	30	

FORM VII MCP-8260HLW-10



7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1519590

Instrument ID: Voall0.i      Calibration Date: 22-AUG-2015      Time: 07:20

Lab File ID: 0822A02      Init. Calib. Date(s): 12-AUG-2      12-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 13:32      16:49

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
=====	=====	=====	=====	=====	=====	
dichlorodifluoromethane	.22596	.29537	.1	31	20	F
chloromethane	.25549	.34063	.1	33	20	F
vinyl chloride	.32994	.3855	.1	17	20	
bromomethane	100	130	.1	30	20	F
chloroethane	100	178	.1	78	20	F
trichlorofluoromethane	.37899	.4119	.1	9	20	
ethyl ether	.14897	.15308	.05	3	20	
1,1,-dichloroethene	.22393	.21651	.1	-3	20	
carbon disulfide	.73895	.81868	.1	11	20	
methylene chloride	.27994	.29011	.1	4	20	
acetone	.0704	.09926	.1	41	20	F
trans-1,2-dichloroethene	.26098	.25274	.1	-3	20	
methyl tert butyl ether	.76577	.67026	.1	-12	20	
Diisopropyl Ether	.83503	.93304	.05	12	20	
1,1-dichloroethane	.47594	.54515	.2	15	20	
Ethyl-Tert-Butyl-Ether	.828	.77779	.05	-6	20	
cis-1,2-dichloroethene	.28419	.27451	.1	-3	20	
2,2-dichloropropane	.37174	.39563	.05	6	20	
bromochloromethane	.11572	.12205	.05	5	20	
chloroform	.46186	.51251	.2	11	20	
carbontetrachloride	.32441	.33242	.1	2	20	
tetrahydrofuran	.08034	.07795	.05	-3	20	
1,1,1-trichloroethane	.393	.40864	.1	4	20	
2-butanone	.11061	.11422	.1	3	20	
1,1-dichloropropene	.34462	.34646	.05	1	20	
benzene	1.0475	1.1152	.5	6	20	
Tertiary-Amyl Methyl Ether	.75742	.63644	.05	-16	20	
1,2-dichloroethane	.35229	.4089	.1	16	20	
trichloroethene	.26232	.27362	.2	4	20	
dibromomethane	.1408	.14786	.05	5	20	
1,2-dichloropropane	.25448	.27941	.1	10	20	
bromodichloromethane	.3399	.37123	.2	9	20	
1,4-dioxane	.00296	.002	.05	-32	20	F
cis-1,3-dichloropropene	.41271	.41116	.2	0	20	
toluene	.96071	.97663	.4	2	20	
4-methyl-2-pentanone	.08998	.06113	.1	-32	20	F
tetrachloroethene	.34468	.29349	.2	-15	20	
trans-1,3-dichloropropene	.51535	.53329	.1	3	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1519590

Instrument ID: Voal10.i      Calibration Date: 22-AUG-2015      Time: 07:20

Lab File ID: 0822A02      Init. Calib. Date(s): 12-AUG-2      12-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 13:32      16:49

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
1,1,2-trichloroethane	.25723	.28569	.1	11	20	
chlorodibromomethane	.33402	.32603	.1	-2	20	
1,3-dichloropropane	.54606	.57846	.05	6	20	
1,2-dibromoethane	.29183	.27691	.1	-5	20	
2-hexanone	.2266	.17361	.1	-23	20	F
chlorobenzene	1.0313	1.0095	.5	-2	20	
ethyl benzene	1.7760	1.8105	.1	2	20	
1,1,1,2-tetrachloroethane	.34262	.339	.05	-1	20	
p/m xylene	.71267	.69143	.1	-3	20	
o xylene	.68551	.63976	.3	-7	20	
styrene	1.1763	1.1222	.3	-5	20	
bromoform	100	79.134	.1	-21	20	F
isopropylbenzene	3.5063	3.1551	.1	-10	20	
bromobenzene	.79683	.68625	.05	-14	20	
n-propylbenzene	4.1574	4.2246	.05	2	20	
1,1,2,2,-tetrachloroethane	.80166	.8487	.3	6	20	
2-chlorotoluene	2.5697	2.6946	.05	5	20	
1,3,5-trimethylbenzene	3.0113	2.9630	.05	-2	20	
1,2,3-trichloropropane	.68038	.73042	.05	7	20	
4-chlorotoluene	2.5402	2.6555	.05	5	20	
tert-butylbenzene	2.5446	2.2692	.05	-11	20	
1,2,4-trimethylbenzene	2.9967	2.9016	.05	-3	20	
sec-butylbenzene	3.7765	3.7001	.05	-2	20	
p-isopropyltoluene	3.3116	3.0089	.05	-9	20	
1,3-dichlorobenzene	1.5860	1.5114	.6	-5	20	
1,4-dichlorobenzene	1.6084	1.5252	.5	-5	20	
n-butylbenzene	2.9757	3.2465	.05	9	20	
1,2-dichlorobenzene	1.4693	1.3785	.4	-6	20	
1,2-dibromo-3-chloropropane	.11334	.08099	.05	-29	20	F
hexachlorobutadiene	.45751	.35649	.05	-22	20	F
1,2,4-trichlorobenzene	.98141	.79108	.2	-19	20	
naphthalene	2.6149	1.9766	.05	-24	20	F
1,2,3-trichlorobenzene	.92497	.74632	.05	-19	20	
dibromofluoromethane	.23562	.24771	.05	5	30	
1,2-dichloroethane-d4	.26988	.31904	.05	18	30	
toluene-d8	1.3455	1.4116	.05	5	30	
4-bromofluorobenzene	.96878	.94057	.05	-3	30	

FORM VII MCP-8260HLW-10



## ANALYTICAL REPORT

Lab Number:	L1519838
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	08/25/15

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).

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



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1519838-01	D-11 12'-18' COMP	SOIL	BOSTON, MA	08/18/15 14:00	08/18/15
L1519838-02	D-11 S-9 16'-18'	SOIL	BOSTON, MA	08/18/15 14:00	08/18/15
L1519838-03	D-11 18'-24' COMP	SOIL	BOSTON, MA	08/18/15 14:00	08/18/15
L1519838-04	D-11 S-10 18'-20'	SOIL	BOSTON, MA	08/18/15 14:00	08/18/15
L1519838-05	D-11 28'-42' COMP	SOIL	BOSTON, MA	08/18/15 14:00	08/18/15
L1519838-06	D-11 S-15 28'-30'	SOIL	BOSTON, MA	08/18/15 14:00	08/18/15
L1519838-07	D-3/D-11/D-15/D-16 SAND COMP	SOIL	BOSTON, MA	08/18/15 14:00	08/18/15
L1519838-08	D-11 S-13A 25'-26'	SOIL	BOSTON, MA	08/18/15 14:00	08/18/15
L1519838-09	D-3/D-11/D-14/D-15 ORG COMP	SOIL	BOSTON, MA	08/18/15 14:00	08/18/15
L1519838-10	D-11 S-13 24'-25'	SOIL	BOSTON, MA	08/18/15 14:00	08/18/15
L1519838-11	D-8 18'-24' COMP	SOIL	BOSTON, MA	08/18/15 14:00	08/18/15
L1519838-12	D-8 S-11 18'-20'	SOIL	BOSTON, MA	08/18/15 14:00	08/18/15
L1519838-13	D-8 30'-42' COMP	SOIL	BOSTON, MA	08/18/15 14:00	08/18/15
L1519838-14	D-8 S-18 35'-37'	SOIL	BOSTON, MA	08/18/15 14:00	08/18/15

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

### 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.

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**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

The samples submitted for Volatile Organics were received without raw soil for the Total Solids analysis. The Total Solids results from the corresponding composite samples were utilized in the dry weight calculation of the Volatile Organics data.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1519838-02,-04,-06,-08,-10,-12, and -14, did not meet the method required minimum response factor on the lowest calibration standard for acetone (0.08477), 2-butanone (0.07536), 4-methyl-2-pentanone (0.05357), and 1,4-dioxane (0.00154), as well as the average response factor for acetone, 2-butanone, 4-methyl-2-pentanone, and 1,4-dioxane.

The continuing calibration standard, associated with L1519838-02,-04,-06,-08,-10,-12, and -14, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

##### Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

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:

 Lisa Westerlind

Title: Technical Director/Representative

Date: 08/25/15

# ORGANICS



# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-02  
**Client ID:** D-11 S-9 16'-18'  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil  
**Analytical Method:** 97,8260C  
**Analytical Date:** 08/24/15 11:51  
**Analyst:** BN  
**Percent Solids:** 80%

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	15	--	1
1,1-Dichloroethane	ND		ug/kg	2.2	--	1
Chloroform	ND		ug/kg	2.2	--	1
Carbon tetrachloride	ND		ug/kg	1.5	--	1
1,2-Dichloropropane	ND		ug/kg	5.2	--	1
Dibromochloromethane	ND		ug/kg	1.5	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.2	--	1
Tetrachloroethene	ND		ug/kg	1.5	--	1
Chlorobenzene	ND		ug/kg	1.5	--	1
Trichlorofluoromethane	ND		ug/kg	5.9	--	1
1,2-Dichloroethane	ND		ug/kg	1.5	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.5	--	1
Bromodichloromethane	ND		ug/kg	1.5	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.5	--	1
1,1-Dichloropropene	ND		ug/kg	5.9	--	1
Bromoform	ND		ug/kg	5.9	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Benzene	ND		ug/kg	1.5	--	1
Toluene	ND		ug/kg	2.2	--	1
Ethylbenzene	ND		ug/kg	1.5	--	1
Chloromethane	ND		ug/kg	5.9	--	1
Bromomethane	ND		ug/kg	3.0	--	1
Vinyl chloride	ND		ug/kg	3.0	--	1
Chloroethane	ND		ug/kg	3.0	--	1
1,1-Dichloroethene	ND		ug/kg	1.5	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.2	--	1
Trichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.9	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-02  
 Client ID: D-11 S-9 16'-18'  
 Sample Location: BOSTON, MA

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	5.9	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.9	--	1
Methyl tert butyl ether	ND		ug/kg	3.0	--	1
p/m-Xylene	ND		ug/kg	3.0	--	1
o-Xylene	ND		ug/kg	3.0	--	1
Xylenes, Total	ND		ug/kg	3.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.5	--	1
Dibromomethane	ND		ug/kg	5.9	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.9	--	1
Styrene	ND		ug/kg	3.0	--	1
Dichlorodifluoromethane	ND		ug/kg	15	--	1
Acetone	ND		ug/kg	53	--	1
Carbon disulfide	ND		ug/kg	5.9	--	1
Methyl ethyl ketone	ND		ug/kg	15	--	1
Methyl isobutyl ketone	ND		ug/kg	15	--	1
2-Hexanone	ND		ug/kg	15	--	1
Bromochloromethane	ND		ug/kg	5.9	--	1
Tetrahydrofuran	ND		ug/kg	5.9	--	1
2,2-Dichloropropane	ND		ug/kg	7.4	--	1
1,2-Dibromoethane	ND		ug/kg	5.9	--	1
1,3-Dichloropropane	ND		ug/kg	5.9	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Bromobenzene	ND		ug/kg	7.4	--	1
n-Butylbenzene	ND		ug/kg	1.5	--	1
sec-Butylbenzene	ND		ug/kg	1.5	--	1
tert-Butylbenzene	ND		ug/kg	5.9	--	1
o-Chlorotoluene	ND		ug/kg	5.9	--	1
p-Chlorotoluene	ND		ug/kg	5.9	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.9	--	1
Hexachlorobutadiene	ND		ug/kg	5.9	--	1
Isopropylbenzene	ND		ug/kg	1.5	--	1
p-Isopropyltoluene	ND		ug/kg	1.5	--	1
Naphthalene	ND		ug/kg	5.9	--	1
n-Propylbenzene	ND		ug/kg	1.5	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	5.9	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.9	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.9	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.9	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-02  
**Client ID:** D-11 S-9 16'-18'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	7.4	--	1
Diisopropyl Ether	ND		ug/kg	5.9	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.9	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.9	--	1
1,4-Dioxane	ND		ug/kg	59	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	100		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-04  
 Client ID: D-11 S-10 18'-20'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/24/15 12:16  
 Analyst: BN  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	14	--	1
1,1-Dichloroethane	ND		ug/kg	2.0	--	1
Chloroform	ND		ug/kg	2.0	--	1
Carbon tetrachloride	ND		ug/kg	1.4	--	1
1,2-Dichloropropane	ND		ug/kg	4.7	--	1
Dibromochloromethane	ND		ug/kg	1.4	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.0	--	1
Tetrachloroethene	ND		ug/kg	1.4	--	1
Chlorobenzene	ND		ug/kg	1.4	--	1
Trichlorofluoromethane	ND		ug/kg	5.4	--	1
1,2-Dichloroethane	ND		ug/kg	1.4	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.4	--	1
Bromodichloromethane	ND		ug/kg	1.4	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.4	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.4	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.4	--	1
1,1-Dichloropropene	ND		ug/kg	5.4	--	1
Bromoform	ND		ug/kg	5.4	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.4	--	1
Benzene	ND		ug/kg	1.4	--	1
Toluene	ND		ug/kg	2.0	--	1
Ethylbenzene	ND		ug/kg	1.4	--	1
Chloromethane	ND		ug/kg	5.4	--	1
Bromomethane	ND		ug/kg	2.7	--	1
Vinyl chloride	ND		ug/kg	2.7	--	1
Chloroethane	ND		ug/kg	2.7	--	1
1,1-Dichloroethene	ND		ug/kg	1.4	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.0	--	1
Trichloroethene	ND		ug/kg	1.4	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.4	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-04  
 Client ID: D-11 S-10 18'-20'  
 Sample Location: BOSTON, MA

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	5.4	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.4	--	1
Methyl tert butyl ether	ND		ug/kg	2.7	--	1
p/m-Xylene	ND		ug/kg	2.7	--	1
o-Xylene	ND		ug/kg	2.7	--	1
Xylenes, Total	ND		ug/kg	2.7	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.4	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.4	--	1
Dibromomethane	ND		ug/kg	5.4	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.4	--	1
Styrene	ND		ug/kg	2.7	--	1
Dichlorodifluoromethane	ND		ug/kg	14	--	1
Acetone	ND		ug/kg	49	--	1
Carbon disulfide	ND		ug/kg	5.4	--	1
Methyl ethyl ketone	ND		ug/kg	14	--	1
Methyl isobutyl ketone	ND		ug/kg	14	--	1
2-Hexanone	ND		ug/kg	14	--	1
Bromochloromethane	ND		ug/kg	5.4	--	1
Tetrahydrofuran	ND		ug/kg	5.4	--	1
2,2-Dichloropropane	ND		ug/kg	6.8	--	1
1,2-Dibromoethane	ND		ug/kg	5.4	--	1
1,3-Dichloropropane	ND		ug/kg	5.4	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.4	--	1
Bromobenzene	ND		ug/kg	6.8	--	1
n-Butylbenzene	ND		ug/kg	1.4	--	1
sec-Butylbenzene	ND		ug/kg	1.4	--	1
tert-Butylbenzene	ND		ug/kg	5.4	--	1
o-Chlorotoluene	ND		ug/kg	5.4	--	1
p-Chlorotoluene	ND		ug/kg	5.4	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.4	--	1
Hexachlorobutadiene	ND		ug/kg	5.4	--	1
Isopropylbenzene	ND		ug/kg	1.4	--	1
p-Isopropyltoluene	ND		ug/kg	1.4	--	1
Naphthalene	ND		ug/kg	5.4	--	1
n-Propylbenzene	ND		ug/kg	1.4	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	5.4	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.4	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.4	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.4	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-04  
 Client ID: D-11 S-10 18'-20'  
 Sample Location: BOSTON, MA

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	6.8	--	1
Diisopropyl Ether	ND		ug/kg	5.4	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.4	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.4	--	1
1,4-Dioxane	ND		ug/kg	54	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	100		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-06  
 Client ID: D-11 S-15 28'-30'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/24/15 12:41  
 Analyst: BN  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	15	--	1
1,1-Dichloroethane	ND		ug/kg	2.2	--	1
Chloroform	ND		ug/kg	2.2	--	1
Carbon tetrachloride	ND		ug/kg	1.5	--	1
1,2-Dichloropropane	ND		ug/kg	5.2	--	1
Dibromochloromethane	ND		ug/kg	1.5	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.2	--	1
Tetrachloroethene	ND		ug/kg	1.5	--	1
Chlorobenzene	ND		ug/kg	1.5	--	1
Trichlorofluoromethane	ND		ug/kg	6.0	--	1
1,2-Dichloroethane	ND		ug/kg	1.5	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.5	--	1
Bromodichloromethane	ND		ug/kg	1.5	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.5	--	1
1,1-Dichloropropene	ND		ug/kg	6.0	--	1
Bromoform	ND		ug/kg	6.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Benzene	ND		ug/kg	1.5	--	1
Toluene	ND		ug/kg	2.2	--	1
Ethylbenzene	ND		ug/kg	1.5	--	1
Chloromethane	ND		ug/kg	6.0	--	1
Bromomethane	ND		ug/kg	3.0	--	1
Vinyl chloride	ND		ug/kg	3.0	--	1
Chloroethane	ND		ug/kg	3.0	--	1
1,1-Dichloroethene	ND		ug/kg	1.5	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.2	--	1
Trichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichlorobenzene	ND		ug/kg	6.0	--	1



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-06  
**Client ID:** D-11 S-15 28'-30'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	6.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	6.0	--	1
Methyl tert butyl ether	ND		ug/kg	3.0	--	1
p/m-Xylene	ND		ug/kg	3.0	--	1
o-Xylene	ND		ug/kg	3.0	--	1
Xylenes, Total	ND		ug/kg	3.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.5	--	1
Dibromomethane	ND		ug/kg	6.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	6.0	--	1
Styrene	ND		ug/kg	3.0	--	1
Dichlorodifluoromethane	ND		ug/kg	15	--	1
Acetone	ND		ug/kg	54	--	1
Carbon disulfide	ND		ug/kg	6.0	--	1
Methyl ethyl ketone	ND		ug/kg	15	--	1
Methyl isobutyl ketone	ND		ug/kg	15	--	1
2-Hexanone	ND		ug/kg	15	--	1
Bromochloromethane	ND		ug/kg	6.0	--	1
Tetrahydrofuran	ND		ug/kg	6.0	--	1
2,2-Dichloropropane	ND		ug/kg	7.4	--	1
1,2-Dibromoethane	ND		ug/kg	6.0	--	1
1,3-Dichloropropane	ND		ug/kg	6.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Bromobenzene	ND		ug/kg	7.4	--	1
n-Butylbenzene	ND		ug/kg	1.5	--	1
sec-Butylbenzene	ND		ug/kg	1.5	--	1
tert-Butylbenzene	ND		ug/kg	6.0	--	1
o-Chlorotoluene	ND		ug/kg	6.0	--	1
p-Chlorotoluene	ND		ug/kg	6.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	6.0	--	1
Hexachlorobutadiene	ND		ug/kg	6.0	--	1
Isopropylbenzene	ND		ug/kg	1.5	--	1
p-Isopropyltoluene	ND		ug/kg	1.5	--	1
Naphthalene	ND		ug/kg	6.0	--	1
n-Propylbenzene	ND		ug/kg	1.5	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	6.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	6.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	6.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	6.0	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-06  
 Client ID: D-11 S-15 28'-30'  
 Sample Location: BOSTON, MA

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	7.4	--	1
Diisopropyl Ether	ND		ug/kg	6.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	6.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	6.0	--	1
1,4-Dioxane	ND		ug/kg	60	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	101		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-08  
 Client ID: D-11 S-13A 25'-26'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/24/15 13:07  
 Analyst: BN  
 Percent Solids: 81%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	20	--	1
1,1-Dichloroethane	ND		ug/kg	3.0	--	1
Chloroform	ND		ug/kg	3.0	--	1
Carbon tetrachloride	ND		ug/kg	2.0	--	1
1,2-Dichloropropane	ND		ug/kg	7.0	--	1
Dibromochloromethane	ND		ug/kg	2.0	--	1
1,1,2-Trichloroethane	ND		ug/kg	3.0	--	1
Tetrachloroethene	ND		ug/kg	2.0	--	1
Chlorobenzene	ND		ug/kg	2.0	--	1
Trichlorofluoromethane	ND		ug/kg	8.0	--	1
1,2-Dichloroethane	ND		ug/kg	2.0	--	1
1,1,1-Trichloroethane	ND		ug/kg	2.0	--	1
Bromodichloromethane	ND		ug/kg	2.0	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.0	--	1
cis-1,3-Dichloropropene	ND		ug/kg	2.0	--	1
1,3-Dichloropropene, Total	ND		ug/kg	2.0	--	1
1,1-Dichloropropene	ND		ug/kg	8.0	--	1
Bromoform	ND		ug/kg	8.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	2.0	--	1
Benzene	ND		ug/kg	2.0	--	1
Toluene	ND		ug/kg	3.0	--	1
Ethylbenzene	ND		ug/kg	2.0	--	1
Chloromethane	ND		ug/kg	8.0	--	1
Bromomethane	ND		ug/kg	4.0	--	1
Vinyl chloride	ND		ug/kg	4.0	--	1
Chloroethane	ND		ug/kg	4.0	--	1
1,1-Dichloroethene	ND		ug/kg	2.0	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.0	--	1
Trichloroethene	ND		ug/kg	2.0	--	1
1,2-Dichlorobenzene	ND		ug/kg	8.0	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-08  
 Client ID: D-11 S-13A 25'-26'  
 Sample Location: BOSTON, MA

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	8.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	8.0	--	1
Methyl tert butyl ether	ND		ug/kg	4.0	--	1
p/m-Xylene	ND		ug/kg	4.0	--	1
o-Xylene	ND		ug/kg	4.0	--	1
Xylenes, Total	ND		ug/kg	4.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.0	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.0	--	1
Dibromomethane	ND		ug/kg	8.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	8.0	--	1
Styrene	ND		ug/kg	4.0	--	1
Dichlorodifluoromethane	ND		ug/kg	20	--	1
Acetone	ND		ug/kg	72	--	1
Carbon disulfide	ND		ug/kg	8.0	--	1
Methyl ethyl ketone	ND		ug/kg	20	--	1
Methyl isobutyl ketone	ND		ug/kg	20	--	1
2-Hexanone	ND		ug/kg	20	--	1
Bromochloromethane	ND		ug/kg	8.0	--	1
Tetrahydrofuran	ND		ug/kg	8.0	--	1
2,2-Dichloropropane	ND		ug/kg	9.9	--	1
1,2-Dibromoethane	ND		ug/kg	8.0	--	1
1,3-Dichloropropane	ND		ug/kg	8.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	2.0	--	1
Bromobenzene	ND		ug/kg	9.9	--	1
n-Butylbenzene	ND		ug/kg	2.0	--	1
sec-Butylbenzene	ND		ug/kg	2.0	--	1
tert-Butylbenzene	ND		ug/kg	8.0	--	1
o-Chlorotoluene	ND		ug/kg	8.0	--	1
p-Chlorotoluene	ND		ug/kg	8.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	8.0	--	1
Hexachlorobutadiene	ND		ug/kg	8.0	--	1
Isopropylbenzene	ND		ug/kg	2.0	--	1
p-Isopropyltoluene	ND		ug/kg	2.0	--	1
Naphthalene	ND		ug/kg	8.0	--	1
n-Propylbenzene	ND		ug/kg	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	8.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	8.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	8.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	8.0	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-08  
 Client ID: D-11 S-13A 25'-26'  
 Sample Location: BOSTON, MA

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	9.9	--	1
Diisopropyl Ether	ND		ug/kg	8.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	8.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	8.0	--	1
1,4-Dioxane	ND		ug/kg	80	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	99		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-10  
 Client ID: D-11 S-13 24'-25'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/24/15 13:32  
 Analyst: BN  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	15	--	1
1,1-Dichloroethane	ND		ug/kg	2.3	--	1
Chloroform	ND		ug/kg	2.3	--	1
Carbon tetrachloride	ND		ug/kg	1.5	--	1
1,2-Dichloropropane	ND		ug/kg	5.3	--	1
Dibromochloromethane	ND		ug/kg	1.5	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.3	--	1
Tetrachloroethene	ND		ug/kg	1.5	--	1
Chlorobenzene	ND		ug/kg	1.5	--	1
Trichlorofluoromethane	ND		ug/kg	6.1	--	1
1,2-Dichloroethane	ND		ug/kg	1.5	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.5	--	1
Bromodichloromethane	ND		ug/kg	1.5	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.5	--	1
1,1-Dichloropropene	ND		ug/kg	6.1	--	1
Bromoform	ND		ug/kg	6.1	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Benzene	ND		ug/kg	1.5	--	1
Toluene	ND		ug/kg	2.3	--	1
Ethylbenzene	ND		ug/kg	1.5	--	1
Chloromethane	ND		ug/kg	6.1	--	1
Bromomethane	ND		ug/kg	3.0	--	1
Vinyl chloride	ND		ug/kg	3.0	--	1
Chloroethane	ND		ug/kg	3.0	--	1
1,1-Dichloroethene	ND		ug/kg	1.5	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.3	--	1
Trichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichlorobenzene	ND		ug/kg	6.1	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-10  
**Client ID:** D-11 S-13 24'-25'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	6.1	--	1
1,4-Dichlorobenzene	ND		ug/kg	6.1	--	1
Methyl tert butyl ether	ND		ug/kg	3.0	--	1
p/m-Xylene	ND		ug/kg	3.0	--	1
o-Xylene	ND		ug/kg	3.0	--	1
Xylenes, Total	ND		ug/kg	3.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.5	--	1
Dibromomethane	ND		ug/kg	6.1	--	1
1,2,3-Trichloropropane	ND		ug/kg	6.1	--	1
Styrene	ND		ug/kg	3.0	--	1
Dichlorodifluoromethane	ND		ug/kg	15	--	1
Acetone	ND		ug/kg	55	--	1
Carbon disulfide	6.5		ug/kg	6.1	--	1
Methyl ethyl ketone	ND		ug/kg	15	--	1
Methyl isobutyl ketone	ND		ug/kg	15	--	1
2-Hexanone	ND		ug/kg	15	--	1
Bromochloromethane	ND		ug/kg	6.1	--	1
Tetrahydrofuran	ND		ug/kg	6.1	--	1
2,2-Dichloropropane	ND		ug/kg	7.6	--	1
1,2-Dibromoethane	ND		ug/kg	6.1	--	1
1,3-Dichloropropane	ND		ug/kg	6.1	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Bromobenzene	ND		ug/kg	7.6	--	1
n-Butylbenzene	ND		ug/kg	1.5	--	1
sec-Butylbenzene	ND		ug/kg	1.5	--	1
tert-Butylbenzene	ND		ug/kg	6.1	--	1
o-Chlorotoluene	ND		ug/kg	6.1	--	1
p-Chlorotoluene	ND		ug/kg	6.1	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	6.1	--	1
Hexachlorobutadiene	ND		ug/kg	6.1	--	1
Isopropylbenzene	ND		ug/kg	1.5	--	1
p-Isopropyltoluene	ND		ug/kg	1.5	--	1
Naphthalene	ND		ug/kg	6.1	--	1
n-Propylbenzene	ND		ug/kg	1.5	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	6.1	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	6.1	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	6.1	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	6.1	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-10  
**Client ID:** D-11 S-13 24'-25'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	7.6	--	1
Diisopropyl Ether	ND		ug/kg	6.1	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	6.1	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	6.1	--	1
1,4-Dioxane	ND		ug/kg	61	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	101		70-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-12  
 Client ID: D-8 S-11 18'-20'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/24/15 13:58  
 Analyst: BN  
 Percent Solids: 75%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	15	--	1
1,1-Dichloroethane	ND		ug/kg	2.2	--	1
Chloroform	ND		ug/kg	2.2	--	1
Carbon tetrachloride	ND		ug/kg	1.5	--	1
1,2-Dichloropropane	ND		ug/kg	5.2	--	1
Dibromochloromethane	ND		ug/kg	1.5	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.2	--	1
Tetrachloroethene	ND		ug/kg	1.5	--	1
Chlorobenzene	ND		ug/kg	1.5	--	1
Trichlorofluoromethane	ND		ug/kg	5.9	--	1
1,2-Dichloroethane	ND		ug/kg	1.5	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.5	--	1
Bromodichloromethane	ND		ug/kg	1.5	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.5	--	1
1,1-Dichloropropene	ND		ug/kg	5.9	--	1
Bromoform	ND		ug/kg	5.9	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Benzene	ND		ug/kg	1.5	--	1
Toluene	ND		ug/kg	2.2	--	1
Ethylbenzene	ND		ug/kg	1.5	--	1
Chloromethane	ND		ug/kg	5.9	--	1
Bromomethane	ND		ug/kg	3.0	--	1
Vinyl chloride	ND		ug/kg	3.0	--	1
Chloroethane	ND		ug/kg	3.0	--	1
1,1-Dichloroethene	ND		ug/kg	1.5	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.2	--	1
Trichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.9	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-12  
 Client ID: D-8 S-11 18'-20'  
 Sample Location: BOSTON, MA

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	5.9	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.9	--	1
Methyl tert butyl ether	ND		ug/kg	3.0	--	1
p/m-Xylene	ND		ug/kg	3.0	--	1
o-Xylene	ND		ug/kg	3.0	--	1
Xylenes, Total	ND		ug/kg	3.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.5	--	1
Dibromomethane	ND		ug/kg	5.9	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.9	--	1
Styrene	ND		ug/kg	3.0	--	1
Dichlorodifluoromethane	ND		ug/kg	15	--	1
Acetone	ND		ug/kg	54	--	1
Carbon disulfide	ND		ug/kg	5.9	--	1
Methyl ethyl ketone	ND		ug/kg	15	--	1
Methyl isobutyl ketone	ND		ug/kg	15	--	1
2-Hexanone	ND		ug/kg	15	--	1
Bromochloromethane	ND		ug/kg	5.9	--	1
Tetrahydrofuran	ND		ug/kg	5.9	--	1
2,2-Dichloropropane	ND		ug/kg	7.4	--	1
1,2-Dibromoethane	ND		ug/kg	5.9	--	1
1,3-Dichloropropane	ND		ug/kg	5.9	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Bromobenzene	ND		ug/kg	7.4	--	1
n-Butylbenzene	ND		ug/kg	1.5	--	1
sec-Butylbenzene	ND		ug/kg	1.5	--	1
tert-Butylbenzene	ND		ug/kg	5.9	--	1
o-Chlorotoluene	ND		ug/kg	5.9	--	1
p-Chlorotoluene	ND		ug/kg	5.9	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.9	--	1
Hexachlorobutadiene	ND		ug/kg	5.9	--	1
Isopropylbenzene	ND		ug/kg	1.5	--	1
p-Isopropyltoluene	ND		ug/kg	1.5	--	1
Naphthalene	ND		ug/kg	5.9	--	1
n-Propylbenzene	ND		ug/kg	1.5	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	5.9	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.9	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.9	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.9	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-12  
 Client ID: D-8 S-11 18'-20'  
 Sample Location: BOSTON, MA

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	7.4	--	1
Diisopropyl Ether	ND		ug/kg	5.9	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.9	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.9	--	1
1,4-Dioxane	ND		ug/kg	59	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	99		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-14  
 Client ID: D-8 S-18 35'-37'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/24/15 14:23  
 Analyst: BN  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	9.5	--	1
1,1-Dichloroethane	ND		ug/kg	1.4	--	1
Chloroform	ND		ug/kg	1.4	--	1
Carbon tetrachloride	ND		ug/kg	0.95	--	1
1,2-Dichloropropane	ND		ug/kg	3.3	--	1
Dibromochloromethane	ND		ug/kg	0.95	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.4	--	1
Tetrachloroethene	ND		ug/kg	0.95	--	1
Chlorobenzene	ND		ug/kg	0.95	--	1
Trichlorofluoromethane	ND		ug/kg	3.8	--	1
1,2-Dichloroethane	ND		ug/kg	0.95	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.95	--	1
Bromodichloromethane	ND		ug/kg	0.95	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.95	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.95	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.95	--	1
1,1-Dichloropropene	ND		ug/kg	3.8	--	1
Bromoform	ND		ug/kg	3.8	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.95	--	1
Benzene	ND		ug/kg	0.95	--	1
Toluene	ND		ug/kg	1.4	--	1
Ethylbenzene	ND		ug/kg	0.95	--	1
Chloromethane	ND		ug/kg	3.8	--	1
Bromomethane	ND		ug/kg	1.9	--	1
Vinyl chloride	ND		ug/kg	1.9	--	1
Chloroethane	ND		ug/kg	1.9	--	1
1,1-Dichloroethene	ND		ug/kg	0.95	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	--	1
Trichloroethene	ND		ug/kg	0.95	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.8	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-14  
 Client ID: D-8 S-18 35'-37'  
 Sample Location: BOSTON, MA

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	3.8	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.8	--	1
Methyl tert butyl ether	ND		ug/kg	1.9	--	1
p/m-Xylene	ND		ug/kg	1.9	--	1
o-Xylene	ND		ug/kg	1.9	--	1
Xylenes, Total	ND		ug/kg	1.9	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.95	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.95	--	1
Dibromomethane	ND		ug/kg	3.8	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.8	--	1
Styrene	ND		ug/kg	1.9	--	1
Dichlorodifluoromethane	ND		ug/kg	9.5	--	1
Acetone	ND		ug/kg	34	--	1
Carbon disulfide	ND		ug/kg	3.8	--	1
Methyl ethyl ketone	ND		ug/kg	9.5	--	1
Methyl isobutyl ketone	ND		ug/kg	9.5	--	1
2-Hexanone	ND		ug/kg	9.5	--	1
Bromochloromethane	ND		ug/kg	3.8	--	1
Tetrahydrofuran	ND		ug/kg	3.8	--	1
2,2-Dichloropropane	ND		ug/kg	4.7	--	1
1,2-Dibromoethane	ND		ug/kg	3.8	--	1
1,3-Dichloropropane	ND		ug/kg	3.8	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.95	--	1
Bromobenzene	ND		ug/kg	4.7	--	1
n-Butylbenzene	ND		ug/kg	0.95	--	1
sec-Butylbenzene	ND		ug/kg	0.95	--	1
tert-Butylbenzene	ND		ug/kg	3.8	--	1
o-Chlorotoluene	ND		ug/kg	3.8	--	1
p-Chlorotoluene	ND		ug/kg	3.8	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.8	--	1
Hexachlorobutadiene	ND		ug/kg	3.8	--	1
Isopropylbenzene	ND		ug/kg	0.95	--	1
p-Isopropyltoluene	ND		ug/kg	0.95	--	1
Naphthalene	ND		ug/kg	3.8	--	1
n-Propylbenzene	ND		ug/kg	0.95	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.8	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.8	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.8	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.8	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-14  
 Client ID: D-8 S-18 35'-37'  
 Sample Location: BOSTON, MA

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	4.7	--	1
Diisopropyl Ether	ND		ug/kg	3.8	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.8	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.8	--	1
1,4-Dioxane	ND		ug/kg	38	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	101		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/24/15 09:16  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10,12,14 Batch: WG815035-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/24/15 09:16  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10,12,14 Batch: WG815035-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylene (Total)	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene (total)	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 08/24/15 09:16  
**Analyst:** BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10,12,14 Batch: WG815035-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Ethyl ether	ND		ug/kg	5.0	--
Isopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	93		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10,12,14 Batch: WG815035-1 WG815035-2								
Methylene chloride	88		84		70-130	5		20
1,1-Dichloroethane	100		89		70-130	12		20
Chloroform	96		88		70-130	9		20
Carbon tetrachloride	105		89		70-130	16		20
1,2-Dichloropropane	97		91		70-130	6		20
Dibromochloromethane	96		94		70-130	2		20
1,1,2-Trichloroethane	97		97		70-130	0		20
Tetrachloroethene	106		93		70-130	13		20
Chlorobenzene	101		94		70-130	7		20
Trichlorofluoromethane	101		84		70-130	18		20
1,2-Dichloroethane	97		92		70-130	5		20
1,1,1-Trichloroethane	100		87		70-130	14		20
Bromodichloromethane	95		88		70-130	8		20
trans-1,3-Dichloropropene	104		103		70-130	1		20
cis-1,3-Dichloropropene	100		94		70-130	6		20
1,1-Dichloropropene	106		91		70-130	15		20
Bromoform	94		92		70-130	2		20
1,1,2,2-Tetrachloroethane	96		96		70-130	0		20
Benzene	97		88		70-130	10		20
Toluene	101		93		70-130	8		20
Ethylbenzene	105		96		70-130	9		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10,12,14 Batch: WG815035-1 WG815035-2								
Chloromethane	96		86		70-130	11		20
Bromomethane	97		86		70-130	12		20
Vinyl chloride	111		93		70-130	18		20
Chloroethane	107		92		70-130	15		20
1,1-Dichloroethene	98		84		70-130	15		20
trans-1,2-Dichloroethene	94		83		70-130	12		20
Trichloroethene	96		86		70-130	11		20
1,2-Dichlorobenzene	101		96		70-130	5		20
1,3-Dichlorobenzene	104		97		70-130	7		20
1,4-Dichlorobenzene	102		95		70-130	7		20
Methyl tert butyl ether	95		92		70-130	3		20
p/m-Xylene	108		99		70-130	9		20
o-Xylene	106		99		70-130	7		20
cis-1,2-Dichloroethene	94		85		70-130	10		20
Dibromomethane	90		87		70-130	3		20
1,2,3-Trichloropropane	103		99		70-130	4		20
Styrene	104		98		70-130	6		20
Dichlorodifluoromethane	101		85		70-130	17		20
Acetone	118		118		70-130	0		20
Carbon disulfide	106		93		70-130	13		20
Methyl ethyl ketone	98		102		70-130	4		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10,12,14 Batch: WG815035-1 WG815035-2								
Methyl isobutyl ketone	86		88		70-130	2		20
2-Hexanone	97		100		70-130	3		20
Bromochloromethane	92		88		70-130	4		20
Tetrahydrofuran	97		95		70-130	2		20
2,2-Dichloropropane	105		90		70-130	15		20
1,2-Dibromoethane	95		95		70-130	0		20
1,3-Dichloropropane	101		99		70-130	2		20
1,1,1,2-Tetrachloroethane	99		94		70-130	5		20
Bromobenzene	102		94		70-130	8		20
n-Butylbenzene	114		100		70-130	13		20
sec-Butylbenzene	112		98		70-130	13		20
tert-Butylbenzene	111		98		70-130	12		20
o-Chlorotoluene	100		101		70-130	1		20
p-Chlorotoluene	110		98		70-130	12		20
1,2-Dibromo-3-chloropropane	92		94		70-130	2		20
Hexachlorobutadiene	105		92		70-130	13		20
Isopropylbenzene	112		99		70-130	12		20
p-Isopropyltoluene	112		99		70-130	12		20
Naphthalene	98		98		70-130	0		20
n-Propylbenzene	111		98		70-130	12		20
1,2,3-Trichlorobenzene	101		99		70-130	2		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10,12,14 Batch: WG815035-1 WG815035-2								
1,2,4-Trichlorobenzene	108		101		70-130	7		20
1,3,5-Trimethylbenzene	111		99		70-130	11		20
1,2,4-Trimethylbenzene	110		100		70-130	10		20
Diethyl ether	92		90		70-130	2		20
Diisopropyl Ether	98		93		70-130	5		20
Ethyl-Tert-Butyl-Ether	99		93		70-130	6		20
Tertiary-Amyl Methyl Ether	97		94		70-130	3		20
1,4-Dioxane	94		96		70-130	2		20

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
1,2-Dichloroethane-d4	103		103		70-130
Toluene-d8	103		105		70-130
4-Bromofluorobenzene	104		103		70-130
Dibromofluoromethane	95		94		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-01  
 Client ID: D-11 12'-18' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/23/15 00:04  
 Analyst: KR  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 20:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-01  
**Client ID:** D-11 12'-18' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	440	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	970	--	1
Pentachlorophenol	ND		ug/kg	400	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	63		30-130
Phenol-d6	64		30-130
Nitrobenzene-d5	63		30-130
2-Fluorobiphenyl	54		30-130
2,4,6-Tribromophenol	61		30-130
4-Terphenyl-d14	51		30-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-03  
 Client ID: D-11 18'-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/23/15 01:45  
 Analyst: KR  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 20:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-03  
**Client ID:** D-11 18'-24' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	440	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	980	--	1
Pentachlorophenol	ND		ug/kg	410	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	79		30-130
Phenol-d6	79		30-130
Nitrobenzene-d5	74		30-130
2-Fluorobiphenyl	70		30-130
2,4,6-Tribromophenol	72		30-130
4-Terphenyl-d14	73		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-05  
 Client ID: D-11 28'-42' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/23/15 02:10  
 Analyst: KR  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 20:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-05  
**Client ID:** D-11 28'-42' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	440	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	980	--	1
Pentachlorophenol	ND		ug/kg	410	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	61		30-130
Phenol-d6	62		30-130
Nitrobenzene-d5	59		30-130
2-Fluorobiphenyl	53		30-130
2,4,6-Tribromophenol	57		30-130
4-Terphenyl-d14	50		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-07  
 Client ID: D-3/D-11/D-15/D-16 SAND COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/23/15 02:35  
 Analyst: KR  
 Percent Solids: 81%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 20:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-07  
 Client ID: D-3/D-11/D-15/D-16 SAND COMP  
 Sample Location: BOSTON, MA

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	430	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	970	--	1
Pentachlorophenol	ND		ug/kg	400	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	72		30-130
Phenol-d6	74		30-130
Nitrobenzene-d5	70		30-130
2-Fluorobiphenyl	65		30-130
2,4,6-Tribromophenol	72		30-130
4-Terphenyl-d14	72		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-09  
 Client ID: D-3/D-11/D-14/D-15 ORG COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/23/15 03:00  
 Analyst: KR  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 20:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-09  
 Client ID: D-3/D-11/D-14/D-15 ORG COMP  
 Sample Location: BOSTON, MA

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	440	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	990	--	1
Pentachlorophenol	ND		ug/kg	410	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		30-130
Phenol-d6	79		30-130
Nitrobenzene-d5	76		30-130
2-Fluorobiphenyl	67		30-130
2,4,6-Tribromophenol	80		30-130
4-Terphenyl-d14	61		30-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-11  
 Client ID: D-8 18'-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/23/15 03:25  
 Analyst: KR  
 Percent Solids: 75%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 20:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	180	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	220	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	200	--	1
2-Chloronaphthalene	ND		ug/kg	220	--	1
1,2-Dichlorobenzene	ND		ug/kg	220	--	1
1,3-Dichlorobenzene	ND		ug/kg	220	--	1
1,4-Dichlorobenzene	ND		ug/kg	220	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	220	--	1
2,4-Dinitrotoluene	ND		ug/kg	220	--	1
2,6-Dinitrotoluene	ND		ug/kg	220	--	1
Azobenzene	ND		ug/kg	220	--	1
Fluoranthene	ND		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	220	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	260	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	240	--	1
Hexachlorobutadiene	ND		ug/kg	220	--	1
Hexachloroethane	ND		ug/kg	180	--	1
Isophorone	ND		ug/kg	200	--	1
Naphthalene	ND		ug/kg	220	--	1
Nitrobenzene	ND		ug/kg	200	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	220	--	1
Butyl benzyl phthalate	ND		ug/kg	220	--	1
Di-n-butylphthalate	ND		ug/kg	220	--	1
Di-n-octylphthalate	ND		ug/kg	220	--	1
Diethyl phthalate	ND		ug/kg	220	--	1
Dimethyl phthalate	ND		ug/kg	220	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	180	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-11  
**Client ID:** D-8 18'-24' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	180	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	180	--	1
Fluorene	ND		ug/kg	220	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	180	--	1
Pyrene	ND		ug/kg	130	--	1
Aniline	ND		ug/kg	260	--	1
4-Chloroaniline	ND		ug/kg	220	--	1
Dibenzofuran	ND		ug/kg	220	--	1
2-Methylnaphthalene	ND		ug/kg	260	--	1
Acetophenone	ND		ug/kg	220	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	220	--	1
2,4-Dichlorophenol	ND		ug/kg	200	--	1
2,4-Dimethylphenol	ND		ug/kg	220	--	1
2-Nitrophenol	ND		ug/kg	480	--	1
4-Nitrophenol	ND		ug/kg	310	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	440	--	1
Phenol	ND		ug/kg	220	--	1
2-Methylphenol	ND		ug/kg	220	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	320	--	1
2,4,5-Trichlorophenol	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	60		30-130
Phenol-d6	64		30-130
Nitrobenzene-d5	60		30-130
2-Fluorobiphenyl	56		30-130
2,4,6-Tribromophenol	67		30-130
4-Terphenyl-d14	59		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-13  
 Client ID: D-8 30'-42' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/23/15 03:50  
 Analyst: KR  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 20:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-13  
**Client ID:** D-8 30'-42' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	440	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	990	--	1
Pentachlorophenol	ND		ug/kg	410	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		30-130
Phenol-d6	78		30-130
Nitrobenzene-d5	73		30-130
2-Fluorobiphenyl	69		30-130
2,4,6-Tribromophenol	77		30-130
4-Terphenyl-d14	75		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/22/15 10:17  
**Analyst:** KR

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/21/15 20:36

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09,11,13 Batch: WG814513-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/22/15 10:17  
**Analyst:** KR

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/21/15 20:36

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09,11,13 Batch: WG814513-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	790	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/22/15 10:17  
**Analyst:** KR

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/21/15 20:36

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09,11,13 Batch: WG814513-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	45		30-130
Phenol-d6	51		30-130
Nitrobenzene-d5	44		30-130
2-Fluorobiphenyl	47		30-130
2,4,6-Tribromophenol	60		30-130
4-Terphenyl-d14	79		30-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13 Batch: WG814513-2 WG814513-3								
Acenaphthene	63		76		40-140	19		30
1,2,4-Trichlorobenzene	61		70		40-140	14		30
Hexachlorobenzene	64		76		40-140	17		30
Bis(2-chloroethyl)ether	67		76		40-140	13		30
2-Chloronaphthalene	63		72		40-140	13		30
1,2-Dichlorobenzene	65		73		40-140	12		30
1,3-Dichlorobenzene	64		70		40-140	9		30
1,4-Dichlorobenzene	65		71		40-140	9		30
3,3'-Dichlorobenzidine	61		75		40-140	21		30
2,4-Dinitrotoluene	66		79		40-140	18		30
2,6-Dinitrotoluene	67		80		40-140	18		30
Azobenzene	66		79		40-140	18		30
Fluoranthene	67		83		40-140	21		30
4-Bromophenyl phenyl ether	64		76		40-140	17		30
Bis(2-chloroisopropyl)ether	67		74		40-140	10		30
Bis(2-chloroethoxy)methane	68		78		40-140	14		30
Hexachlorobutadiene	63		73		40-140	15		30
Hexachloroethane	69		72		40-140	4		30
Isophorone	69		77		40-140	11		30
Naphthalene	62		71		40-140	14		30
Nitrobenzene	67		75		40-140	11		30



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13 Batch: WG814513-2 WG814513-3								
Bis(2-Ethylhexyl)phthalate	78		89		40-140	13		30
Butyl benzyl phthalate	74		84		40-140	13		30
Di-n-butylphthalate	75		83		40-140	10		30
Di-n-octylphthalate	73		83		40-140	13		30
Diethyl phthalate	66		80		40-140	19		30
Dimethyl phthalate	69		79		40-140	14		30
Benzo(a)anthracene	72		87		40-140	19		30
Benzo(a)pyrene	77		90		40-140	16		30
Benzo(b)fluoranthene	78		83		40-140	6		30
Benzo(k)fluoranthene	74		81		40-140	9		30
Chrysene	69		80		40-140	15		30
Acenaphthylene	65		76		40-140	16		30
Anthracene	69		82		40-140	17		30
Benzo(ghi)perylene	72		80		40-140	11		30
Fluorene	65		80		40-140	21		30
Phenanthrene	66		76		40-140	14		30
Dibenzo(a,h)anthracene	77		87		40-140	12		30
Indeno(1,2,3-cd)Pyrene	76		84		40-140	10		30
Pyrene	67		81		40-140	19		30
Aniline	50		62		40-140	21		30
4-Chloroaniline	62		71		40-140	14		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13 Batch: WG814513-2 WG814513-3								
Dibenzofuran	64		74		40-140	14		30
2-Methylnaphthalene	64		77		40-140	18		30
Acetophenone	72		78		40-140	8		30
2,4,6-Trichlorophenol	68		78		30-130	14		30
2-Chlorophenol	71		80		30-130	12		30
2,4-Dichlorophenol	67		80		30-130	18		30
2,4-Dimethylphenol	76		83		30-130	9		30
2-Nitrophenol	69		77		30-130	11		30
4-Nitrophenol	66		81		30-130	20		30
2,4-Dinitrophenol	19	Q	42		30-130	75	Q	30
Pentachlorophenol	54		66		30-130	20		30
Phenol	71		80		30-130	12		30
2-Methylphenol	70		79		30-130	12		30
3-Methylphenol/4-Methylphenol	76		81		30-130	6		30
2,4,5-Trichlorophenol	64		76		30-130	17		30

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
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MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13 Batch: WG814513-2 WG814513-3

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>
2-Fluorophenol	73		79		30-130
Phenol-d6	75		85		30-130
Nitrobenzene-d5	75		79		30-130
2-Fluorobiphenyl	64		74		30-130
2,4,6-Tribromophenol	66		78		30-130
4-Terphenyl-d14	69		79		30-130

# PETROLEUM HYDROCARBONS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-01  
 Client ID: D-11 12'-18' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/23/15 23:33  
 Analyst: AR  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 12:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	40400	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	89		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-03  
 Client ID: D-11 18'-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/24/15 00:09  
 Analyst: AR  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 12:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
--	--	--	--	--	--	--

TPH	ND		ug/kg	40000	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	86		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-05  
 Client ID: D-11 28'-42' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/23/15 19:21  
 Analyst: AR  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 12:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	41500	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	87		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-07  
Client ID: D-3/D-11/D-15/D-16 SAND COMP  
Sample Location: BOSTON, MA  
Matrix: Soil  
Analytical Method: 1,8015C(M)  
Analytical Date: 08/23/15 18:45  
Analyst: AR  
Percent Solids: 81%

Date Collected: 08/18/15 14:00  
Date Received: 08/18/15  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 08/21/15 12:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	40000	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	89		40-140



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-09  
Client ID: D-3/D-11/D-14/D-15 ORG COMP  
Sample Location: BOSTON, MA  
Matrix: Soil  
Analytical Method: 1,8015C(M)  
Analytical Date: 08/23/15 18:09  
Analyst: AR  
Percent Solids: 80%

Date Collected: 08/18/15 14:00  
Date Received: 08/18/15  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 08/21/15 12:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	39700	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	86		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-11  
 Client ID: D-8 18'-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/23/15 22:57  
 Analyst: AR  
 Percent Solids: 75%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 12:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	43000	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	86		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-13  
 Client ID: D-8 30'-42' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/24/15 01:21  
 Analyst: AR  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 12:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	41600	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	90		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8015C(M)  
 Analytical Date: 08/23/15 11:31  
 Analyst: AR

Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 12:47

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01,03,05,07,09,11,13 Batch: WG814373-1					
TPH	ND		ug/kg	32700	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	91		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13 Batch: WG814373-2								
TPH	92		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	90				40-140

# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-01  
 Client ID: D-11 12'-18' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/22/15 18:07  
 Analyst: JT  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 18:39  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/22/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/22/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	39.8	--	1	A
Aroclor 1221	ND		ug/kg	39.8	--	1	A
Aroclor 1232	ND		ug/kg	39.8	--	1	A
Aroclor 1242	ND		ug/kg	39.8	--	1	A
Aroclor 1248	ND		ug/kg	39.8	--	1	A
Aroclor 1254	ND		ug/kg	39.8	--	1	A
Aroclor 1260	ND		ug/kg	39.8	--	1	A
Aroclor 1262	ND		ug/kg	39.8	--	1	A
Aroclor 1268	ND		ug/kg	39.8	--	1	A
PCBs, Total	ND		ug/kg	39.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		30-150	A
Decachlorobiphenyl	77		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	74		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-03  
 Client ID: D-11 18'-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/22/15 18:24  
 Analyst: JT  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 18:39  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/22/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/22/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	40.7	--	1	A
Aroclor 1221	ND		ug/kg	40.7	--	1	A
Aroclor 1232	ND		ug/kg	40.7	--	1	A
Aroclor 1242	ND		ug/kg	40.7	--	1	A
Aroclor 1248	ND		ug/kg	40.7	--	1	A
Aroclor 1254	ND		ug/kg	40.7	--	1	A
Aroclor 1260	ND		ug/kg	40.7	--	1	A
Aroclor 1262	ND		ug/kg	40.7	--	1	A
Aroclor 1268	ND		ug/kg	40.7	--	1	A
PCBs, Total	ND		ug/kg	40.7	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	73		30-150	A
2,4,5,6-Tetrachloro-m-xylene	85		30-150	B
Decachlorobiphenyl	80		30-150	B



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-05  
**Client ID:** D-11 28'-42' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil  
**Analytical Method:** 97,8082A  
**Analytical Date:** 08/22/15 18:40  
**Analyst:** JT  
**Percent Solids:** 80%

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3546  
**Extraction Date:** 08/21/15 18:39  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 08/22/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 08/22/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	40.9	--	1	A
Aroclor 1221	ND		ug/kg	40.9	--	1	A
Aroclor 1232	ND		ug/kg	40.9	--	1	A
Aroclor 1242	ND		ug/kg	40.9	--	1	A
Aroclor 1248	ND		ug/kg	40.9	--	1	A
Aroclor 1254	ND		ug/kg	40.9	--	1	A
Aroclor 1260	ND		ug/kg	40.9	--	1	A
Aroclor 1262	ND		ug/kg	40.9	--	1	A
Aroclor 1268	ND		ug/kg	40.9	--	1	A
PCBs, Total	ND		ug/kg	40.9	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	89		30-150	A
Decachlorobiphenyl	89		30-150	A
2,4,5,6-Tetrachloro-m-xylene	102		30-150	B
Decachlorobiphenyl	92		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-07  
 Client ID: D-3/D-11/D-15/D-16 SAND COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/22/15 18:56  
 Analyst: JT  
 Percent Solids: 81%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 18:39  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/22/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/22/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	39.7	--	1	A
Aroclor 1221	ND		ug/kg	39.7	--	1	A
Aroclor 1232	ND		ug/kg	39.7	--	1	A
Aroclor 1242	ND		ug/kg	39.7	--	1	A
Aroclor 1248	ND		ug/kg	39.7	--	1	A
Aroclor 1254	ND		ug/kg	39.7	--	1	A
Aroclor 1260	ND		ug/kg	39.7	--	1	A
Aroclor 1262	ND		ug/kg	39.7	--	1	A
Aroclor 1268	ND		ug/kg	39.7	--	1	A
PCBs, Total	ND		ug/kg	39.7	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	A
Decachlorobiphenyl	81		30-150	A
2,4,5,6-Tetrachloro-m-xylene	89		30-150	B
Decachlorobiphenyl	76		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-09  
**Client ID:** D-3/D-11/D-14/D-15 ORG COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil  
**Analytical Method:** 97,8082A  
**Analytical Date:** 08/22/15 19:12  
**Analyst:** JT  
**Percent Solids:** 80%

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3546  
**Extraction Date:** 08/21/15 18:39  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 08/22/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 08/22/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	40.2	--	1	A
Aroclor 1221	ND		ug/kg	40.2	--	1	A
Aroclor 1232	ND		ug/kg	40.2	--	1	A
Aroclor 1242	ND		ug/kg	40.2	--	1	A
Aroclor 1248	ND		ug/kg	40.2	--	1	A
Aroclor 1254	ND		ug/kg	40.2	--	1	A
Aroclor 1260	ND		ug/kg	40.2	--	1	A
Aroclor 1262	ND		ug/kg	40.2	--	1	A
Aroclor 1268	ND		ug/kg	40.2	--	1	A
PCBs, Total	ND		ug/kg	40.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	84		30-150	B
Decachlorobiphenyl	79		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-11  
 Client ID: D-8 18'-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/22/15 19:28  
 Analyst: JT  
 Percent Solids: 75%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 18:39  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/22/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/22/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	44.2	--	1	A
Aroclor 1221	ND		ug/kg	44.2	--	1	A
Aroclor 1232	ND		ug/kg	44.2	--	1	A
Aroclor 1242	ND		ug/kg	44.2	--	1	A
Aroclor 1248	ND		ug/kg	44.2	--	1	A
Aroclor 1254	ND		ug/kg	44.2	--	1	A
Aroclor 1260	ND		ug/kg	44.2	--	1	A
Aroclor 1262	ND		ug/kg	44.2	--	1	A
Aroclor 1268	ND		ug/kg	44.2	--	1	A
PCBs, Total	ND		ug/kg	44.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	73		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-13  
**Client ID:** D-8 30'-42' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil  
**Analytical Method:** 97,8082A  
**Analytical Date:** 08/22/15 19:44  
**Analyst:** JT  
**Percent Solids:** 80%

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3546  
**Extraction Date:** 08/21/15 18:39  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 08/22/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 08/22/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	40.1	--	1	A
Aroclor 1221	ND		ug/kg	40.1	--	1	A
Aroclor 1232	ND		ug/kg	40.1	--	1	A
Aroclor 1242	ND		ug/kg	40.1	--	1	A
Aroclor 1248	ND		ug/kg	40.1	--	1	A
Aroclor 1254	ND		ug/kg	40.1	--	1	A
Aroclor 1260	ND		ug/kg	40.1	--	1	A
Aroclor 1262	ND		ug/kg	40.1	--	1	A
Aroclor 1268	ND		ug/kg	40.1	--	1	A
PCBs, Total	ND		ug/kg	40.1	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	88		30-150	A
Decachlorobiphenyl	90		30-150	A
2,4,5,6-Tetrachloro-m-xylene	96		30-150	B
Decachlorobiphenyl	87		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8082A  
 Analytical Date: 08/22/15 21:05  
 Analyst: JT

Extraction Method: EPA 3546  
 Extraction Date: 08/21/15 18:35  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/22/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/22/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01,03,05,07,09,11,13 Batch: WG814495-1						
Aroclor 1016	ND		ug/kg	32.8	--	A
Aroclor 1221	ND		ug/kg	32.8	--	A
Aroclor 1232	ND		ug/kg	32.8	--	A
Aroclor 1242	ND		ug/kg	32.8	--	A
Aroclor 1248	ND		ug/kg	32.8	--	A
Aroclor 1254	ND		ug/kg	32.8	--	A
Aroclor 1260	ND		ug/kg	32.8	--	A
Aroclor 1262	ND		ug/kg	32.8	--	A
Aroclor 1268	ND		ug/kg	32.8	--	A
PCBs, Total	ND		ug/kg	32.8	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	94		30-150	A
Decachlorobiphenyl	102		30-150	A
2,4,5,6-Tetrachloro-m-xylene	104		30-150	B
Decachlorobiphenyl	96		30-150	B



## Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13 Batch: WG814495-2 WG814495-3									
Aroclor 1016	84		83		40-140	1		30	A
Aroclor 1260	95		95		40-140	0		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	90		88		30-150	A
Decachlorobiphenyl	102		100		30-150	A
2,4,5,6-Tetrachloro-m-xylene	98		98		30-150	B
Decachlorobiphenyl	97		102		30-150	B

## METALS



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-01  
 Client ID: D-11 12'-18' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	3.5		mg/kg	0.50	--	1	08/19/15 04:06	08/19/15 13:10	EPA 3050B	97,6010C	JH
Barium, Total	37		mg/kg	0.50	--	1	08/19/15 04:06	08/19/15 13:10	EPA 3050B	97,6010C	JH
Cadmium, Total	1.1		mg/kg	0.50	--	1	08/19/15 04:06	08/19/15 13:10	EPA 3050B	97,6010C	JH
Chromium, Total	20		mg/kg	0.50	--	1	08/19/15 04:06	08/19/15 13:10	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.5	--	1	08/19/15 04:06	08/19/15 13:10	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.097	--	1	08/20/15 11:40	08/20/15 14:24	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.5	--	1	08/19/15 04:06	08/19/15 13:10	EPA 3050B	97,6010C	JH
Silver, Total	0.83		mg/kg	0.50	--	1	08/19/15 04:06	08/19/15 13:10	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-03  
 Client ID: D-11 18'-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	3.8		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:25	EPA 3050B	97,6010C	JH
Barium, Total	23		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:25	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:25	EPA 3050B	97,6010C	JH
Chromium, Total	15		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:25	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.5	--	1	08/19/15 04:06	08/19/15 14:25	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.079	--	1	08/20/15 11:40	08/20/15 14:26	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.5	--	1	08/19/15 04:06	08/19/15 14:25	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:25	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-05  
 Client ID: D-11 28'-42' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.1		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:30	EPA 3050B	97,6010C	JH
Barium, Total	50		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:30	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:30	EPA 3050B	97,6010C	JH
Chromium, Total	26		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:30	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.5	--	1	08/19/15 04:06	08/19/15 14:30	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.083	--	1	08/20/15 11:40	08/20/15 14:28	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.5	--	1	08/19/15 04:06	08/19/15 14:30	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:30	EPA 3050B	97,6010C	JH



Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-07  
 Client ID: D-3/D-11/D-15/D-16 SAND COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 81%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Westborough Lab											
Arsenic, Total	3.4		mg/kg	0.48	--	1	08/19/15 04:06	08/19/15 14:34	EPA 3050B	97,6010C	JH
Barium, Total	21		mg/kg	0.48	--	1	08/19/15 04:06	08/19/15 14:34	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.48	--	1	08/19/15 04:06	08/19/15 14:34	EPA 3050B	97,6010C	JH
Chromium, Total	14		mg/kg	0.48	--	1	08/19/15 04:06	08/19/15 14:34	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.4	--	1	08/19/15 04:06	08/19/15 14:34	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.082	--	1	08/20/15 11:40	08/20/15 14:30	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.4	--	1	08/19/15 04:06	08/19/15 14:34	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.48	--	1	08/19/15 04:06	08/19/15 14:34	EPA 3050B	97,6010C	JH



Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-09  
 Client ID: D-3/D-11/D-14/D-15 ORG COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Westborough Lab											
Arsenic, Total	4.6		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:38	EPA 3050B	97,6010C	JH
Barium, Total	14		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:38	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:38	EPA 3050B	97,6010C	JH
Chromium, Total	13		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:38	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.5	--	1	08/19/15 04:06	08/19/15 14:38	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.081	--	1	08/20/15 11:40	08/20/15 14:32	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.5	--	1	08/19/15 04:06	08/19/15 14:38	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:38	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-11  
 Client ID: D-8 18'-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 75%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	5.9		mg/kg	0.52	--	1	08/19/15 04:06	08/19/15 14:41	EPA 3050B	97,6010C	JH
Barium, Total	42		mg/kg	0.52	--	1	08/19/15 04:06	08/19/15 14:41	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.52	--	1	08/19/15 04:06	08/19/15 14:41	EPA 3050B	97,6010C	JH
Chromium, Total	22		mg/kg	0.52	--	1	08/19/15 04:06	08/19/15 14:41	EPA 3050B	97,6010C	JH
Lead, Total	8.2		mg/kg	2.6	--	1	08/19/15 04:06	08/19/15 14:41	EPA 3050B	97,6010C	JH
Mercury, Total	0.155		mg/kg	0.085	--	1	08/20/15 11:40	08/20/15 14:34	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.6	--	1	08/19/15 04:06	08/19/15 14:41	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.52	--	1	08/19/15 04:06	08/19/15 14:41	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-13  
 Client ID: D-8 30'-42' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 80%

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.3		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:45	EPA 3050B	97,6010C	JH
Barium, Total	45		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:45	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:45	EPA 3050B	97,6010C	JH
Chromium, Total	24		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:45	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.4	--	1	08/19/15 04:06	08/19/15 14:45	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.090	--	1	08/20/15 11:40	08/20/15 14:39	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.4	--	1	08/19/15 04:06	08/19/15 14:45	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.49	--	1	08/19/15 04:06	08/19/15 14:45	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01,03,05,07,09,11,13 Batch: WG813345-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	08/19/15 04:06	08/19/15 10:06	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	08/19/15 04:06	08/19/15 10:06	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	08/19/15 04:06	08/19/15 10:06	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	08/19/15 04:06	08/19/15 10:06	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	08/19/15 04:06	08/19/15 10:06	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	08/19/15 04:06	08/19/15 10:06	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	08/19/15 04:06	08/19/15 10:06	97,6010C	JH

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01,03,05,07,09,11,13 Batch: WG813743-1									
Mercury, Total	ND	mg/kg	0.083	--	1	08/20/15 11:40	08/20/15 14:17	97,7471B	DB

### Prep Information

Digestion Method: EPA 7471B



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D

**Lab Number:** L1519838

**Project Number:** 4426.9.1D

**Report Date:** 08/25/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13 Batch: WG813345-2 WG813345-3 SRM Lot Number: D088-540								
Arsenic, Total	105		96		79-121	9		30
Barium, Total	99		94		83-117	5		30
Cadmium, Total	104		101		83-117	3		30
Chromium, Total	92		92		80-120	0		30
Lead, Total	95		92		81-117	3		30
Selenium, Total	97		97		78-122	0		30
Silver, Total	98		96		75-124	2		30
MCP Total Metals - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13 Batch: WG813743-2 WG813743-3 SRM Lot Number: D088-540								
Mercury, Total	113		106		72-128	6		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

### SAMPLE RESULTS

**Lab ID:** L1519838-01  
**Client ID:** D-11 12'-18' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/20/15 16:04	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

### SAMPLE RESULTS

**Lab ID:** L1519838-03  
**Client ID:** D-11 18'-24' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/20/15 16:04	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

### SAMPLE RESULTS

**Lab ID:** L1519838-05  
**Client ID:** D-11 28'-42' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/20/15 16:04	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

### SAMPLE RESULTS

**Lab ID:** L1519838-07  
**Client ID:** D-3/D-11/D-15/D-16 SAND COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Wet Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/20/15 16:04	1,1030	AB



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1519838

Report Date: 08/25/15

**SAMPLE RESULTS**

Lab ID: L1519838-09  
 Client ID: D-3/D-11/D-14/D-15 ORG COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 Field Prep: Not Specified

**Test Material Information**

Source of Material: Unknown  
 Description of Material: Non-Metallic - Damp Clay  
 Particle Size: Fine  
 Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/20/15 16:04	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

### SAMPLE RESULTS

**Lab ID:** L1519838-11  
**Client ID:** D-8 18'-24' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/21/15 00:24	1,1030	TL





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

### SAMPLE RESULTS

**Lab ID:** L1519838-13  
**Client ID:** D-8 30'-42' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/21/15 00:24	1,1030	TL



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-01  
**Client ID:** D-11 12'-18' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	110		umhos/cm	10	--	1	-	08/19/15 03:40	1,9050A	TA
Solids, Total	80.3		%	0.100	NA	1	-	08/19/15 02:20	30,2540G	RT
pH (H)	8.5		SU	-	NA	1	-	08/19/15 00:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/20/15 19:40	08/20/15 22:04	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/20/15 19:40	08/20/15 21:55	1,7.3	TL



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1519838

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-02

Client ID: D-11 S-9 16'-18'

Sample Location: BOSTON, MA

Matrix: Soil

Date Collected: 08/18/15 14:00

Date Received: 08/18/15

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	80.3		%	0.100	NA	1	-	08/19/15 02:20	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-03  
**Client ID:** D-11 18'-24' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	30		umhos/cm	10	--	1	-	08/19/15 03:40	1,9050A	TA
Solids, Total	80.1		%	0.100	NA	1	-	08/19/15 02:20	30,2540G	RT
pH (H)	9.1		SU	-	NA	1	-	08/19/15 00:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/20/15 19:40	08/20/15 22:04	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/20/15 19:40	08/20/15 21:55	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-04

Date Collected: 08/18/15 14:00

Client ID: D-11 S-10 18'-20'

Date Received: 08/18/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.1		%	0.100	NA	1	-	08/19/15 02:20	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-05  
**Client ID:** D-11 28'-42' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	580		umhos/cm	10	--	1	-	08/19/15 03:40	1,9050A	TA
Solids, Total	79.8		%	0.100	NA	1	-	08/19/15 02:20	30,2540G	RT
pH (H)	8.1		SU	-	NA	1	-	08/19/15 00:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/20/15 22:50	08/21/15 00:01	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/20/15 22:50	08/20/15 23:52	1,7.3	TL



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1519838

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-06

Client ID: D-11 S-15 28'-30'

Sample Location: BOSTON, MA

Matrix: Soil

Date Collected: 08/18/15 14:00

Date Received: 08/18/15

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	79.8		%	0.100	NA	1	-	08/19/15 02:20	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-07  
**Client ID:** D-3/D-11/D-15/D-16 SAND COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	410		umhos/cm	10	--	1	-	08/19/15 03:40	1,9050A	TA
Solids, Total	81.1		%	0.100	NA	1	-	08/19/15 02:20	30,2540G	RT
pH (H)	8.5		SU	-	NA	1	-	08/19/15 00:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/20/15 22:50	08/21/15 00:01	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/20/15 22:50	08/20/15 23:52	1,7.3	TL





Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-08  
 Client ID: D-11 S-13A 25'-26'  
 Sample Location: BOSTON, MA  
 Matrix: Soil

Date Collected: 08/18/15 14:00  
 Date Received: 08/18/15  
 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	81.1		%	0.100	NA	1	-	08/19/15 02:20	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-09  
**Client ID:** D-3/D-11/D-14/D-15 ORG COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	700		umhos/cm	10	--	1	-	08/19/15 03:40	1,9050A	TA
Solids, Total	79.9		%	0.100	NA	1	-	08/19/15 02:20	30,2540G	RT
pH (H)	8.6		SU	-	NA	1	-	08/19/15 00:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/20/15 22:50	08/21/15 00:01	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/20/15 22:50	08/20/15 23:52	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-10

Date Collected: 08/18/15 14:00

Client ID: D-11 S-13 24'-25'

Date Received: 08/18/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.9		%	0.100	NA	1	-	08/19/15 02:20	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-11  
**Client ID:** D-8 18'-24' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	160		umhos/cm	10	--	1	-	08/19/15 03:40	1,9050A	TA
Solids, Total	74.7		%	0.100	NA	1	-	08/19/15 02:20	30,2540G	RT
pH (H)	8.7		SU	-	NA	1	-	08/19/15 00:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/20/15 22:50	08/21/15 00:01	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/20/15 22:50	08/20/15 23:52	1,7.3	TL



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-12  
**Client ID:** D-8 S-11 18'-20'  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**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	74.7		%	0.100	NA	1	-	08/19/15 02:20	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**SAMPLE RESULTS**

**Lab ID:** L1519838-13  
**Client ID:** D-8 30'-42' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/18/15 14:00  
**Date Received:** 08/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	690		umhos/cm	10	--	1	-	08/19/15 03:40	1,9050A	TA
Solids, Total	80.0		%	0.100	NA	1	-	08/19/15 02:20	30,2540G	RT
pH (H)	8.0		SU	-	NA	1	-	08/19/15 00:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/20/15 22:50	08/21/15 00:01	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/20/15 22:50	08/20/15 23:53	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

## SAMPLE RESULTS

Lab ID: L1519838-14

Date Collected: 08/18/15 14:00

Client ID: D-8 S-18 35'-37'

Date Received: 08/18/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.0		%	0.100	NA	1	-	08/19/15 02:20	30,2540G	RT



Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,03 Batch: WG814035-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	08/20/15 19:40	08/20/15 22:01	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01,03 Batch: WG814037-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	08/20/15 19:40	08/20/15 21:51	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 05,07,09,11,13 Batch: WG814040-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	08/20/15 22:50	08/21/15 00:00	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 05,07,09,11,13 Batch: WG814042-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	08/20/15 22:50	08/20/15 23:52	1,7.3	TL



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13 Batch: WG813322-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13 Batch: WG813354-1								
Specific Conductance	102		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG814035-2								
Cyanide, Reactive	35		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG814037-2								
Sulfide, Reactive	107		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 05,07,09,11,13 Batch: WG814040-2								
Cyanide, Reactive	42		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 05,07,09,11,13 Batch: WG814042-2								
Sulfide, Reactive	89		-		60-125	-		40

## Lab Duplicate Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1519838

Report Date: 08/25/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13 QC Batch ID: WG813322-2 QC Sample: L1519838-13 Client ID: D-8 30'-42' COMP						
pH	8.0	8.0	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01-14 QC Batch ID: WG813331-1 QC Sample: L1519838-01 Client ID: D-11 12'-18' COMP						
Solids, Total	80.3	80.6	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13 QC Batch ID: WG813354-2 QC Sample: L1519838-13 Client ID: D-8 30'-42' COMP						
Specific Conductance	690	710	umhos/cm	3		20

Project Name: FAN PIER PARCEL D

Lab Number: L1519838

Project Number: 4426.9.1D

Report Date: 08/25/15

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 08/18/2015 21:17

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1519838-01A	Glass 500ml/16oz unpreserved	A	N/A	3.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519838-02A	Vial MeOH preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-02B	Vial water preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-02C	Vial water preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-03A	Glass 500ml/16oz unpreserved	A	N/A	3.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519838-04A	Vial MeOH preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-04B	Vial water preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-04C	Vial water preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1519838-05A	Glass 500ml/16oz unpreserved	A	N/A	3.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519838-06A	Vial MeOH preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-06B	Vial water preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-06C	Vial water preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-07A	Glass 500ml/16oz unpreserved	A	N/A	3.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519838-08A	Vial MeOH preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-08B	Vial water preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-08C	Vial water preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-09A	Glass 500ml/16oz unpreserved	A	N/A	3.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519838-10A	Vial MeOH preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-10B	Vial water preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-10C	Vial water preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1519838

Report Date: 08/25/15

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1519838-11A	Glass 500ml/16oz unpreserved	A	N/A	3.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519838-12A	Vial MeOH preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-12B	Vial water preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-12C	Vial water preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-13A	Glass 500ml/16oz unpreserved	A	N/A	3.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1519838-14A	Vial MeOH preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-14B	Vial water preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)
L1519838-14C	Vial water preserved	A	N/A	3.3	Y	Absent	MCP-8260HLW-10(14)

**Container Comments**

L1519838-01A

L1519838-03A

L1519838-05A

L1519838-07A

L1519838-09A

L1519838-11A

L1519838-13A

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

## 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

#### **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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1519838  
**Report Date:** 08/25/15

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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, NO<sub>2</sub>, NO<sub>3</sub>.

**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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





7A

## Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1519838

Instrument ID: Voall1.i Calibration Date: 24-AUG-2015 Time: 07:35

Lab File ID: 0824A02 Init. Calib. Date(s): 10-AUG-2 10-AUG-2

Sample No: wg815035-1,31,5 Init. Calib. Times : 12:22 15:23

Compound	RRF	RRF	MIN RRF	%D	MAX %D
dichlorodifluoromethane	.31232	.31513	.1	1	20
chloromethane	.18001	.17317	.1	-4	20
vinyl chloride	.19498	.21722	.1	11	20
bromomethane	.17959	.17367	.1	-3	20
chloroethane	.11929	.12808	.1	7	20
trichlorofluoromethane	.52382	.53163	.1	1	20
ethyl ether	.14578	.13453	.05	-8	20
1,1,-dichloroethene	.22673	.22113	.1	-2	20
carbon disulfide	.65971	.7006	.1	6	20
methylene chloride	.29592	.26196	.1	-11	20
acetone	.05911	.07	.1	18	20
trans-1,2-dichloroethene	.27006	.25361	.1	-6	20
methyl tert butyl ether	.86653	.81963	.1	-5	20
Diisopropyl Ether	.53625	.52291	.05	-2	20
1,1-dichloroethane	.45365	.4538	.2	0	20
Ethyl-Tert-Butyl-Ether	.80514	.79562	.05	-1	20
cis-1,2-dichloroethene	.30224	.28387	.1	-6	20
2,2-dichloropropane	.49841	.52525	.05	5	20
bromochloromethane	.13567	.12543	.05	-8	20
chloroform	.56663	.54447	.2	-4	20
carbontetrachloride	.46274	.48486	.1	5	20
tetrahydrofuran	100	96.818	.05	-3	20
1,1,1-trichloroethane	.54926	.55189	.1	0	20
2-butanone	.06811	.06711	.1	-1	20
1,1-dichloropropene	.33567	.35681	.05	6	20
benzene	.99016	.95914	.5	-3	20
Tertiary-Amyl Methyl Ether	.79027	.76531	.05	-3	20
1,2-dichloroethane	.46376	.44988	.1	-3	20
trichloroethene	.29939	.28595	.2	-4	20
dibromomethane	.18341	.16467	.05	-10	20
1,2-dichloropropane	.21534	.20885	.1	-3	20
bromodichloromethane	.44886	.42728	.2	-5	20
1,4-dioxane	.00271	.00256	.05	-5	20
cis-1,3-dichloropropene	.4537	.45319	.2	0	20
toluene	.88903	.90052	.4	1	20
4-methyl-2-pentanone	.0663	.05668	.1	-15	20
tetrachloroethene	.37271	.39629	.2	6	20
trans-1,3-dichloropropene	.58106	.60726	.1	5	20

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1519838

Instrument ID: Voal11.i      Calibration Date: 24-AUG-2015      Time: 07:35

Lab File ID: 0824A02      Init. Calib. Date(s): 10-AUG-2      10-AUG-2

Sample No: wg815035-1,31,5      Init. Calib. Times : 12:22      15:23

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.24922	.24097	.1	-3	20
chlorodibromomethane	.42499	.40676	.1	-4	20
1,3-dichloropropane	.52841	.53355	.05	1	20
1,2-dibromoethane	.32282	.30811	.1	-5	20
2-hexanone	.13229	.12877	.1	-3	20
chlorobenzene	.98971	1.0036	.5	1	20
ethyl benzene	1.6839	1.7743	.1	5	20
1,1,1,2-tetrachloroethane	.40254	.3977	.05	-1	20
p/m xylene	.61141	.66197	.1	8	20
o xylene	.5944	.6306	.3	6	20
styrene	.99744	1.0373	.3	4	20
bromoform	.51454	.4849	.1	-6	20
isopropylbenzene	3.1053	3.4626	.1	12	20
bromobenzene	.83291	.84589	.05	2	20
n-propylbenzene	3.6219	4.0381	.05	11	20
1,1,2,2,-tetrachloroethane	.70229	.67573	.3	-4	20
2-chlorotoluene	2.7414	2.7568	.05	1	20
1,3,5-trimethylbenzene	2.8278	3.1364	.05	11	20
1,2,3-trichloropropane	.60641	.62286	.05	3	20
4-chlorotoluene	2.4987	2.7375	.05	10	20
tert-butylbenzene	2.2414	2.4907	.05	11	20
1,2,4-trimethylbenzene	2.8759	3.1607	.05	10	20
sec-butylbenzene	3.2750	3.6760	.05	12	20
p-isopropyltoluene	2.8976	3.2408	.05	12	20
1,3-dichlorobenzene	1.5478	1.6103	.6	4	20
1,4-dichlorobenzene	1.5683	1.5977	.5	2	20
n-butylbenzene	2.6230	2.9948	.05	14	20
1,2-dichlorobenzene	1.4805	1.5019	.4	1	20
1,2-dibromo-3-chloropropane	.12266	.11226	.05	-8	20
hexachlorobutadiene	.65054	.68151	.05	5	20
1,2,4-trichlorobenzene	1.1159	1.2056	.2	8	20
naphthalene	2.5411	2.5003	.05	-2	20
1,2,3-trichlorobenzene	1.1001	1.1157	.05	1	20
dibromofluoromethane	.27777	.26444	.05	-5	30
1,2-dichloroethane-d4	.32329	.33298	.05	3	30
toluene-d8	1.2795	1.3197	.05	3	30
4-bromofluorobenzene	1.0573	1.0994	.05	4	30

FORM VII MCP-8260HLW-10



## ANALYTICAL REPORT

Lab Number:	L1520045
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	08/26/15

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

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



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
<del>L1520045-01</del>	<del>D-7 0'-6' COMP</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/19/15 15:00</del>	<del>08/19/15</del>
<del>L1520045-02</del>	<del>D-7 S-2 2'-4'</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/19/15 15:00</del>	<del>08/19/15</del>
L1520045-03	D-12 0'-6' COMP	SOIL	BOSTON, MA	08/19/15 15:00	08/19/15
L1520045-04	D-12 S-3 4'-6'	SOIL	BOSTON, MA	08/19/15 15:00	08/19/15

Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

### 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

The samples submitted for Volatile Organics were received without raw soil for the Total Solids analysis. The Total Solids results from the corresponding composite samples were utilized in the dry weight calculation of the Volatile Organics data.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1520045-02 and -04, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.00162) and 4-methyl-2-pentanone (0.07493) as well as the average response factor for trichloroethene, 1,4-dioxane and 4-methyl-2-pentanone. The initial calibration verification is outside acceptance criteria for tetrahydrofuran (65%), but within overall method criteria.

The continuing calibration standard, associated with L1520045-02 and -04, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

##### Semivolatile Organics

L1520045-01 and -03: The sample has elevated detection limits due to the dilution required by the sample matrix.

##### Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

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: 08/26/15

# ORGANICS

# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520045-04  
 Client ID: D-12 S-3 4'-6'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/25/15 16:41  
 Analyst: BN  
 Percent Solids: 86%

Date Collected: 08/19/15 15:00  
 Date Received: 08/19/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	9.5	--	1
1,1-Dichloroethane	ND		ug/kg	1.4	--	1
Chloroform	ND		ug/kg	1.4	--	1
Carbon tetrachloride	ND		ug/kg	0.95	--	1
1,2-Dichloropropane	ND		ug/kg	3.3	--	1
Dibromochloromethane	ND		ug/kg	0.95	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.4	--	1
Tetrachloroethene	ND		ug/kg	0.95	--	1
Chlorobenzene	ND		ug/kg	0.95	--	1
Trichlorofluoromethane	ND		ug/kg	3.8	--	1
1,2-Dichloroethane	ND		ug/kg	0.95	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.95	--	1
Bromodichloromethane	ND		ug/kg	0.95	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.95	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.95	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.95	--	1
1,1-Dichloropropene	ND		ug/kg	3.8	--	1
Bromoform	ND		ug/kg	3.8	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.95	--	1
Benzene	ND		ug/kg	0.95	--	1
Toluene	ND		ug/kg	1.4	--	1
Ethylbenzene	ND		ug/kg	0.95	--	1
Chloromethane	ND		ug/kg	3.8	--	1
Bromomethane	ND		ug/kg	1.9	--	1
Vinyl chloride	ND		ug/kg	1.9	--	1
Chloroethane	ND		ug/kg	1.9	--	1
1,1-Dichloroethene	ND		ug/kg	0.95	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	--	1
Trichloroethene	ND		ug/kg	0.95	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.8	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520045-04

Date Collected: 08/19/15 15:00

Client ID: D-12 S-3 4'-6'

Date Received: 08/19/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	3.8	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.8	--	1
Methyl tert butyl ether	ND		ug/kg	1.9	--	1
p/m-Xylene	ND		ug/kg	1.9	--	1
o-Xylene	ND		ug/kg	1.9	--	1
Xylenes, Total	ND		ug/kg	1.9	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.95	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.95	--	1
Dibromomethane	ND		ug/kg	3.8	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.8	--	1
Styrene	ND		ug/kg	1.9	--	1
Dichlorodifluoromethane	ND		ug/kg	9.5	--	1
Acetone	ND		ug/kg	34	--	1
Carbon disulfide	ND		ug/kg	3.8	--	1
Methyl ethyl ketone	ND		ug/kg	9.5	--	1
Methyl isobutyl ketone	ND		ug/kg	9.5	--	1
2-Hexanone	ND		ug/kg	9.5	--	1
Bromochloromethane	ND		ug/kg	3.8	--	1
Tetrahydrofuran	ND		ug/kg	3.8	--	1
2,2-Dichloropropane	ND		ug/kg	4.8	--	1
1,2-Dibromoethane	ND		ug/kg	3.8	--	1
1,3-Dichloropropane	ND		ug/kg	3.8	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.95	--	1
Bromobenzene	ND		ug/kg	4.8	--	1
n-Butylbenzene	ND		ug/kg	0.95	--	1
sec-Butylbenzene	ND		ug/kg	0.95	--	1
tert-Butylbenzene	ND		ug/kg	3.8	--	1
o-Chlorotoluene	ND		ug/kg	3.8	--	1
p-Chlorotoluene	ND		ug/kg	3.8	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.8	--	1
Hexachlorobutadiene	ND		ug/kg	3.8	--	1
Isopropylbenzene	ND		ug/kg	0.95	--	1
p-Isopropyltoluene	ND		ug/kg	0.95	--	1
Naphthalene	ND		ug/kg	3.8	--	1
n-Propylbenzene	ND		ug/kg	0.95	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.8	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.8	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.8	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.8	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520045-04  
 Client ID: D-12 S-3 4'-6'  
 Sample Location: BOSTON, MA

Date Collected: 08/19/15 15:00  
 Date Received: 08/19/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	4.8	--	1
Diisopropyl Ether	ND		ug/kg	3.8	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.8	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.8	--	1
1,4-Dioxane	ND		ug/kg	38	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	97		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/25/15 08:47  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04 Batch: WG815396-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/25/15 08:47  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04 Batch: WG815396-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylene (Total)	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene (total)	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 08/25/15 08:47  
**Analyst:** BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04 Batch: WG815396-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Ethyl ether	ND		ug/kg	5.0	--
Isopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	97		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04 Batch: WG815396-1 WG815396-2								
Methylene chloride	102		106		70-130	4		20
1,1-Dichloroethane	109		111		70-130	2		20
Chloroform	101		103		70-130	2		20
Carbon tetrachloride	97		96		70-130	1		20
1,2-Dichloropropane	111		114		70-130	3		20
Dibromochloromethane	93		97		70-130	4		20
1,1,2-Trichloroethane	98		100		70-130	2		20
Tetrachloroethene	103		102		70-130	1		20
Chlorobenzene	103		106		70-130	3		20
Trichlorofluoromethane	96		92		70-130	4		20
1,2-Dichloroethane	95		96		70-130	1		20
1,1,1-Trichloroethane	99		97		70-130	2		20
Bromodichloromethane	100		102		70-130	2		20
trans-1,3-Dichloropropene	99		103		70-130	4		20
cis-1,3-Dichloropropene	105		107		70-130	2		20
1,1-Dichloropropene	107		104		70-130	3		20
Bromoform	85		87		70-130	2		20
1,1,2,2-Tetrachloroethane	89		91		70-130	2		20
Benzene	107		109		70-130	2		20
Toluene	106		107		70-130	1		20
Ethylbenzene	106		107		70-130	1		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04 Batch: WG815396-1 WG815396-2								
Chloromethane	121		122		70-130	1		20
Bromomethane	96		96		70-130	0		20
Vinyl chloride	113		110		70-130	3		20
Chloroethane	117		117		70-130	0		20
1,1-Dichloroethene	98		95		70-130	3		20
trans-1,2-Dichloroethene	104		104		70-130	0		20
Trichloroethene	103		103		70-130	0		20
1,2-Dichlorobenzene	100		102		70-130	2		20
1,3-Dichlorobenzene	104		108		70-130	4		20
1,4-Dichlorobenzene	103		106		70-130	3		20
Methyl tert butyl ether	92		94		70-130	2		20
p/m-Xylene	106		108		70-130	2		20
o-Xylene	106		107		70-130	1		20
cis-1,2-Dichloroethene	103		106		70-130	3		20
Dibromomethane	92		96		70-130	4		20
1,2,3-Trichloropropane	88		89		70-130	1		20
Styrene	105		108		70-130	3		20
Dichlorodifluoromethane	96		90		70-130	6		20
Acetone	104		102		70-130	2		20
Carbon disulfide	99		96		70-130	3		20
Methyl ethyl ketone	84		85		70-130	1		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04 Batch: WG815396-1 WG815396-2								
Methyl isobutyl ketone	80		81		70-130	1		20
2-Hexanone	78		79		70-130	1		20
Bromochloromethane	97		101		70-130	4		20
Tetrahydrofuran	84		84		70-130	0		20
2,2-Dichloropropane	106		104		70-130	2		20
1,2-Dibromoethane	90		93		70-130	3		20
1,3-Dichloropropane	98		102		70-130	4		20
1,1,1,2-Tetrachloroethane	100		103		70-130	3		20
Bromobenzene	100		104		70-130	4		20
n-Butylbenzene	112		111		70-130	1		20
sec-Butylbenzene	107		106		70-130	1		20
tert-Butylbenzene	105		104		70-130	1		20
o-Chlorotoluene	84		88		70-130	5		20
p-Chlorotoluene	107		109		70-130	2		20
1,2-Dibromo-3-chloropropane	73		73		70-130	0		20
Hexachlorobutadiene	104		103		70-130	1		20
Isopropylbenzene	105		104		70-130	1		20
p-Isopropyltoluene	107		107		70-130	0		20
Naphthalene	86		88		70-130	2		20
n-Propylbenzene	108		108		70-130	0		20
1,2,3-Trichlorobenzene	99		102		70-130	3		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04 Batch: WG815396-1 WG815396-2								
1,2,4-Trichlorobenzene	105		108		70-130	3		20
1,3,5-Trimethylbenzene	106		106		70-130	0		20
1,2,4-Trimethylbenzene	107		108		70-130	1		20
Diethyl ether	92		96		70-130	4		20
Diisopropyl Ether	112		117		70-130	4		20
Ethyl-Tert-Butyl-Ether	102		106		70-130	4		20
Tertiary-Amyl Methyl Ether	95		99		70-130	4		20
1,4-Dioxane	85		87		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	88		89		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	100		100		70-130
Dibromofluoromethane	96		95		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520045-03 D  
 Client ID: D-12 0'-6' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/24/15 16:30  
 Analyst: JB  
 Percent Solids: 86%

Date Collected: 08/19/15 15:00  
 Date Received: 08/19/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 05:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	310	--	2
1,2,4-Trichlorobenzene	ND		ug/kg	380	--	2
Hexachlorobenzene	ND		ug/kg	230	--	2
Bis(2-chloroethyl)ether	ND		ug/kg	340	--	2
2-Chloronaphthalene	ND		ug/kg	380	--	2
1,2-Dichlorobenzene	ND		ug/kg	380	--	2
1,3-Dichlorobenzene	ND		ug/kg	380	--	2
1,4-Dichlorobenzene	ND		ug/kg	380	--	2
3,3'-Dichlorobenzidine	ND		ug/kg	380	--	2
2,4-Dinitrotoluene	ND		ug/kg	380	--	2
2,6-Dinitrotoluene	ND		ug/kg	380	--	2
Azobenzene	ND		ug/kg	380	--	2
Fluoranthene	600		ug/kg	230	--	2
4-Bromophenyl phenyl ether	ND		ug/kg	380	--	2
Bis(2-chloroisopropyl)ether	ND		ug/kg	460	--	2
Bis(2-chloroethoxy)methane	ND		ug/kg	410	--	2
Hexachlorobutadiene	ND		ug/kg	380	--	2
Hexachloroethane	ND		ug/kg	310	--	2
Isophorone	ND		ug/kg	340	--	2
Naphthalene	ND		ug/kg	380	--	2
Nitrobenzene	ND		ug/kg	340	--	2
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	380	--	2
Butyl benzyl phthalate	ND		ug/kg	380	--	2
Di-n-butylphthalate	ND		ug/kg	380	--	2
Di-n-octylphthalate	ND		ug/kg	380	--	2
Diethyl phthalate	ND		ug/kg	380	--	2
Dimethyl phthalate	ND		ug/kg	380	--	2
Benzo(a)anthracene	310		ug/kg	230	--	2
Benzo(a)pyrene	ND		ug/kg	310	--	2
Benzo(b)fluoranthene	340		ug/kg	230	--	2



Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520045-03 D

Date Collected: 08/19/15 15:00

Client ID: D-12 0'-6' COMP

Date Received: 08/19/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	230	--	2
Chrysene	320		ug/kg	230	--	2
Acenaphthylene	ND		ug/kg	310	--	2
Anthracene	ND		ug/kg	230	--	2
Benzo(ghi)perylene	ND		ug/kg	310	--	2
Fluorene	ND		ug/kg	380	--	2
Phenanthrene	370		ug/kg	230	--	2
Dibenzo(a,h)anthracene	ND		ug/kg	230	--	2
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	310	--	2
Pyrene	530		ug/kg	230	--	2
Aniline	ND		ug/kg	460	--	2
4-Chloroaniline	ND		ug/kg	380	--	2
Dibenzofuran	ND		ug/kg	380	--	2
2-Methylnaphthalene	ND		ug/kg	460	--	2
Acetophenone	ND		ug/kg	380	--	2
2,4,6-Trichlorophenol	ND		ug/kg	230	--	2
2-Chlorophenol	ND		ug/kg	380	--	2
2,4-Dichlorophenol	ND		ug/kg	340	--	2
2,4-Dimethylphenol	ND		ug/kg	380	--	2
2-Nitrophenol	ND		ug/kg	830	--	2
4-Nitrophenol	ND		ug/kg	540	--	2
2,4-Dinitrophenol	ND		ug/kg	1800	--	2
Pentachlorophenol	ND		ug/kg	760	--	2
Phenol	ND		ug/kg	380	--	2
2-Methylphenol	ND		ug/kg	380	--	2
3-Methylphenol/4-Methylphenol	ND		ug/kg	550	--	2
2,4,5-Trichlorophenol	ND		ug/kg	380	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	81		30-130
Phenol-d6	88		30-130
Nitrobenzene-d5	84		30-130
2-Fluorobiphenyl	100		30-130
2,4,6-Tribromophenol	119		30-130
4-Terphenyl-d14	90		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/24/15 09:31  
**Analyst:** JB

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/23/15 02:52

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03 Batch: WG814759-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	97	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	97	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	190	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	97	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/24/15 09:31  
**Analyst:** JB

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/23/15 02:52

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03 Batch: WG814759-1					
Benzo(b)fluoranthene	ND		ug/kg	97	--
Benzo(k)fluoranthene	ND		ug/kg	97	--
Chrysene	ND		ug/kg	97	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	97	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	97	--
Dibenzo(a,h)anthracene	ND		ug/kg	97	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	97	--
Aniline	ND		ug/kg	190	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	190	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	97	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	320	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 97,8270D  
 Analytical Date: 08/24/15 09:31  
 Analyst: JB

Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 02:52

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03 Batch: WG814759-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	89		30-130
Phenol-d6	93		30-130
Nitrobenzene-d5	86		30-130
2-Fluorobiphenyl	83		30-130
2,4,6-Tribromophenol	74		30-130
4-Terphenyl-d14	99		30-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03 Batch: WG814759-2 WG814759-3								
Acenaphthene	99		104		40-140	5		30
1,2,4-Trichlorobenzene	99		101		40-140	2		30
Hexachlorobenzene	96		108		40-140	12		30
Bis(2-chloroethyl)ether	98		100		40-140	2		30
2-Chloronaphthalene	101		101		40-140	0		30
1,2-Dichlorobenzene	97		97		40-140	0		30
1,3-Dichlorobenzene	97		95		40-140	2		30
1,4-Dichlorobenzene	96		97		40-140	1		30
3,3'-Dichlorobenzidine	93		98		40-140	5		30
2,4-Dinitrotoluene	106		118		40-140	11		30
2,6-Dinitrotoluene	105		113		40-140	7		30
Azobenzene	104		111		40-140	7		30
Fluoranthene	108		119		40-140	10		30
4-Bromophenyl phenyl ether	102		111		40-140	8		30
Bis(2-chloroisopropyl)ether	106		108		40-140	2		30
Bis(2-chloroethoxy)methane	101		104		40-140	3		30
Hexachlorobutadiene	101		103		40-140	2		30
Hexachloroethane	98		99		40-140	1		30
Isophorone	102		106		40-140	4		30
Naphthalene	101		101		40-140	0		30
Nitrobenzene	105		106		40-140	1		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03 Batch: WG814759-2 WG814759-3								
Bis(2-Ethylhexyl)phthalate	111		126		40-140	13		30
Butyl benzyl phthalate	111		125		40-140	12		30
Di-n-butylphthalate	113		124		40-140	9		30
Di-n-octylphthalate	101		114		40-140	12		30
Diethyl phthalate	105		116		40-140	10		30
Dimethyl phthalate	104		113		40-140	8		30
Benzo(a)anthracene	107		118		40-140	10		30
Benzo(a)pyrene	111		122		40-140	9		30
Benzo(b)fluoranthene	113		123		40-140	8		30
Benzo(k)fluoranthene	101		114		40-140	12		30
Chrysene	100		108		40-140	8		30
Acenaphthylene	102		105		40-140	3		30
Anthracene	108		118		40-140	9		30
Benzo(ghi)perylene	107		115		40-140	7		30
Fluorene	105		111		40-140	6		30
Phenanthrene	102		111		40-140	8		30
Dibenzo(a,h)anthracene	110		120		40-140	9		30
Indeno(1,2,3-cd)Pyrene	112		118		40-140	5		30
Pyrene	105		116		40-140	10		30
Aniline	79		78		40-140	1		30
4-Chloroaniline	118		116		40-140	2		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03 Batch: WG814759-2 WG814759-3								
Dibenzofuran	100		106		40-140	6		30
2-Methylnaphthalene	102		104		40-140	2		30
Acetophenone	102		104		40-140	2		30
2,4,6-Trichlorophenol	106		111		30-130	5		30
2-Chlorophenol	104		108		30-130	4		30
2,4-Dichlorophenol	108		111		30-130	3		30
2,4-Dimethylphenol	114		118		30-130	3		30
2-Nitrophenol	101		107		30-130	6		30
4-Nitrophenol	106		122		30-130	14		30
2,4-Dinitrophenol	15	Q	22	Q	30-130	38	Q	30
Pentachlorophenol	76		87		30-130	13		30
Phenol	103		106		30-130	3		30
2-Methylphenol	105		110		30-130	5		30
3-Methylphenol/4-Methylphenol	107		111		30-130	4		30
2,4,5-Trichlorophenol	102		110		30-130	8		30

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
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MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03 Batch: WG814759-2 WG814759-3

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>
2-Fluorophenol	103		108		30-130
Phenol-d6	107		111		30-130
Nitrobenzene-d5	105		108		30-130
2-Fluorobiphenyl	99		101		30-130
2,4,6-Tribromophenol	96		107		30-130
4-Terphenyl-d14	100		112		30-130



# PETROLEUM HYDROCARBONS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520045-03 D  
 Client ID: D-12 0'-6' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/24/15 05:42  
 Analyst: AR  
 Percent Solids: 86%

Date Collected: 08/19/15 15:00  
 Date Received: 08/19/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/22/15 16:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	319000		ug/kg	189000	--	5
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	78		40-140

Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 1,8015C(M)  
 Analytical Date: 08/23/15 22:14  
 Analyst: AR

Extraction Method: EPA 3546  
 Extraction Date: 08/22/15 16:18

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01,03 Batch: WG814700-1					
TPH	ND		ug/kg	32100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	84		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01,03 Batch: WG814700-2								
TPH	66		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	77				40-140

# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520045-03  
**Client ID:** D-12 0'-6' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil  
**Analytical Method:** 97,8082A  
**Analytical Date:** 08/23/15 23:13  
**Analyst:** JT  
**Percent Solids:** 86%

**Date Collected:** 08/19/15 15:00  
**Date Received:** 08/19/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3546  
**Extraction Date:** 08/22/15 12:21  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 08/23/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 08/23/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	36.6	--	1	A
Aroclor 1221	ND		ug/kg	36.6	--	1	A
Aroclor 1232	ND		ug/kg	36.6	--	1	A
Aroclor 1242	ND		ug/kg	36.6	--	1	A
Aroclor 1248	ND		ug/kg	36.6	--	1	A
Aroclor 1254	ND		ug/kg	36.6	--	1	A
Aroclor 1260	ND		ug/kg	36.6	--	1	B
Aroclor 1262	ND		ug/kg	36.6	--	1	A
Aroclor 1268	ND		ug/kg	36.6	--	1	A
PCBs, Total	ND		ug/kg	36.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	A
Decachlorobiphenyl	39		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		30-150	B
Decachlorobiphenyl	63		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

**Method Blank Analysis  
 Batch Quality Control**

Analytical Method: 97,8082A  
 Analytical Date: 08/23/15 23:37  
 Analyst: JT

Extraction Method: EPA 3546  
 Extraction Date: 08/22/15 12:04  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/23/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/23/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01,03 Batch: WG814659-1						
Aroclor 1016	ND		ug/kg	31.9	--	A
Aroclor 1221	ND		ug/kg	31.9	--	A
Aroclor 1232	ND		ug/kg	31.9	--	A
Aroclor 1242	ND		ug/kg	31.9	--	A
Aroclor 1248	ND		ug/kg	31.9	--	A
Aroclor 1254	ND		ug/kg	31.9	--	A
Aroclor 1260	ND		ug/kg	31.9	--	A
Aroclor 1262	ND		ug/kg	31.9	--	A
Aroclor 1268	ND		ug/kg	31.9	--	A
PCBs, Total	ND		ug/kg	31.9	--	A

Surrogate	%Recovery	Qualifier	Acceptance	
			Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	38		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	61		30-150	B



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01,03 Batch: WG814659-2 WG814659-3									
Aroclor 1016	85		89		40-140	5		30	A
Aroclor 1260	57		62		40-140	8		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		71		30-150	A
Decachlorobiphenyl	39		42		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		65		30-150	B
Decachlorobiphenyl	62		63		30-150	B



## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520045-03  
 Client ID: D-12 0'-6' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 86%

Date Collected: 08/19/15 15:00  
 Date Received: 08/19/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	3.4		mg/kg	0.46	--	1	08/20/15 04:46	08/21/15 14:14	EPA 3050B	97,6010C	JH
Barium, Total	31		mg/kg	0.46	--	1	08/20/15 04:46	08/21/15 14:14	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.46	--	1	08/20/15 04:46	08/21/15 14:14	EPA 3050B	97,6010C	JH
Chromium, Total	11		mg/kg	0.46	--	1	08/20/15 04:46	08/21/15 14:14	EPA 3050B	97,6010C	JH
Lead, Total	19		mg/kg	2.3	--	1	08/20/15 04:46	08/21/15 14:14	EPA 3050B	97,6010C	JH
Mercury, Total	0.109		mg/kg	0.089	--	1	08/20/15 11:40	08/20/15 15:05	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.3	--	1	08/20/15 04:46	08/21/15 14:14	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.46	--	1	08/20/15 04:46	08/21/15 14:14	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01,03 Batch: WG813743-1									
Mercury, Total	ND	mg/kg	0.083	--	1	08/20/15 11:40	08/20/15 14:17	97,7471B	DB

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01,03 Batch: WG813749-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	08/20/15 04:46	08/21/15 11:25	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	08/20/15 04:46	08/21/15 11:25	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	08/20/15 04:46	08/21/15 11:25	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	08/20/15 04:46	08/21/15 11:25	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	08/20/15 04:46	08/21/15 11:25	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	08/20/15 04:46	08/21/15 11:25	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	08/20/15 04:46	08/21/15 11:25	97,6010C	JH

### Prep Information

Digestion Method: EPA 3050B

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 01,03 Batch: WG813743-2 WG813743-3 SRM Lot Number: D088-540								
Mercury, Total	113		106		72-128	6		30
MCP Total Metals - Westborough Lab Associated sample(s): 01,03 Batch: WG813749-2 WG813749-3 SRM Lot Number: D088-540								
Arsenic, Total	96		96		79-121	0		30
Barium, Total	94		88		83-117	7		30
Cadmium, Total	91		88		83-117	3		30
Chromium, Total	88		88		80-120	0		30
Lead, Total	83		81		81-117	2		30
Selenium, Total	97		97		78-122	0		30
Silver, Total	91		93		75-124	2		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

### SAMPLE RESULTS

**Lab ID:** L1520045-03  
**Client ID:** D-12 0'-6' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/19/15 15:00  
**Date Received:** 08/19/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Soil  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/21/15 12:01	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520045-03  
**Client ID:** D-12 0'-6' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/19/15 15:00  
**Date Received:** 08/19/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	100		umhos/cm	10	--	1	-	08/19/15 22:48	1,9050A	AS
Solids, Total	86.0		%	0.100	NA	1	-	08/19/15 21:56	30,2540G	RT
pH (H)	7.9		SU	-	NA	1	-	08/19/15 20:00	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/24/15 18:30	08/24/15 20:35	1,7.3	ML
Sulfide, Reactive	ND		mg/kg	10	--	1	08/24/15 18:30	08/24/15 20:10	1,7.3	ML



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1520045

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520045-04

Client ID: D-12 S-3 4'-6'

Sample Location: BOSTON, MA

Matrix: Soil

Date Collected: 08/19/15 15:00

Date Received: 08/19/15

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	86.0		%	0.100	NA	1	-	08/19/15 21:56	30,2540G	RT





Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,03 Batch: WG815128-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	08/24/15 18:30	08/24/15 20:28	1,7.3	ML
General Chemistry - Westborough Lab for sample(s): 01,03 Batch: WG815130-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	08/24/15 18:30	08/24/15 20:02	1,7.3	ML

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D

**Lab Number:** L1520045

**Project Number:** 4426.9.1D

**Report Date:** 08/26/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG813660-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG813688-1								
Specific Conductance	97		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG815128-2								
Cyanide, Reactive	42		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG815130-2								
Sulfide, Reactive	97		-		60-125	-		40

Project Name: FAN PIER PARCEL D

Lab Number: L1520045

Project Number: 4426.9.1D

Report Date: 08/26/15

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 08/19/2015 18:27

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1520045-01A	Glass 500ml/16oz unpreserved	A	N/A	5.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520045-02A	Vial MeOH preserved	A	N/A	5.8	Y	Absent	MCP-8260HLW-10(14)
L1520045-02B	Vial water preserved	A	N/A	5.8	Y	Absent	MCP-8260HLW-10(14)
L1520045-02C	Vial water preserved	A	N/A	5.8	Y	Absent	MCP-8260HLW-10(14)
L1520045-03A	Glass 500ml/16oz unpreserved	A	N/A	5.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520045-04A	Vial MeOH preserved	A	N/A	5.8	Y	Absent	MCP-8260HLW-10(14)
L1520045-04B	Vial water preserved	A	N/A	5.8	Y	Absent	MCP-8260HLW-10(14)
L1520045-04C	Vial water preserved	A	N/A	5.8	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

## 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.
LCS D	- 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

#### **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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520045  
**Report Date:** 08/26/15

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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, NO<sub>2</sub>, NO<sub>3</sub>.

**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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

# CHAIN OF CUSTODY

PAGE OF



## Project Information

Project Name: Fan Pier Parcel D

Project Location: Boston, MA

Project #: 4426.9.1D

Project Manager: Ben Downing/Peter DeChaves

ALPHA Quote #: Fan Pier Pricing

## Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Westborough, MA Mansfield, MA  
 TEL: 508-898-9220 TEL: 508-822-9300  
 FAX: 508-898-9193 FAX: 508-822-3288

## Client Information

Client: McPhail Associates, LLC  
 Address: 2269 Massachusetts Avenue  
 Cambridge, MA 02140  
 Phone: 6178681420

Fax: 6178681423  
 Email: bdowning@mcphailgeo.com

These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT  
 \*Denotes obtain total solid sample from composite sample.  
 \*\*Minus VOCs

Date Rec'd in Lab: 8/19/15

ALPHA Job #: L1520045

## Report Information Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

## Billing Information

Same as Client info PO #:

## Regulatory Requirements/Report Limits

State/Fed Program: MA Criteria: RCS-1

## MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

## ANALYSIS

VOCs (8260)*	Soil Management Package IV**																	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE HANDLING  
**Filtration**  
 Done  
 Not Needed  
 Lab to do  
**Preservation**  
 Lab to do  
 (Please specify below)

TOTAL # BOTTLES

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials														Sample Specific Comments	TOTAL # BOTTLES		
		Date	Time																			
20045-01	D-7 0'-6' Comp	8/19/15	3:00	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 16oz Amber	1	
02	D-7 S-2 2'-4'	8/19/15	3:00	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low 1 High	3
03	D-12 0'-6' Comp	8/19/15	3:00	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 16oz Amber	1
04	D-12 S-3 4'-6'	8/19/15	3:00	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low 1 High	3

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

IS YOUR PROJECT MA MCP or CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	8/19/15 3:00	<i>[Signature]</i>	8/19/15 1500
<i>[Signature]</i>	8/19/15 1812	<i>[Signature]</i>	8/19/15 1812

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



7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1520045

Instrument ID: Voal00.i      Calibration Date: 25-AUG-2015      Time: 07:28

Lab File ID: 0825A02      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.187	.1794	.1	-4	20	
chloromethane	.20766	.25188	.1	21	20	F
vinyl chloride	.21396	.24152	.1	13	20	
bromomethane	.13517	.13043	.1	-4	20	
chloroethane	.12913	.15154	.1	17	20	
trichlorofluoromethane	.24868	.2388	.1	-4	20	
ethyl ether	.12265	.11343	.05	-8	20	
1,1,-dichloroethene	.15676	.15343	.1	-2	20	
carbon disulfide	.60511	.60042	.1	-1	20	
methylene chloride	.20702	.21213	.1	2	20	
acetone	100	104	.1	4	20	
trans-1,2-dichloroethene	.18303	.19005	.1	4	20	
methyl tert butyl ether	.59541	.54562	.1	-8	20	
Diisopropyl Ether	.66228	.74447	.05	12	20	
1,1-dichloroethane	.37295	.40636	.2	9	20	
Ethyl-Tert-Butyl-Ether	.67262	.68546	.05	2	20	
cis-1,2-dichloroethene	.20399	.21049	.1	3	20	
2,2-dichloropropane	.27701	.29249	.05	6	20	
bromochloromethane	.09003	.08734	.05	-3	20	
chloroform	.35545	.3606	.2	1	20	
carbontetrachloride	.23543	.22871	.1	-3	20	
tetrahydrofuran	.07866	.06643	.05	-16	20	
1,1,1-trichloroethane	.28145	.27926	.1	-1	20	
2-butanone	.11217	.09383	.1	-16	20	
1,1-dichloropropene	.24964	.26692	.05	7	20	
benzene	.78204	.83832	.5	7	20	
Tertiary-Amyl Methyl Ether	.58171	.55319	.05	-5	20	
1,2-dichloroethane	.29909	.28279	.1	-5	20	
trichloroethene	.19209	.19767	.2	3	20	F
dibromomethane	.12744	.11676	.05	-8	20	
1,2-dichloropropane	.20856	.23219	.1	11	20	
bromodichloromethane	.27983	.27856	.2	0	20	
1,4-dioxane	.00226	.00193	.05	-15	20	F
cis-1,3-dichloropropene	.32828	.34381	.2	5	20	
toluene	.70265	.74134	.4	6	20	
4-methyl-2-pentanone	.09341	.0748	.1	-20	20	F
tetrachloroethene	.24354	.25037	.2	3	20	
trans-1,3-dichloropropene	.44951	.44515	.1	-1	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1520045

Instrument ID: Voal00.i      Calibration Date: 25-AUG-2015      Time: 07:28

Lab File ID: 0825A02      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.22462	.22053	.1	-2	20
chlorodibromomethane	.27986	.26096	.1	-7	20
1,3-dichloropropane	.4689	.4586	.05	-2	20
1,2-dibromoethane	.25199	.22796	.1	-10	20
2-hexanone	.25182	.19599	.1	-22	20
chlorobenzene	.72245	.74576	.5	3	20
ethyl benzene	1.321	1.4007	.1	6	20
1,1,1,2-tetrachloroethane	.25141	.25188	.05	0	20
p/m xylene	.4784	.50743	.1	6	20
o xylene	.4574	.48258	.3	6	20
styrene	.80709	.84857	.3	5	20
bromoform	.39095	.33341	.1	-15	20
isopropylbenzene	2.5014	2.6179	.1	5	20
bromobenzene	.58801	.58906	.05	0	20
n-propylbenzene	3.1176	3.3804	.05	8	20
1,1,2,2,-tetrachloroethane	.79665	.71252	.3	-11	20
2-chlorotoluene	1.9997	1.6819	.05	-16	20
1,3,5-trimethylbenzene	2.1494	2.2829	.05	6	20
1,2,3-trichloropropane	.6668	.58326	.05	-13	20
4-chlorotoluene	1.9179	2.0605	.05	7	20
tert-butylbenzene	1.6411	1.7187	.05	5	20
1,2,4-trimethylbenzene	2.1380	2.2837	.05	7	20
sec-butylbenzene	2.7032	2.9050	.05	7	20
p-isopropyltoluene	2.1196	2.2695	.05	7	20
1,3-dichlorobenzene	1.1313	1.1755	.6	4	20
1,4-dichlorobenzene	1.1563	1.1965	.5	3	20
n-butylbenzene	2.2066	2.4840	.05	13	20
1,2-dichlorobenzene	1.0944	1.0979	.4	0	20
1,2-dibromo-3-chloropropane	.11922	.08739	.05	-27	20
hexachlorobutadiene	.33792	.35017	.05	4	20
1,2,4-trichlorobenzene	.69367	.72804	.2	5	20
naphthalene	2.0354	1.7552	.05	-14	20
1,2,3-trichlorobenzene	.65938	.65429	.05	-1	20
dibromofluoromethane	.24097	.23052	.05	-4	30
1,2-dichloroethane-d4	.30902	.27235	.05	-12	30
toluene-d8	1.3369	1.3615	.05	2	30
4-bromofluorobenzene	1.0311	1.0338	.05	0	30

F

F

FORM VII MCP-8260HLW-10



## ANALYTICAL REPORT

Lab Number:	L1520179
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	08/26/15

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](http://www.alphalab.com)



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
<del>L1520179-01</del>	<del>D-4 0-6' COMP.</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/20/15 14:00</del>	<del>08/20/15</del>
<del>L1520179-02</del>	<del>D-4 S-1 0-2'</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/20/15 14:00</del>	<del>08/20/15</del>
L1520179-03	D-4 6-12' COMP.	SOIL	BOSTON, MA	08/20/15 14:00	08/20/15
L1520179-04	D-4 S-4 6-8'	SOIL	BOSTON, MA	08/20/15 14:00	08/20/15
L1520179-05	D-4 12-18' COMP.	SOIL	BOSTON, MA	08/20/15 14:00	08/20/15
L1520179-06	D-4 S-7 12-14'	SOIL	BOSTON, MA	08/20/15 14:00	08/20/15
L1520179-07	D-4 18-22' COMP.	SOIL	BOSTON, MA	08/20/15 14:00	08/20/15
L1520179-08	D-4 S-11 20-22'	SOIL	BOSTON, MA	08/20/15 14:00	08/20/15
L1520179-09	D-4 31-42' COMP.	SOIL	BOSTON, MA	08/20/15 14:00	08/20/15
L1520179-10	D-4 S-17 35-37'	SOIL	BOSTON, MA	08/20/15 14:00	08/20/15

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

### MADEP MCP Response Action Analytical Report Certification

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

### 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

The samples submitted for Volatile Organics were received without raw soil for the Total Solids analysis. The Total Solids results from the corresponding composite samples were utilized in the dry weight calculation of the Volatile Organics data.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1520179-02,-04,-06,-08, and -10, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.00162) and 4-methyl-2-pentanone (0.07493) as well as the average response factor for trichloroethene, 1,4-dioxane and 4-methyl-2-pentanone. The initial calibration verification is outside acceptance criteria for tetrahydrofuran (65%), but within overall method criteria.

The continuing calibration standard, associated with L1520179-02,-04,-06,-08, and -10, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

##### Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

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:

 Lisa Westerlind

Title: Technical Director/Representative

Date: 08/26/15

# ORGANICS



# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-04  
 Client ID: D-4 S-4 6-8'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/26/15 03:47  
 Analyst: PP  
 Percent Solids: 80%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	42	--	1
1,1-Dichloroethane	ND		ug/kg	6.3	--	1
Chloroform	ND		ug/kg	6.3	--	1
Carbon tetrachloride	ND		ug/kg	4.2	--	1
1,2-Dichloropropane	ND		ug/kg	15	--	1
Dibromochloromethane	ND		ug/kg	4.2	--	1
1,1,2-Trichloroethane	ND		ug/kg	6.3	--	1
Tetrachloroethene	ND		ug/kg	4.2	--	1
Chlorobenzene	ND		ug/kg	4.2	--	1
Trichlorofluoromethane	ND		ug/kg	17	--	1
1,2-Dichloroethane	ND		ug/kg	4.2	--	1
1,1,1-Trichloroethane	ND		ug/kg	4.2	--	1
Bromodichloromethane	ND		ug/kg	4.2	--	1
trans-1,3-Dichloropropene	ND		ug/kg	4.2	--	1
cis-1,3-Dichloropropene	ND		ug/kg	4.2	--	1
1,3-Dichloropropene, Total	ND		ug/kg	4.2	--	1
1,1-Dichloropropene	ND		ug/kg	17	--	1
Bromoform	ND		ug/kg	17	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	4.2	--	1
Benzene	ND		ug/kg	4.2	--	1
Toluene	ND		ug/kg	6.3	--	1
Ethylbenzene	ND		ug/kg	4.2	--	1
Chloromethane	ND		ug/kg	17	--	1
Bromomethane	ND		ug/kg	8.4	--	1
Vinyl chloride	ND		ug/kg	8.4	--	1
Chloroethane	ND		ug/kg	8.4	--	1
1,1-Dichloroethene	ND		ug/kg	4.2	--	1
trans-1,2-Dichloroethene	ND		ug/kg	6.3	--	1
Trichloroethene	ND		ug/kg	4.2	--	1
1,2-Dichlorobenzene	ND		ug/kg	17	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520179-04

Date Collected: 08/20/15 14:00

Client ID: D-4 S-4 6-8'

Date Received: 08/20/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	17	--	1
1,4-Dichlorobenzene	ND		ug/kg	17	--	1
Methyl tert butyl ether	ND		ug/kg	8.4	--	1
p/m-Xylene	ND		ug/kg	8.4	--	1
o-Xylene	ND		ug/kg	8.4	--	1
Xylenes, Total	ND		ug/kg	8.4	--	1
cis-1,2-Dichloroethene	ND		ug/kg	4.2	--	1
1,2-Dichloroethene, Total	ND		ug/kg	4.2	--	1
Dibromomethane	ND		ug/kg	17	--	1
1,2,3-Trichloropropane	ND		ug/kg	17	--	1
Styrene	ND		ug/kg	8.4	--	1
Dichlorodifluoromethane	ND		ug/kg	42	--	1
Acetone	ND		ug/kg	150	--	1
Carbon disulfide	22		ug/kg	17	--	1
Methyl ethyl ketone	ND		ug/kg	42	--	1
Methyl isobutyl ketone	ND		ug/kg	42	--	1
2-Hexanone	ND		ug/kg	42	--	1
Bromochloromethane	ND		ug/kg	17	--	1
Tetrahydrofuran	ND		ug/kg	17	--	1
2,2-Dichloropropane	ND		ug/kg	21	--	1
1,2-Dibromoethane	ND		ug/kg	17	--	1
1,3-Dichloropropane	ND		ug/kg	17	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	4.2	--	1
Bromobenzene	ND		ug/kg	21	--	1
n-Butylbenzene	ND		ug/kg	4.2	--	1
sec-Butylbenzene	ND		ug/kg	4.2	--	1
tert-Butylbenzene	ND		ug/kg	17	--	1
o-Chlorotoluene	ND		ug/kg	17	--	1
p-Chlorotoluene	ND		ug/kg	17	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	17	--	1
Hexachlorobutadiene	ND		ug/kg	17	--	1
Isopropylbenzene	ND		ug/kg	4.2	--	1
p-Isopropyltoluene	ND		ug/kg	4.2	--	1
Naphthalene	ND		ug/kg	17	--	1
n-Propylbenzene	ND		ug/kg	4.2	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	17	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	17	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	17	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	17	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-04  
 Client ID: D-4 S-4 6-8'  
 Sample Location: BOSTON, MA

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	21	--	1
Diisopropyl Ether	ND		ug/kg	17	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	17	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	17	--	1
1,4-Dioxane	ND		ug/kg	170	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	96		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-06  
 Client ID: D-4 S-7 12-14'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/26/15 04:14  
 Analyst: PP  
 Percent Solids: 77%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	38	--	1
1,1-Dichloroethane	ND		ug/kg	5.7	--	1
Chloroform	ND		ug/kg	5.7	--	1
Carbon tetrachloride	ND		ug/kg	3.8	--	1
1,2-Dichloropropane	ND		ug/kg	13	--	1
Dibromochloromethane	ND		ug/kg	3.8	--	1
1,1,2-Trichloroethane	ND		ug/kg	5.7	--	1
Tetrachloroethene	ND		ug/kg	3.8	--	1
Chlorobenzene	ND		ug/kg	3.8	--	1
Trichlorofluoromethane	ND		ug/kg	15	--	1
1,2-Dichloroethane	ND		ug/kg	3.8	--	1
1,1,1-Trichloroethane	ND		ug/kg	3.8	--	1
Bromodichloromethane	ND		ug/kg	3.8	--	1
trans-1,3-Dichloropropene	ND		ug/kg	3.8	--	1
cis-1,3-Dichloropropene	ND		ug/kg	3.8	--	1
1,3-Dichloropropene, Total	ND		ug/kg	3.8	--	1
1,1-Dichloropropene	ND		ug/kg	15	--	1
Bromoform	ND		ug/kg	15	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	3.8	--	1
Benzene	ND		ug/kg	3.8	--	1
Toluene	ND		ug/kg	5.7	--	1
Ethylbenzene	ND		ug/kg	3.8	--	1
Chloromethane	ND		ug/kg	15	--	1
Bromomethane	ND		ug/kg	7.6	--	1
Vinyl chloride	ND		ug/kg	7.6	--	1
Chloroethane	ND		ug/kg	7.6	--	1
1,1-Dichloroethene	ND		ug/kg	3.8	--	1
trans-1,2-Dichloroethene	ND		ug/kg	5.7	--	1
Trichloroethene	ND		ug/kg	3.8	--	1
1,2-Dichlorobenzene	ND		ug/kg	15	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520179-06

Date Collected: 08/20/15 14:00

Client ID: D-4 S-7 12-14'

Date Received: 08/20/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	15	--	1
1,4-Dichlorobenzene	ND		ug/kg	15	--	1
Methyl tert butyl ether	ND		ug/kg	7.6	--	1
p/m-Xylene	ND		ug/kg	7.6	--	1
o-Xylene	ND		ug/kg	7.6	--	1
Xylenes, Total	ND		ug/kg	7.6	--	1
cis-1,2-Dichloroethene	ND		ug/kg	3.8	--	1
1,2-Dichloroethene, Total	ND		ug/kg	3.8	--	1
Dibromomethane	ND		ug/kg	15	--	1
1,2,3-Trichloropropane	ND		ug/kg	15	--	1
Styrene	ND		ug/kg	7.6	--	1
Dichlorodifluoromethane	ND		ug/kg	38	--	1
Acetone	ND		ug/kg	140	--	1
Carbon disulfide	ND		ug/kg	15	--	1
Methyl ethyl ketone	ND		ug/kg	38	--	1
Methyl isobutyl ketone	ND		ug/kg	38	--	1
2-Hexanone	ND		ug/kg	38	--	1
Bromochloromethane	ND		ug/kg	15	--	1
Tetrahydrofuran	ND		ug/kg	15	--	1
2,2-Dichloropropane	ND		ug/kg	19	--	1
1,2-Dibromoethane	ND		ug/kg	15	--	1
1,3-Dichloropropane	ND		ug/kg	15	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	3.8	--	1
Bromobenzene	ND		ug/kg	19	--	1
n-Butylbenzene	ND		ug/kg	3.8	--	1
sec-Butylbenzene	ND		ug/kg	3.8	--	1
tert-Butylbenzene	ND		ug/kg	15	--	1
o-Chlorotoluene	ND		ug/kg	15	--	1
p-Chlorotoluene	ND		ug/kg	15	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	15	--	1
Hexachlorobutadiene	ND		ug/kg	15	--	1
Isopropylbenzene	ND		ug/kg	3.8	--	1
p-Isopropyltoluene	ND		ug/kg	3.8	--	1
Naphthalene	ND		ug/kg	15	--	1
n-Propylbenzene	ND		ug/kg	3.8	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	15	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	15	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	15	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	15	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-06  
 Client ID: D-4 S-7 12-14'  
 Sample Location: BOSTON, MA

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	19	--	1
Diisopropyl Ether	ND		ug/kg	15	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	15	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	15	--	1
1,4-Dioxane	ND		ug/kg	150	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	97		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-08  
 Client ID: D-4 S-11 20-22'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/26/15 04:40  
 Analyst: PP  
 Percent Solids: 73%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	57	--	1
1,1-Dichloroethane	ND		ug/kg	8.6	--	1
Chloroform	ND		ug/kg	8.6	--	1
Carbon tetrachloride	ND		ug/kg	5.7	--	1
1,2-Dichloropropane	ND		ug/kg	20	--	1
Dibromochloromethane	ND		ug/kg	5.7	--	1
1,1,2-Trichloroethane	ND		ug/kg	8.6	--	1
Tetrachloroethene	ND		ug/kg	5.7	--	1
Chlorobenzene	ND		ug/kg	5.7	--	1
Trichlorofluoromethane	ND		ug/kg	23	--	1
1,2-Dichloroethane	ND		ug/kg	5.7	--	1
1,1,1-Trichloroethane	ND		ug/kg	5.7	--	1
Bromodichloromethane	ND		ug/kg	5.7	--	1
trans-1,3-Dichloropropene	ND		ug/kg	5.7	--	1
cis-1,3-Dichloropropene	ND		ug/kg	5.7	--	1
1,3-Dichloropropene, Total	ND		ug/kg	5.7	--	1
1,1-Dichloropropene	ND		ug/kg	23	--	1
Bromoform	ND		ug/kg	23	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	5.7	--	1
Benzene	ND		ug/kg	5.7	--	1
Toluene	ND		ug/kg	8.6	--	1
Ethylbenzene	ND		ug/kg	5.7	--	1
Chloromethane	ND		ug/kg	23	--	1
Bromomethane	ND		ug/kg	11	--	1
Vinyl chloride	ND		ug/kg	11	--	1
Chloroethane	ND		ug/kg	11	--	1
1,1-Dichloroethene	ND		ug/kg	5.7	--	1
trans-1,2-Dichloroethene	ND		ug/kg	8.6	--	1
Trichloroethene	ND		ug/kg	5.7	--	1
1,2-Dichlorobenzene	ND		ug/kg	23	--	1



Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520179-08  
 Client ID: D-4 S-11 20-22'  
 Sample Location: BOSTON, MA

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	23	--	1
1,4-Dichlorobenzene	ND		ug/kg	23	--	1
Methyl tert butyl ether	ND		ug/kg	11	--	1
p/m-Xylene	ND		ug/kg	11	--	1
o-Xylene	ND		ug/kg	11	--	1
Xylenes, Total	ND		ug/kg	11	--	1
cis-1,2-Dichloroethene	ND		ug/kg	5.7	--	1
1,2-Dichloroethene, Total	ND		ug/kg	5.7	--	1
Dibromomethane	ND		ug/kg	23	--	1
1,2,3-Trichloropropane	ND		ug/kg	23	--	1
Styrene	ND		ug/kg	11	--	1
Dichlorodifluoromethane	ND		ug/kg	57	--	1
Acetone	ND		ug/kg	200	--	1
Carbon disulfide	ND		ug/kg	23	--	1
Methyl ethyl ketone	ND		ug/kg	57	--	1
Methyl isobutyl ketone	ND		ug/kg	57	--	1
2-Hexanone	ND		ug/kg	57	--	1
Bromochloromethane	ND		ug/kg	23	--	1
Tetrahydrofuran	ND		ug/kg	23	--	1
2,2-Dichloropropane	ND		ug/kg	28	--	1
1,2-Dibromoethane	ND		ug/kg	23	--	1
1,3-Dichloropropane	ND		ug/kg	23	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	5.7	--	1
Bromobenzene	ND		ug/kg	28	--	1
n-Butylbenzene	ND		ug/kg	5.7	--	1
sec-Butylbenzene	ND		ug/kg	5.7	--	1
tert-Butylbenzene	ND		ug/kg	23	--	1
o-Chlorotoluene	ND		ug/kg	23	--	1
p-Chlorotoluene	ND		ug/kg	23	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	23	--	1
Hexachlorobutadiene	ND		ug/kg	23	--	1
Isopropylbenzene	ND		ug/kg	5.7	--	1
p-Isopropyltoluene	ND		ug/kg	5.7	--	1
Naphthalene	ND		ug/kg	23	--	1
n-Propylbenzene	ND		ug/kg	5.7	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	23	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	23	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	23	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	23	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-08  
 Client ID: D-4 S-11 20-22'  
 Sample Location: BOSTON, MA

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	28	--	1
Diisopropyl Ether	ND		ug/kg	23	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	23	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	23	--	1
1,4-Dioxane	ND		ug/kg	230	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	97		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-10  
 Client ID: D-4 S-17 35-37'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/26/15 05:06  
 Analyst: PP  
 Percent Solids: 79%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	20	--	1
1,1-Dichloroethane	ND		ug/kg	3.0	--	1
Chloroform	ND		ug/kg	3.0	--	1
Carbon tetrachloride	ND		ug/kg	2.0	--	1
1,2-Dichloropropane	ND		ug/kg	6.9	--	1
Dibromochloromethane	ND		ug/kg	2.0	--	1
1,1,2-Trichloroethane	ND		ug/kg	3.0	--	1
Tetrachloroethene	ND		ug/kg	2.0	--	1
Chlorobenzene	ND		ug/kg	2.0	--	1
Trichlorofluoromethane	ND		ug/kg	7.9	--	1
1,2-Dichloroethane	ND		ug/kg	2.0	--	1
1,1,1-Trichloroethane	ND		ug/kg	2.0	--	1
Bromodichloromethane	ND		ug/kg	2.0	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.0	--	1
cis-1,3-Dichloropropene	ND		ug/kg	2.0	--	1
1,3-Dichloropropene, Total	ND		ug/kg	2.0	--	1
1,1-Dichloropropene	ND		ug/kg	7.9	--	1
Bromoform	ND		ug/kg	7.9	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	2.0	--	1
Benzene	ND		ug/kg	2.0	--	1
Toluene	ND		ug/kg	3.0	--	1
Ethylbenzene	ND		ug/kg	2.0	--	1
Chloromethane	ND		ug/kg	7.9	--	1
Bromomethane	ND		ug/kg	4.0	--	1
Vinyl chloride	ND		ug/kg	4.0	--	1
Chloroethane	ND		ug/kg	4.0	--	1
1,1-Dichloroethene	ND		ug/kg	2.0	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.0	--	1
Trichloroethene	ND		ug/kg	2.0	--	1
1,2-Dichlorobenzene	ND		ug/kg	7.9	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520179-10  
 Client ID: D-4 S-17 35-37'  
 Sample Location: BOSTON, MA

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	7.9	--	1
1,4-Dichlorobenzene	ND		ug/kg	7.9	--	1
Methyl tert butyl ether	ND		ug/kg	4.0	--	1
p/m-Xylene	ND		ug/kg	4.0	--	1
o-Xylene	ND		ug/kg	4.0	--	1
Xylenes, Total	ND		ug/kg	4.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.0	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.0	--	1
Dibromomethane	ND		ug/kg	7.9	--	1
1,2,3-Trichloropropane	ND		ug/kg	7.9	--	1
Styrene	ND		ug/kg	4.0	--	1
Dichlorodifluoromethane	ND		ug/kg	20	--	1
Acetone	ND		ug/kg	71	--	1
Carbon disulfide	ND		ug/kg	7.9	--	1
Methyl ethyl ketone	ND		ug/kg	20	--	1
Methyl isobutyl ketone	ND		ug/kg	20	--	1
2-Hexanone	ND		ug/kg	20	--	1
Bromochloromethane	ND		ug/kg	7.9	--	1
Tetrahydrofuran	ND		ug/kg	7.9	--	1
2,2-Dichloropropane	ND		ug/kg	9.9	--	1
1,2-Dibromoethane	ND		ug/kg	7.9	--	1
1,3-Dichloropropane	ND		ug/kg	7.9	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	2.0	--	1
Bromobenzene	ND		ug/kg	9.9	--	1
n-Butylbenzene	ND		ug/kg	2.0	--	1
sec-Butylbenzene	ND		ug/kg	2.0	--	1
tert-Butylbenzene	ND		ug/kg	7.9	--	1
o-Chlorotoluene	ND		ug/kg	7.9	--	1
p-Chlorotoluene	ND		ug/kg	7.9	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	7.9	--	1
Hexachlorobutadiene	ND		ug/kg	7.9	--	1
Isopropylbenzene	ND		ug/kg	2.0	--	1
p-Isopropyltoluene	ND		ug/kg	2.0	--	1
Naphthalene	ND		ug/kg	7.9	--	1
n-Propylbenzene	ND		ug/kg	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	7.9	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	7.9	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	7.9	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	7.9	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-10  
 Client ID: D-4 S-17 35-37'  
 Sample Location: BOSTON, MA

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	9.9	--	1
Diisopropyl Ether	ND		ug/kg	7.9	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	7.9	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	7.9	--	1
1,4-Dioxane	ND		ug/kg	79	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	97		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/25/15 21:13  
Analyst: PP

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG815712-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/25/15 21:13  
Analyst: PP

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG815712-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylene (Total)	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene (total)	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 08/25/15 21:13  
**Analyst:** PP

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG815712-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Ethyl ether	ND		ug/kg	5.0	--
Isopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	96		70-130



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG815712-1 WG815712-2								
Methylene chloride	104		106		70-130	2		20
1,1-Dichloroethane	111		116		70-130	4		20
Chloroform	102		108		70-130	6		20
Carbon tetrachloride	100		106		70-130	6		20
1,2-Dichloropropane	114		116		70-130	2		20
Dibromochloromethane	97		100		70-130	3		20
1,1,2-Trichloroethane	102		103		70-130	1		20
Tetrachloroethene	106		111		70-130	5		20
Chlorobenzene	105		109		70-130	4		20
Trichlorofluoromethane	92		97		70-130	5		20
1,2-Dichloroethane	97		99		70-130	2		20
1,1,1-Trichloroethane	100		105		70-130	5		20
Bromodichloromethane	102		102		70-130	0		20
trans-1,3-Dichloropropene	103		105		70-130	2		20
cis-1,3-Dichloropropene	108		110		70-130	2		20
1,1-Dichloropropene	109		115		70-130	5		20
Bromoform	88		88		70-130	0		20
1,1,2,2-Tetrachloroethane	93		94		70-130	1		20
Benzene	109		113		70-130	4		20
Toluene	107		112		70-130	5		20
Ethylbenzene	107		111		70-130	4		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG815712-1 WG815712-2								
Chloromethane	120		125		70-130	4		20
Bromomethane	89		92		70-130	3		20
Vinyl chloride	111		117		70-130	5		20
Chloroethane	113		117		70-130	3		20
1,1-Dichloroethene	103		109		70-130	6		20
trans-1,2-Dichloroethene	104		110		70-130	6		20
Trichloroethene	106		109		70-130	3		20
1,2-Dichlorobenzene	100		101		70-130	1		20
1,3-Dichlorobenzene	104		107		70-130	3		20
1,4-Dichlorobenzene	104		105		70-130	1		20
Methyl tert butyl ether	95		98		70-130	3		20
p/m-Xylene	109		113		70-130	4		20
o-Xylene	107		110		70-130	3		20
cis-1,2-Dichloroethene	104		107		70-130	3		20
Dibromomethane	97		97		70-130	0		20
1,2,3-Trichloropropane	92		92		70-130	0		20
Styrene	107		109		70-130	2		20
Dichlorodifluoromethane	89		95		70-130	7		20
Acetone	119		122		70-130	2		20
Carbon disulfide	102		108		70-130	6		20
Methyl ethyl ketone	99		97		70-130	2		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG815712-1 WG815712-2								
Methyl isobutyl ketone	94		88		70-130	7		20
2-Hexanone	86		87		70-130	1		20
Bromochloromethane	101		102		70-130	1		20
Tetrahydrofuran	94		93		70-130	1		20
2,2-Dichloropropane	108		112		70-130	4		20
1,2-Dibromoethane	95		95		70-130	0		20
1,3-Dichloropropane	102		104		70-130	2		20
1,1,1,2-Tetrachloroethane	101		106		70-130	5		20
Bromobenzene	100		103		70-130	3		20
n-Butylbenzene	113		116		70-130	3		20
sec-Butylbenzene	108		113		70-130	5		20
tert-Butylbenzene	104		109		70-130	5		20
o-Chlorotoluene	85		105		70-130	21	Q	20
p-Chlorotoluene	107		110		70-130	3		20
1,2-Dibromo-3-chloropropane	80		80		70-130	0		20
Hexachlorobutadiene	106		110		70-130	4		20
Isopropylbenzene	104		109		70-130	5		20
p-Isopropyltoluene	107		112		70-130	5		20
Naphthalene	93		94		70-130	1		20
n-Propylbenzene	108		112		70-130	4		20
1,2,3-Trichlorobenzene	104		106		70-130	2		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG815712-1 WG815712-2								
1,2,4-Trichlorobenzene	106		108		70-130	2		20
1,3,5-Trimethylbenzene	106		109		70-130	3		20
1,2,4-Trimethylbenzene	107		110		70-130	3		20
Diethyl ether	92		94		70-130	2		20
Diisopropyl Ether	113		118		70-130	4		20
Ethyl-Tert-Butyl-Ether	104		107		70-130	3		20
Tertiary-Amyl Methyl Ether	99		102		70-130	3		20
1,4-Dioxane	97		95		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90		89		70-130
Toluene-d8	100		102		70-130
4-Bromofluorobenzene	98		99		70-130
Dibromofluoromethane	95		95		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-03  
 Client ID: D-4 6-12' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/25/15 20:42  
 Analyst: AS  
 Percent Solids: 80%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520179-03  
**Client ID:** D-4 6-12' COMP.  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/20/15 14:00  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	440	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	970	--	1
Pentachlorophenol	ND		ug/kg	400	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	81		30-130
Phenol-d6	83		30-130
Nitrobenzene-d5	83		30-130
2-Fluorobiphenyl	75		30-130
2,4,6-Tribromophenol	83		30-130
4-Terphenyl-d14	64		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-05  
 Client ID: D-4 12-18' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/25/15 21:07  
 Analyst: AS  
 Percent Solids: 77%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	260	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	230	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520179-05  
**Client ID:** D-4 12-18' COMP.  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/20/15 14:00  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	130	--	1
Aniline	ND		ug/kg	260	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	260	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	460	--	1
4-Nitrophenol	ND		ug/kg	300	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	430	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	310	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		30-130
Phenol-d6	76		30-130
Nitrobenzene-d5	68		30-130
2-Fluorobiphenyl	50		30-130
2,4,6-Tribromophenol	73		30-130
4-Terphenyl-d14	<b>28</b>	Q	30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-07  
 Client ID: D-4 18-22' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/25/15 21:32  
 Analyst: AS  
 Percent Solids: 73%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	180	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	220	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	200	--	1
2-Chloronaphthalene	ND		ug/kg	220	--	1
1,2-Dichlorobenzene	ND		ug/kg	220	--	1
1,3-Dichlorobenzene	ND		ug/kg	220	--	1
1,4-Dichlorobenzene	ND		ug/kg	220	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	220	--	1
2,4-Dinitrotoluene	ND		ug/kg	220	--	1
2,6-Dinitrotoluene	ND		ug/kg	220	--	1
Azobenzene	ND		ug/kg	220	--	1
Fluoranthene	ND		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	220	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	270	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	240	--	1
Hexachlorobutadiene	ND		ug/kg	220	--	1
Hexachloroethane	ND		ug/kg	180	--	1
Isophorone	ND		ug/kg	200	--	1
Naphthalene	ND		ug/kg	220	--	1
Nitrobenzene	ND		ug/kg	200	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	220	--	1
Butyl benzyl phthalate	ND		ug/kg	220	--	1
Di-n-butylphthalate	ND		ug/kg	220	--	1
Di-n-octylphthalate	ND		ug/kg	220	--	1
Diethyl phthalate	ND		ug/kg	220	--	1
Dimethyl phthalate	ND		ug/kg	220	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	180	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520179-07  
 Client ID: D-4 18-22' COMP.  
 Sample Location: BOSTON, MA

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	180	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	180	--	1
Fluorene	ND		ug/kg	220	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	180	--	1
Pyrene	ND		ug/kg	130	--	1
Aniline	ND		ug/kg	270	--	1
4-Chloroaniline	ND		ug/kg	220	--	1
Dibenzofuran	ND		ug/kg	220	--	1
2-Methylnaphthalene	ND		ug/kg	270	--	1
Acetophenone	ND		ug/kg	220	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	220	--	1
2,4-Dichlorophenol	ND		ug/kg	200	--	1
2,4-Dimethylphenol	ND		ug/kg	220	--	1
2-Nitrophenol	ND		ug/kg	480	--	1
4-Nitrophenol	ND		ug/kg	310	--	1
2,4-Dinitrophenol	ND		ug/kg	1100	--	1
Pentachlorophenol	ND		ug/kg	450	--	1
Phenol	ND		ug/kg	220	--	1
2-Methylphenol	ND		ug/kg	220	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	320	--	1
2,4,5-Trichlorophenol	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		30-130
Phenol-d6	78		30-130
Nitrobenzene-d5	77		30-130
2-Fluorobiphenyl	60		30-130
2,4,6-Tribromophenol	82		30-130
4-Terphenyl-d14	51		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-09  
 Client ID: D-4 31-42' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/25/15 21:57  
 Analyst: AS  
 Percent Solids: 79%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	230	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520179-09  
**Client ID:** D-4 31-42' COMP.  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/20/15 14:00  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	420	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		30-130
Phenol-d6	69		30-130
Nitrobenzene-d5	69		30-130
2-Fluorobiphenyl	65		30-130
2,4,6-Tribromophenol	88		30-130
4-Terphenyl-d14	77		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 08/25/15 09:26  
Analyst: AS

Extraction Method: EPA 3546  
Extraction Date: 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815140-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/25/15 09:26  
**Analyst:** AS

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815140-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 08/25/15 09:26  
Analyst: AS

Extraction Method: EPA 3546  
Extraction Date: 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815140-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	77		30-130
Phenol-d6	81		30-130
Nitrobenzene-d5	76		30-130
2-Fluorobiphenyl	75		30-130
2,4,6-Tribromophenol	80		30-130
4-Terphenyl-d14	79		30-130



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815140-2 WG815140-3								
Acenaphthene	66		69		40-140	4		30
1,2,4-Trichlorobenzene	48		62		40-140	25		30
Hexachlorobenzene	77		69		40-140	11		30
Bis(2-chloroethyl)ether	46		63		40-140	31	Q	30
2-Chloronaphthalene	59		70		40-140	17		30
1,2-Dichlorobenzene	43		61		40-140	35	Q	30
1,3-Dichlorobenzene	40		62		40-140	43	Q	30
1,4-Dichlorobenzene	41		61		40-140	39	Q	30
3,3'-Dichlorobenzidine	89		68		40-140	27		30
2,4-Dinitrotoluene	79		73		40-140	8		30
2,6-Dinitrotoluene	77		74		40-140	4		30
Azobenzene	75		72		40-140	4		30
Fluoranthene	83		71		40-140	16		30
4-Bromophenyl phenyl ether	78		71		40-140	9		30
Bis(2-chloroisopropyl)ether	49		64		40-140	27		30
Bis(2-chloroethoxy)methane	54		71		40-140	27		30
Hexachlorobutadiene	45		58		40-140	25		30
Hexachloroethane	38	Q	59		40-140	43	Q	30
Isophorone	60		72		40-140	18		30
Naphthalene	48		63		40-140	27		30
Nitrobenzene	49		65		40-140	28		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815140-2 WG815140-3								
Bis(2-Ethylhexyl)phthalate	94		80		40-140	16		30
Butyl benzyl phthalate	85		74		40-140	14		30
Di-n-butylphthalate	87		74		40-140	16		30
Di-n-octylphthalate	92		80		40-140	14		30
Diethyl phthalate	80		71		40-140	12		30
Dimethyl phthalate	78		72		40-140	8		30
Benzo(a)anthracene	87		75		40-140	15		30
Benzo(a)pyrene	83		70		40-140	17		30
Benzo(b)fluoranthene	83		73		40-140	13		30
Benzo(k)fluoranthene	83		70		40-140	17		30
Chrysene	85		73		40-140	15		30
Acenaphthylene	66		70		40-140	6		30
Anthracene	86		75		40-140	14		30
Benzo(ghi)perylene	77		69		40-140	11		30
Fluorene	74		70		40-140	6		30
Phenanthrene	81		70		40-140	15		30
Dibenzo(a,h)anthracene	78		71		40-140	9		30
Indeno(1,2,3-cd)Pyrene	90		80		40-140	12		30
Pyrene	83		71		40-140	16		30
Aniline	50		64		40-140	25		30
4-Chloroaniline	62		70		40-140	12		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815140-2 WG815140-3								
Dibenzofuran	69		69		40-140	0		30
2-Methylnaphthalene	54		68		40-140	23		30
Acetophenone	48		63		40-140	27		30
2,4,6-Trichlorophenol	72		74		30-130	3		30
2-Chlorophenol	50		68		30-130	31	Q	30
2,4-Dichlorophenol	58		71		30-130	20		30
2,4-Dimethylphenol	62		74		30-130	18		30
2-Nitrophenol	45		68		30-130	41	Q	30
4-Nitrophenol	83		62		30-130	29		30
2,4-Dinitrophenol	13	Q	65		30-130	133	Q	30
Pentachlorophenol	77		66		30-130	15		30
Phenol	54		72		30-130	29		30
2-Methylphenol	54		72		30-130	29		30
3-Methylphenol/4-Methylphenol	62		78		30-130	23		30
2,4,5-Trichlorophenol	75		68		30-130	10		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815140-2 WG815140-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	50		69		30-130
Phenol-d6	56		75		30-130
Nitrobenzene-d5	53		71		30-130
2-Fluorobiphenyl	60		71		30-130
2,4,6-Tribromophenol	90		79		30-130
4-Terphenyl-d14	86		74		30-130

# PETROLEUM HYDROCARBONS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-03  
 Client ID: D-4 6-12' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/24/15 13:52  
 Analyst: AR  
 Percent Solids: 80%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 21:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	40700	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	87		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-05  
 Client ID: D-4 12-18' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/24/15 17:00  
 Analyst: AR  
 Percent Solids: 77%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 21:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
--	--	--	--	--	--	--

TPH	ND		ug/kg	42500	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	82		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-07  
 Client ID: D-4 18-22' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/24/15 14:35  
 Analyst: AR  
 Percent Solids: 73%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 21:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	53900		ug/kg	44100	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	98		40-140



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-09  
 Client ID: D-4 31-42' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/24/15 17:36  
 Analyst: AR  
 Percent Solids: 79%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 21:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	40900	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	93		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8015C(M)  
**Analytical Date:** 08/24/15 10:51  
**Analyst:** AR

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/23/15 21:56

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG814877-1					
TPH	ND		ug/kg	32600	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	93		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814877-2								
TPH	76		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	84				40-140

# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520179-03  
**Client ID:** D-4 6-12' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil  
**Analytical Method:** 97,8082A  
**Analytical Date:** 08/25/15 17:00  
**Analyst:** JT  
**Percent Solids:** 80%

**Date Collected:** 08/20/15 14:00  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3546  
**Extraction Date:** 08/23/15 20:12  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 08/24/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 08/24/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	40.6	--	1	A
Aroclor 1221	ND		ug/kg	40.6	--	1	A
Aroclor 1232	ND		ug/kg	40.6	--	1	A
Aroclor 1242	ND		ug/kg	40.6	--	1	A
Aroclor 1248	ND		ug/kg	40.6	--	1	A
Aroclor 1254	ND		ug/kg	40.6	--	1	A
Aroclor 1260	ND		ug/kg	40.6	--	1	A
Aroclor 1262	ND		ug/kg	40.6	--	1	A
Aroclor 1268	ND		ug/kg	40.6	--	1	A
PCBs, Total	ND		ug/kg	40.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	93		30-150	A
2,4,5,6-Tetrachloro-m-xylene	91		30-150	B
Decachlorobiphenyl	91		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520179-05  
**Client ID:** D-4 12-18' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil  
**Analytical Method:** 97,8082A  
**Analytical Date:** 08/25/15 17:17  
**Analyst:** JT  
**Percent Solids:** 77%

**Date Collected:** 08/20/15 14:00  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3546  
**Extraction Date:** 08/23/15 20:12  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 08/24/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 08/24/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	42.4	--	1	A
Aroclor 1221	ND		ug/kg	42.4	--	1	A
Aroclor 1232	ND		ug/kg	42.4	--	1	A
Aroclor 1242	ND		ug/kg	42.4	--	1	A
Aroclor 1248	ND		ug/kg	42.4	--	1	A
Aroclor 1254	ND		ug/kg	42.4	--	1	A
Aroclor 1260	ND		ug/kg	42.4	--	1	A
Aroclor 1262	ND		ug/kg	42.4	--	1	A
Aroclor 1268	ND		ug/kg	42.4	--	1	A
PCBs, Total	ND		ug/kg	42.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	A
Decachlorobiphenyl	85		30-150	A
2,4,5,6-Tetrachloro-m-xylene	85		30-150	B
Decachlorobiphenyl	85		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-07  
 Client ID: D-4 18-22' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/25/15 17:35  
 Analyst: JT  
 Percent Solids: 73%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 20:12  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/24/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/24/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	44.7	--	1	A
Aroclor 1221	ND		ug/kg	44.7	--	1	A
Aroclor 1232	ND		ug/kg	44.7	--	1	A
Aroclor 1242	ND		ug/kg	44.7	--	1	A
Aroclor 1248	ND		ug/kg	44.7	--	1	A
Aroclor 1254	ND		ug/kg	44.7	--	1	A
Aroclor 1260	ND		ug/kg	44.7	--	1	A
Aroclor 1262	ND		ug/kg	44.7	--	1	A
Aroclor 1268	ND		ug/kg	44.7	--	1	A
PCBs, Total	ND		ug/kg	44.7	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	82		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	80		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-09  
 Client ID: D-4 31-42' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/25/15 17:49  
 Analyst: JT  
 Percent Solids: 79%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 20:12  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/24/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/24/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	41.7	--	1	A
Aroclor 1221	ND		ug/kg	41.7	--	1	A
Aroclor 1232	ND		ug/kg	41.7	--	1	A
Aroclor 1242	ND		ug/kg	41.7	--	1	A
Aroclor 1248	ND		ug/kg	41.7	--	1	A
Aroclor 1254	ND		ug/kg	41.7	--	1	A
Aroclor 1260	ND		ug/kg	41.7	--	1	A
Aroclor 1262	ND		ug/kg	41.7	--	1	A
Aroclor 1268	ND		ug/kg	41.7	--	1	A
PCBs, Total	ND		ug/kg	41.7	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		30-150	A
Decachlorobiphenyl	92		30-150	A
2,4,5,6-Tetrachloro-m-xylene	86		30-150	B
Decachlorobiphenyl	90		30-150	B



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**Method Blank Analysis  
 Batch Quality Control**

Analytical Method: 97,8082A  
 Analytical Date: 08/25/15 15:40  
 Analyst: JT

Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 20:12  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/24/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/24/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG814866-1						
Aroclor 1016	ND		ug/kg	32.7	--	A
Aroclor 1221	ND		ug/kg	32.7	--	A
Aroclor 1232	ND		ug/kg	32.7	--	A
Aroclor 1242	ND		ug/kg	32.7	--	A
Aroclor 1248	ND		ug/kg	32.7	--	A
Aroclor 1254	ND		ug/kg	32.7	--	A
Aroclor 1260	ND		ug/kg	32.7	--	A
Aroclor 1262	ND		ug/kg	32.7	--	A
Aroclor 1268	ND		ug/kg	32.7	--	A
PCBs, Total	ND		ug/kg	32.7	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	93		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	90		30-150	B



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814866-2 WG814866-3									
Aroclor 1016	69		62		40-140	11		30	A
Aroclor 1260	85		77		40-140	10		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		68		30-150	A
Decachlorobiphenyl	93		84		30-150	A
2,4,5,6-Tetrachloro-m-xylene	85		73		30-150	B
Decachlorobiphenyl	87		76		30-150	B

## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-03  
 Client ID: D-4 6-12' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 80%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.7		mg/kg	0.49	--	1	08/21/15 04:37	08/21/15 17:02	EPA 3050B	97,6010C	JH
Barium, Total	27		mg/kg	0.49	--	1	08/21/15 04:37	08/21/15 17:02	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.49	--	1	08/21/15 04:37	08/21/15 17:02	EPA 3050B	97,6010C	JH
Chromium, Total	17		mg/kg	0.49	--	1	08/21/15 04:37	08/21/15 17:02	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.5	--	1	08/21/15 04:37	08/21/15 17:02	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.079	--	1	08/21/15 09:55	08/21/15 11:51	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.5	--	1	08/21/15 04:37	08/21/15 17:02	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.49	--	1	08/21/15 04:37	08/21/15 17:02	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-05  
 Client ID: D-4 12-18' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 77%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	5.0		mg/kg	0.51	--	1	08/21/15 04:37	08/21/15 17:06	EPA 3050B	97,6010C	JH
Barium, Total	26		mg/kg	0.51	--	1	08/21/15 04:37	08/21/15 17:06	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.51	--	1	08/21/15 04:37	08/21/15 17:06	EPA 3050B	97,6010C	JH
Chromium, Total	17		mg/kg	0.51	--	1	08/21/15 04:37	08/21/15 17:06	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.6	--	1	08/21/15 04:37	08/21/15 17:06	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.084	--	1	08/21/15 09:55	08/21/15 11:53	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.6	--	1	08/21/15 04:37	08/21/15 17:06	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.51	--	1	08/21/15 04:37	08/21/15 17:06	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-07  
 Client ID: D-4 18-22' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 73%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	6.2		mg/kg	0.54	--	1	08/21/15 04:37	08/21/15 17:10	EPA 3050B	97,6010C	JH
Barium, Total	32		mg/kg	0.54	--	1	08/21/15 04:37	08/21/15 17:10	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.54	--	1	08/21/15 04:37	08/21/15 17:10	EPA 3050B	97,6010C	JH
Chromium, Total	17		mg/kg	0.54	--	1	08/21/15 04:37	08/21/15 17:10	EPA 3050B	97,6010C	JH
Lead, Total	42		mg/kg	2.7	--	1	08/21/15 04:37	08/21/15 17:10	EPA 3050B	97,6010C	JH
Mercury, Total	0.303		mg/kg	0.086	--	1	08/21/15 09:55	08/21/15 11:55	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.7	--	1	08/21/15 04:37	08/21/15 17:10	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.54	--	1	08/21/15 04:37	08/21/15 17:10	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520179-09  
 Client ID: D-4 31-42' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 79%

Date Collected: 08/20/15 14:00  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.0		mg/kg	0.50	--	1	08/21/15 04:37	08/21/15 17:14	EPA 3050B	97,6010C	JH
Barium, Total	50		mg/kg	0.50	--	1	08/21/15 04:37	08/21/15 17:14	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.50	--	1	08/21/15 04:37	08/21/15 17:14	EPA 3050B	97,6010C	JH
Chromium, Total	24		mg/kg	0.50	--	1	08/21/15 04:37	08/21/15 17:14	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.5	--	1	08/21/15 04:37	08/21/15 17:14	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.080	--	1	08/21/15 09:55	08/21/15 11:57	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.5	--	1	08/21/15 04:37	08/21/15 17:14	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.50	--	1	08/21/15 04:37	08/21/15 17:14	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

### Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG814173-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	08/21/15 04:37	08/21/15 11:57	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	08/21/15 04:37	08/21/15 11:57	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	08/21/15 04:37	08/21/15 11:57	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	08/21/15 04:37	08/21/15 11:57	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	08/21/15 04:37	08/21/15 11:57	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	08/21/15 04:37	08/21/15 11:57	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	08/21/15 04:37	08/21/15 11:57	97,6010C	JH

#### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG814174-1									
Mercury, Total	ND	mg/kg	0.083	--	1	08/21/15 09:55	08/21/15 11:05	97,7471B	DB

#### Prep Information

Digestion Method: EPA 7471B



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D

**Lab Number:** L1520179

**Project Number:** 4426.9.1D

**Report Date:** 08/26/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814173-2 WG814173-3 SRM Lot Number: D088-540								
Arsenic, Total	105		105		79-121	0		30
Barium, Total	105		99		83-117	6		30
Cadmium, Total	105		106		83-117	1		30
Chromium, Total	101		101		80-120	0		30
Lead, Total	97		98		81-117	1		30
Selenium, Total	108		108		78-122	0		30
Silver, Total	112		105		75-124	6		30
MCP Total Metals - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814174-2 WG814174-3 SRM Lot Number: D088-540								
Mercury, Total	106		106		72-128	0		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

### SAMPLE RESULTS

**Lab ID:** L1520179-03  
**Client ID:** D-4 6-12' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:00  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/22/15 10:39	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

### SAMPLE RESULTS

**Lab ID:** L1520179-05  
**Client ID:** D-4 12-18' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:00  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/22/15 10:39	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

### SAMPLE RESULTS

**Lab ID:** L1520179-07  
**Client ID:** D-4 18-22' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:00  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/22/15 10:39	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

### SAMPLE RESULTS

**Lab ID:** L1520179-09  
**Client ID:** D-4 31-42' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:00  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/24/15 23:00	1,1030	SB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520179-03  
**Client ID:** D-4 6-12' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:00  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	150		umhos/cm	10	--	1	-	08/21/15 02:15	1,9050A	TA
Solids, Total	79.5		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT
pH (H)	8.8		SU	-	NA	1	-	08/20/15 23:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:27	1,7.3	ML
Sulfide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:19	1,7.3	ML



Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520179-04

Date Collected: 08/20/15 14:00

Client ID: D-4 S-4 6-8'

Date Received: 08/20/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.5		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520179-05  
**Client ID:** D-4 12-18' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:00  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	140		umhos/cm	10	--	1	-	08/21/15 02:15	1,9050A	TA
Solids, Total	77.2		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT
pH (H)	8.5		SU	-	NA	1	-	08/20/15 23:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:28	1,7.3	ML
Sulfide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:19	1,7.3	ML



Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520179-06

Date Collected: 08/20/15 14:00

Client ID: D-4 S-7 12-14'

Date Received: 08/20/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.2		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520179-07  
**Client ID:** D-4 18-22' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:00  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	490		umhos/cm	10	--	1	-	08/21/15 02:15	1,9050A	TA
Solids, Total	72.9		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT
pH (H)	8.4		SU	-	NA	1	-	08/20/15 23:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:29	1,7.3	ML
Sulfide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:20	1,7.3	ML



Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520179-08

Date Collected: 08/20/15 14:00

Client ID: D-4 S-11 20-22'

Date Received: 08/20/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.9		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520179-09  
**Client ID:** D-4 31-42' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:00  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	1000		umhos/cm	10	--	1	-	08/21/15 02:15	1,9050A	TA
Solids, Total	79.1		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT
pH (H)	8.0		SU	-	NA	1	-	08/20/15 23:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:29	1,7.3	ML
Sulfide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:20	1,7.3	ML



Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520179-10

Date Collected: 08/20/15 14:00

Client ID: D-4 S-17 35-37'

Date Received: 08/20/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.1		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT



Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815150-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:25	1,7.3	ML
General Chemistry - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815151-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:16	1,7.3	ML

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D

**Project Number:** 4426.9.1D

**Lab Number:** L1520179

**Report Date:** 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814112-1								
pH	101		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814116-1								
Specific Conductance	96		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815150-2								
Cyanide, Reactive	44		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815151-2								
Sulfide, Reactive	91		-		60-125	-		40



### Lab Duplicate Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 QC Batch ID: WG814112-2 QC Sample: L1520179-01 Client ID: D-4 0-6' COMP.						
pH	8.5	8.3	SU	2		5
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 QC Batch ID: WG814116-2 QC Sample: L1520179-01 Client ID: D-4 0-6' COMP.						
Specific Conductance	150	140	umhos/cm	7		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG814122-1 QC Sample: L1520179-01 Client ID: D-4 0-6' COMP.						
Solids, Total	90.4	88.1	%	3		20

Project Name: FAN PIER PARCEL D

Lab Number: L1520179

Project Number: 4426.9.1D

Report Date: 08/26/15

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 08/20/2015 20:27

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1520179-01A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520179-02A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520179-02B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520179-02C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520179-03A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520179-04A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520179-04B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520179-04C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1520179

Report Date: 08/26/15

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1520179-05A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520179-06A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520179-06B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520179-06C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520179-07A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520179-08A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520179-08B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520179-08C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520179-09A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520179-10A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520179-10B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520179-10C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)

**Container Comments**

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D**Project Number:** 4426.9.1D**Lab Number:** L1520179**Report Date:** 08/26/15**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
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**Container Comments**

L1520179-01A

L1520179-03A

L1520179-05A

L1520179-07A

L1520179-09A

\*Values in parentheses indicate holding time in days

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

## 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

#### **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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520179  
**Report Date:** 08/26/15

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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, NO<sub>2</sub>, NO<sub>3</sub>.

**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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



# CHAIN OF CUSTODY

PAGE OF



## Project Information

Westborough, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

Mansfield, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

Project Name: Fan Pier Parcel D

## Client Information

Client: McPhail Associates, LLC

Project Location: Boston, MA

Project #: 4426.9.1D

Address: 2269 Massachusetts Avenue

Project Manager: Ben Downing/Peter DeChaves

Cambridge, MA 02140

ALPHA Quote #: Fan Pier Pricing

Phone: 6178681420

## Turn-Around Time

Fax: 6178681423

Standard  Rush (ONLY IF PRE-APPROVED)

Email: bdowning@mcphailgeo.com

These samples have been Previously analyzed by Alpha

Due Date:

Time:

Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT

\*Denotes obtain total solid sample from composite sample.

\*\*Minus VOCs

Date Rec'd in Lab: *8/20/15*

ALPHA Job #: *L1520179*

## Report Information Data Deliverables

FAX  EMAIL  
 ADEX  Add'l Deliverables

## Billing Information

Same as Client info PO #:

## Regulatory Requirements/Report Limits

State/Fed Program

Criteria

MA

RCS-1

## MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

## ANALYSIS

VOCs (8280)*	Soil Management Package IV**																			
<input type="checkbox"/>	<input checked="" type="checkbox"/>																			
<input checked="" type="checkbox"/>	<input type="checkbox"/>																			
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<input checked="" type="checkbox"/>	<input type="checkbox"/>																			
<input type="checkbox"/>	<input checked="" type="checkbox"/>																			
<input checked="" type="checkbox"/>	<input type="checkbox"/>																			

SAMPLE HANDLING  
 Filtration  
 Done  
 Not Needed  
 Lab to do  
 Preservation  
 Lab to do  
 (Please specify below)

TOTAL # BOTTLES

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS																Sample Specific Comments	TOTAL # BOTTLES			
		Date	Time			VOCs (8280)*	Soil Management Package IV**																			
20179-01	D-4 0-6' Comp.	8-20-15	2:00	S	BAC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 Amber	1
02	D-4 5-1 0-2'	8-20-15	2:00	S	BAC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 High, 1 Low	3
03	D-4 6-12' Comp.	8-20-15	2:00	S	BAC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 Amber	1
04	D-4 5-4 6-8'	8-20-15	2:00	S	BAC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 High, 1 Low	3
05	D-4 12-8' Comp.	8-20-15	2:00	S	BAC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/16oz Amber	1
06	D-4 5-7 12-14'	8-20-15	2:00	S	BAC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low / High	3
07	D-4 18-22' Comp.	8-20-15	2:00	S	BAC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/16oz Amber	1
08	D-4 5-11 20-22'	8-20-15	2:00	S	BAC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low / High	3
09	D-4 36-42' Comp.	8-20-15	2:05	S	BAC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/16oz Amber	1
10	D-4 5-17 35-37'	8-20-15	2:00	S	BAC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low / High	3

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

IS YOUR PROJECT MA MCP or CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	8-20-15 1:50	<i>[Signature]</i>	8/20/15 1:50
	8/20/15 1:10	<i>[Signature]</i>	8/20/15 1:10

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

7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1520179

Instrument ID: Voal00.i      Calibration Date: 25-AUG-2015      Time: 19:28

Lab File ID: 0825N01      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D
=====	=====	=====	=====	=====	=====
dichlorodifluoromethane_____	.187	.16625	.1	-11	20
chloromethane_____	.20766	.25016	.1	20	20
vinyl chloride_____	.21396	.23752	.1	11	20
bromomethane_____	.13517	.11984	.1	-11	20
chloroethane_____	.12913	.14559	.1	13	20
trichlorofluoromethane_____	.24868	.22906	.1	-8	20
ethyl ether_____	.12265	.11306	.05	-8	20
1,1,-dichloroethene_____	.15676	.16133	.1	3	20
carbon disulfide_____	.60511	.61923	.1	2	20
methylene chloride_____	.20702	.21453	.1	4	20
acetone_____	100	119	.1	19	20
trans-1,2-dichloroethene_____	.18303	.19059	.1	4	20
methyl tert butyl ether_____	.59541	.56382	.1	-5	20
Diisopropyl Ether_____	.66228	.74703	.05	13	20
1,1-dichloroethane_____	.37295	.41441	.2	11	20
Ethyl-Tert-Butyl-Ether_____	.67262	.6976	.05	4	20
cis-1,2-dichloroethene_____	.20399	.21318	.1	5	20
2,2-dichloropropane_____	.27701	.30062	.05	9	20
bromochloromethane_____	.09003	.09104	.05	1	20
chloroform_____	.35545	.3617	.2	2	20
carbontetrachloride_____	.23543	.23586	.1	0	20
tetrahydrofuran_____	.07866	.07366	.05	-6	20
1,1,1-trichloroethane_____	.28145	.28278	.1	0	20
2-butanone_____	.11217	.11085	.1	-1	20
1,1-dichloropropene_____	.24964	.27254	.05	9	20
benzene_____	.78204	.85154	.5	9	20
Tertiary-Amyl Methyl Ether_____	.58171	.57843	.05	-1	20
1,2-dichloroethane_____	.29909	.29078	.1	-3	20
trichloroethene_____	.19209	.20363	.2	6	20
dibromomethane_____	.12744	.1235	.05	-3	20
1,2-dichloropropane_____	.20856	.23719	.1	14	20
bromodichloromethane_____	.27983	.28657	.2	2	20
1,4-dioxane_____	.00226	.0022	.05	-3	20
cis-1,3-dichloropropene_____	.32828	.35561	.2	8	20
toluene_____	.70265	.75413	.4	7	20
4-methyl-2-pentanone_____	.09341	.08735	.1	-6	20
tetrachloroethene_____	.24354	.25719	.2	6	20
trans-1,3-dichloropropene_____	.44951	.46271	.1	3	20

F

F

F

F

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1520179

Instrument ID: Voal00.i      Calibration Date: 25-AUG-2015      Time: 19:28

Lab File ID: 0825N01      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.22462	.23013	.1	2	20
chlorodibromomethane	.27986	.27094	.1	-3	20
1,3-dichloropropane	.4689	.47667	.05	2	20
1,2-dibromoethane	.25199	.23839	.1	-5	20
2-hexanone	.25182	.21704	.1	-14	20
chlorobenzene	.72245	.75691	.5	5	20
ethyl benzene	1.321	1.4115	.1	7	20
1,1,1,2-tetrachloroethane	.25141	.25388	.05	1	20
p/m xylene	.4784	.52079	.1	9	20
o xylene	.4574	.48942	.3	7	20
styrene	.80709	.86119	.3	7	20
bromoform	.39095	.34352	.1	-12	20
isopropylbenzene	2.5014	2.6016	.1	4	20
bromobenzene	.58801	.58705	.05	0	20
n-propylbenzene	3.1176	3.3741	.05	8	20
1,1,2,2,-tetrachloroethane	.79665	.74024	.3	-7	20
2-chlorotoluene	1.9997	1.6922	.05	-15	20
1,3,5-trimethylbenzene	2.1494	2.2791	.05	6	20
1,2,3-trichloropropane	.6668	.61164	.05	-8	20
4-chlorotoluene	1.9179	2.0539	.05	7	20
tert-butylbenzene	1.6411	1.7064	.05	4	20
1,2,4-trimethylbenzene	2.1380	2.2818	.05	7	20
sec-butylbenzene	2.7032	2.9147	.05	8	20
p-isopropyltoluene	2.1196	2.2748	.05	7	20
1,3-dichlorobenzene	1.1313	1.1764	.6	4	20
1,4-dichlorobenzene	1.1563	1.1985	.5	4	20
n-butylbenzene	2.2066	2.4868	.05	13	20
1,2-dichlorobenzene	1.0944	1.0914	.4	0	20
1,2-dibromo-3-chloropropane	.11922	.09558	.05	-20	20
hexachlorobutadiene	.33792	.35914	.05	6	20
1,2,4-trichlorobenzene	.69367	.73814	.2	6	20
naphthalene	2.0354	1.8999	.05	-7	20
1,2,3-trichlorobenzene	.65938	.68386	.05	4	20
dibromofluoromethane	.24097	.22925	.05	-5	30
1,2-dichloroethane-d4	.30902	.27857	.05	-10	30
toluene-d8	1.3369	1.3355	.05	0	30
4-bromofluorobenzene	1.0311	1.0134	.05	-2	30

FORM VII MCP-8260HLW-10



## ANALYTICAL REPORT

Lab Number:	L1520182
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	08/26/15

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](http://www.alphalab.com)



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1520182-01	D-12 6'-12' COMP	SOIL	BOSTON, MA	08/20/15 14:30	08/20/15
L1520182-02	D-12 S-5 10'-12'	SOIL	BOSTON, MA	08/20/15 14:30	08/20/15
L1520182-03	D-7 6'-12' COMP	SOIL	BOSTON, MA	08/20/15 14:30	08/20/15
L1520182-04	D-7 S-5 10'-12'	SOIL	BOSTON, MA	08/20/15 14:30	08/20/15
L1520182-05	D-7 12'-18' COMP	SOIL	BOSTON, MA	08/20/15 14:30	08/20/15
L1520182-06	D-7 S-7 14'-16'	SOIL	BOSTON, MA	08/20/15 14:30	08/20/15
L1520182-07	D-7 18'-24' COMP	SOIL	BOSTON, MA	08/20/15 14:30	08/20/15
L1520182-08	D-7 S-11 22'-24'	SOIL	BOSTON, MA	08/20/15 14:30	08/20/15
L1520182-09	D-7 28'-42' COMP	SOIL	BOSTON, MA	08/20/15 14:30	08/20/15
L1520182-10	D-7 S-15 35'-37'	SOIL	BOSTON, MA	08/20/15 14:30	08/20/15

Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

### 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.

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**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

The samples submitted for Volatile Organics were received without raw soil for the Total Solids analysis. The Total Solids results from the corresponding composite samples were utilized in the dry weight calculation of the Volatile Organics data.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1520182-02, -04, -06, -08, and -10, did not meet the method required minimum response factor on the lowest calibration standard for acetone (0.09844), 4-methyl-2-pentanone (0.07160), and 1,4-dioxane (0.00172), as well as the average response factor for acetone, 4-methyl-2-pentanone, and 1,4-dioxane.

The continuing calibration standard, associated with L1520182-02, -04, -06, -08, and -10, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

##### Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

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: 08/26/15



# ORGANICS

# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-02  
 Client ID: D-12 S-5 10'-12'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/26/15 01:07  
 Analyst: PP  
 Percent Solids: 81%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	15	--	1
1,1-Dichloroethane	ND		ug/kg	2.2	--	1
Chloroform	ND		ug/kg	2.2	--	1
Carbon tetrachloride	ND		ug/kg	1.5	--	1
1,2-Dichloropropane	ND		ug/kg	5.1	--	1
Dibromochloromethane	ND		ug/kg	1.5	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.2	--	1
Tetrachloroethene	ND		ug/kg	1.5	--	1
Chlorobenzene	ND		ug/kg	1.5	--	1
Trichlorofluoromethane	ND		ug/kg	5.9	--	1
1,2-Dichloroethane	ND		ug/kg	1.5	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.5	--	1
Bromodichloromethane	ND		ug/kg	1.5	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.5	--	1
1,1-Dichloropropene	ND		ug/kg	5.9	--	1
Bromoform	ND		ug/kg	5.9	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Benzene	ND		ug/kg	1.5	--	1
Toluene	ND		ug/kg	2.2	--	1
Ethylbenzene	ND		ug/kg	1.5	--	1
Chloromethane	ND		ug/kg	5.9	--	1
Bromomethane	ND		ug/kg	2.9	--	1
Vinyl chloride	ND		ug/kg	2.9	--	1
Chloroethane	ND		ug/kg	2.9	--	1
1,1-Dichloroethene	ND		ug/kg	1.5	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.2	--	1
Trichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.9	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-02  
**Client ID:** D-12 S-5 10'-12'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	5.9	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.9	--	1
Methyl tert butyl ether	ND		ug/kg	2.9	--	1
p/m-Xylene	ND		ug/kg	2.9	--	1
o-Xylene	ND		ug/kg	2.9	--	1
Xylenes, Total	ND		ug/kg	2.9	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.5	--	1
Dibromomethane	ND		ug/kg	5.9	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.9	--	1
Styrene	ND		ug/kg	2.9	--	1
Dichlorodifluoromethane	ND		ug/kg	15	--	1
Acetone	ND		ug/kg	53	--	1
Carbon disulfide	13		ug/kg	5.9	--	1
Methyl ethyl ketone	ND		ug/kg	15	--	1
Methyl isobutyl ketone	ND		ug/kg	15	--	1
2-Hexanone	ND		ug/kg	15	--	1
Bromochloromethane	ND		ug/kg	5.9	--	1
Tetrahydrofuran	ND		ug/kg	5.9	--	1
2,2-Dichloropropane	ND		ug/kg	7.3	--	1
1,2-Dibromoethane	ND		ug/kg	5.9	--	1
1,3-Dichloropropane	ND		ug/kg	5.9	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Bromobenzene	ND		ug/kg	7.3	--	1
n-Butylbenzene	ND		ug/kg	1.5	--	1
sec-Butylbenzene	ND		ug/kg	1.5	--	1
tert-Butylbenzene	ND		ug/kg	5.9	--	1
o-Chlorotoluene	ND		ug/kg	5.9	--	1
p-Chlorotoluene	ND		ug/kg	5.9	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.9	--	1
Hexachlorobutadiene	ND		ug/kg	5.9	--	1
Isopropylbenzene	ND		ug/kg	1.5	--	1
p-Isopropyltoluene	ND		ug/kg	1.5	--	1
Naphthalene	ND		ug/kg	5.9	--	1
n-Propylbenzene	ND		ug/kg	1.5	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	5.9	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.9	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.9	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.9	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-02  
 Client ID: D-12 S-5 10'-12'  
 Sample Location: BOSTON, MA

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	7.3	--	1
Diisopropyl Ether	ND		ug/kg	5.9	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.9	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.9	--	1
1,4-Dioxane	ND		ug/kg	59	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	113		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-04  
 Client ID: D-7 S-5 10'-12'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/26/15 01:34  
 Analyst: PP  
 Percent Solids: 87%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	11	--	1
1,1-Dichloroethane	ND		ug/kg	1.7	--	1
Chloroform	ND		ug/kg	1.7	--	1
Carbon tetrachloride	ND		ug/kg	1.1	--	1
1,2-Dichloropropane	ND		ug/kg	4.0	--	1
Dibromochloromethane	ND		ug/kg	1.1	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.7	--	1
Tetrachloroethene	ND		ug/kg	1.1	--	1
Chlorobenzene	ND		ug/kg	1.1	--	1
Trichlorofluoromethane	ND		ug/kg	4.6	--	1
1,2-Dichloroethane	ND		ug/kg	1.1	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.1	--	1
Bromodichloromethane	ND		ug/kg	1.1	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.1	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.1	--	1
1,1-Dichloropropene	ND		ug/kg	4.6	--	1
Bromoform	ND		ug/kg	4.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.1	--	1
Benzene	ND		ug/kg	1.1	--	1
Toluene	ND		ug/kg	1.7	--	1
Ethylbenzene	ND		ug/kg	1.1	--	1
Chloromethane	ND		ug/kg	4.6	--	1
Bromomethane	ND		ug/kg	2.3	--	1
Vinyl chloride	ND		ug/kg	2.3	--	1
Chloroethane	ND		ug/kg	2.3	--	1
1,1-Dichloroethene	ND		ug/kg	1.1	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.7	--	1
Trichloroethene	ND		ug/kg	1.1	--	1
1,2-Dichlorobenzene	ND		ug/kg	4.6	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-04  
**Client ID:** D-7 S-5 10'-12'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	4.6	--	1
1,4-Dichlorobenzene	ND		ug/kg	4.6	--	1
Methyl tert butyl ether	ND		ug/kg	2.3	--	1
p/m-Xylene	ND		ug/kg	2.3	--	1
o-Xylene	ND		ug/kg	2.3	--	1
Xylenes, Total	ND		ug/kg	2.3	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	--	1
Dibromomethane	ND		ug/kg	4.6	--	1
1,2,3-Trichloropropane	ND		ug/kg	4.6	--	1
Styrene	ND		ug/kg	2.3	--	1
Dichlorodifluoromethane	ND		ug/kg	11	--	1
Acetone	ND		ug/kg	41	--	1
Carbon disulfide	5.2		ug/kg	4.6	--	1
Methyl ethyl ketone	ND		ug/kg	11	--	1
Methyl isobutyl ketone	ND		ug/kg	11	--	1
2-Hexanone	ND		ug/kg	11	--	1
Bromochloromethane	ND		ug/kg	4.6	--	1
Tetrahydrofuran	ND		ug/kg	4.6	--	1
2,2-Dichloropropane	ND		ug/kg	5.7	--	1
1,2-Dibromoethane	ND		ug/kg	4.6	--	1
1,3-Dichloropropane	ND		ug/kg	4.6	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.1	--	1
Bromobenzene	ND		ug/kg	5.7	--	1
n-Butylbenzene	ND		ug/kg	1.1	--	1
sec-Butylbenzene	ND		ug/kg	1.1	--	1
tert-Butylbenzene	ND		ug/kg	4.6	--	1
o-Chlorotoluene	ND		ug/kg	4.6	--	1
p-Chlorotoluene	ND		ug/kg	4.6	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.6	--	1
Hexachlorobutadiene	ND		ug/kg	4.6	--	1
Isopropylbenzene	ND		ug/kg	1.1	--	1
p-Isopropyltoluene	ND		ug/kg	1.1	--	1
Naphthalene	ND		ug/kg	4.6	--	1
n-Propylbenzene	ND		ug/kg	1.1	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	4.6	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	4.6	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	4.6	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	4.6	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-04  
 Client ID: D-7 S-5 10'-12'  
 Sample Location: BOSTON, MA

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	5.7	--	1
Diisopropyl Ether	ND		ug/kg	4.6	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.6	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.6	--	1
1,4-Dioxane	ND		ug/kg	46	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	126		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	115		70-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-06  
 Client ID: D-7 S-7 14'-16'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/26/15 02:00  
 Analyst: PP  
 Percent Solids: 77%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	11	--	1
1,1-Dichloroethane	ND		ug/kg	1.6	--	1
Chloroform	ND		ug/kg	1.6	--	1
Carbon tetrachloride	ND		ug/kg	1.1	--	1
1,2-Dichloropropane	ND		ug/kg	3.8	--	1
Dibromochloromethane	ND		ug/kg	1.1	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.6	--	1
Tetrachloroethene	ND		ug/kg	1.1	--	1
Chlorobenzene	ND		ug/kg	1.1	--	1
Trichlorofluoromethane	ND		ug/kg	4.3	--	1
1,2-Dichloroethane	ND		ug/kg	1.1	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.1	--	1
Bromodichloromethane	ND		ug/kg	1.1	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.1	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.1	--	1
1,1-Dichloropropene	ND		ug/kg	4.3	--	1
Bromoform	ND		ug/kg	4.3	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.1	--	1
Benzene	ND		ug/kg	1.1	--	1
Toluene	ND		ug/kg	1.6	--	1
Ethylbenzene	ND		ug/kg	1.1	--	1
Chloromethane	ND		ug/kg	4.3	--	1
Bromomethane	ND		ug/kg	2.2	--	1
Vinyl chloride	ND		ug/kg	2.2	--	1
Chloroethane	ND		ug/kg	2.2	--	1
1,1-Dichloroethene	ND		ug/kg	1.1	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	--	1
Trichloroethene	ND		ug/kg	1.1	--	1
1,2-Dichlorobenzene	ND		ug/kg	4.3	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520182-06  
 Client ID: D-7 S-7 14'-16'  
 Sample Location: BOSTON, MA

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	4.3	--	1
1,4-Dichlorobenzene	ND		ug/kg	4.3	--	1
Methyl tert butyl ether	ND		ug/kg	2.2	--	1
p/m-Xylene	ND		ug/kg	2.2	--	1
o-Xylene	ND		ug/kg	2.2	--	1
Xylenes, Total	ND		ug/kg	2.2	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	--	1
Dibromomethane	ND		ug/kg	4.3	--	1
1,2,3-Trichloropropane	ND		ug/kg	4.3	--	1
Styrene	ND		ug/kg	2.2	--	1
Dichlorodifluoromethane	ND		ug/kg	11	--	1
Acetone	ND		ug/kg	39	--	1
Carbon disulfide	ND		ug/kg	4.3	--	1
Methyl ethyl ketone	ND		ug/kg	11	--	1
Methyl isobutyl ketone	ND		ug/kg	11	--	1
2-Hexanone	ND		ug/kg	11	--	1
Bromochloromethane	ND		ug/kg	4.3	--	1
Tetrahydrofuran	ND		ug/kg	4.3	--	1
2,2-Dichloropropane	ND		ug/kg	5.4	--	1
1,2-Dibromoethane	ND		ug/kg	4.3	--	1
1,3-Dichloropropane	ND		ug/kg	4.3	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.1	--	1
Bromobenzene	ND		ug/kg	5.4	--	1
n-Butylbenzene	ND		ug/kg	1.1	--	1
sec-Butylbenzene	ND		ug/kg	1.1	--	1
tert-Butylbenzene	ND		ug/kg	4.3	--	1
o-Chlorotoluene	ND		ug/kg	4.3	--	1
p-Chlorotoluene	ND		ug/kg	4.3	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.3	--	1
Hexachlorobutadiene	ND		ug/kg	4.3	--	1
Isopropylbenzene	ND		ug/kg	1.1	--	1
p-Isopropyltoluene	ND		ug/kg	1.1	--	1
Naphthalene	ND		ug/kg	4.3	--	1
n-Propylbenzene	ND		ug/kg	1.1	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	4.3	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	4.3	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	4.3	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	4.3	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-06  
 Client ID: D-7 S-7 14'-16'  
 Sample Location: BOSTON, MA

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	5.4	--	1
Diisopropyl Ether	ND		ug/kg	4.3	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.3	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.3	--	1
1,4-Dioxane	ND		ug/kg	43	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	130		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	115		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-08  
 Client ID: D-7 S-11 22'-24'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/26/15 02:25  
 Analyst: PP  
 Percent Solids: 74%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	15	--	1
1,1-Dichloroethane	ND		ug/kg	2.2	--	1
Chloroform	ND		ug/kg	2.2	--	1
Carbon tetrachloride	ND		ug/kg	1.5	--	1
1,2-Dichloropropane	ND		ug/kg	5.2	--	1
Dibromochloromethane	ND		ug/kg	1.5	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.2	--	1
Tetrachloroethene	ND		ug/kg	1.5	--	1
Chlorobenzene	ND		ug/kg	1.5	--	1
Trichlorofluoromethane	ND		ug/kg	6.0	--	1
1,2-Dichloroethane	ND		ug/kg	1.5	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.5	--	1
Bromodichloromethane	ND		ug/kg	1.5	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.5	--	1
1,1-Dichloropropene	ND		ug/kg	6.0	--	1
Bromoform	ND		ug/kg	6.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Benzene	ND		ug/kg	1.5	--	1
Toluene	ND		ug/kg	2.2	--	1
Ethylbenzene	ND		ug/kg	1.5	--	1
Chloromethane	ND		ug/kg	6.0	--	1
Bromomethane	ND		ug/kg	3.0	--	1
Vinyl chloride	ND		ug/kg	3.0	--	1
Chloroethane	ND		ug/kg	3.0	--	1
1,1-Dichloroethene	ND		ug/kg	1.5	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.2	--	1
Trichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichlorobenzene	ND		ug/kg	6.0	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-08  
**Client ID:** D-7 S-11 22'-24'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	6.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	6.0	--	1
Methyl tert butyl ether	ND		ug/kg	3.0	--	1
p/m-Xylene	ND		ug/kg	3.0	--	1
o-Xylene	ND		ug/kg	3.0	--	1
Xylenes, Total	ND		ug/kg	3.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.5	--	1
Dibromomethane	ND		ug/kg	6.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	6.0	--	1
Styrene	ND		ug/kg	3.0	--	1
Dichlorodifluoromethane	ND		ug/kg	15	--	1
Acetone	ND		ug/kg	54	--	1
Carbon disulfide	8.8		ug/kg	6.0	--	1
Methyl ethyl ketone	ND		ug/kg	15	--	1
Methyl isobutyl ketone	ND		ug/kg	15	--	1
2-Hexanone	ND		ug/kg	15	--	1
Bromochloromethane	ND		ug/kg	6.0	--	1
Tetrahydrofuran	ND		ug/kg	6.0	--	1
2,2-Dichloropropane	ND		ug/kg	7.5	--	1
1,2-Dibromoethane	ND		ug/kg	6.0	--	1
1,3-Dichloropropane	ND		ug/kg	6.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Bromobenzene	ND		ug/kg	7.5	--	1
n-Butylbenzene	ND		ug/kg	1.5	--	1
sec-Butylbenzene	ND		ug/kg	1.5	--	1
tert-Butylbenzene	ND		ug/kg	6.0	--	1
o-Chlorotoluene	ND		ug/kg	6.0	--	1
p-Chlorotoluene	ND		ug/kg	6.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	6.0	--	1
Hexachlorobutadiene	ND		ug/kg	6.0	--	1
Isopropylbenzene	ND		ug/kg	1.5	--	1
p-Isopropyltoluene	ND		ug/kg	1.5	--	1
Naphthalene	ND		ug/kg	6.0	--	1
n-Propylbenzene	ND		ug/kg	1.5	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	6.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	6.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	6.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	6.0	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-08  
**Client ID:** D-7 S-11 22'-24'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	7.5	--	1
Diisopropyl Ether	ND		ug/kg	6.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	6.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	6.0	--	1
1,4-Dioxane	ND		ug/kg	60	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	129		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	115		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-10  
 Client ID: D-7 S-15 35'-37'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/26/15 02:51  
 Analyst: PP  
 Percent Solids: 79%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	13	--	1
1,1-Dichloroethane	ND		ug/kg	1.9	--	1
Chloroform	ND		ug/kg	1.9	--	1
Carbon tetrachloride	ND		ug/kg	1.3	--	1
1,2-Dichloropropane	ND		ug/kg	4.5	--	1
Dibromochloromethane	ND		ug/kg	1.3	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.9	--	1
Tetrachloroethene	ND		ug/kg	1.3	--	1
Chlorobenzene	ND		ug/kg	1.3	--	1
Trichlorofluoromethane	ND		ug/kg	5.2	--	1
1,2-Dichloroethane	ND		ug/kg	1.3	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.3	--	1
Bromodichloromethane	ND		ug/kg	1.3	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.3	--	1
1,1-Dichloropropene	ND		ug/kg	5.2	--	1
Bromoform	ND		ug/kg	5.2	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Benzene	ND		ug/kg	1.3	--	1
Toluene	ND		ug/kg	1.9	--	1
Ethylbenzene	ND		ug/kg	1.3	--	1
Chloromethane	ND		ug/kg	5.2	--	1
Bromomethane	ND		ug/kg	2.6	--	1
Vinyl chloride	ND		ug/kg	2.6	--	1
Chloroethane	ND		ug/kg	2.6	--	1
1,1-Dichloroethene	ND		ug/kg	1.3	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.9	--	1
Trichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.2	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-10  
**Client ID:** D-7 S-15 35'-37'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	5.2	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.2	--	1
Methyl tert butyl ether	ND		ug/kg	2.6	--	1
p/m-Xylene	ND		ug/kg	2.6	--	1
o-Xylene	ND		ug/kg	2.6	--	1
Xylenes, Total	ND		ug/kg	2.6	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.3	--	1
Dibromomethane	ND		ug/kg	5.2	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.2	--	1
Styrene	ND		ug/kg	2.6	--	1
Dichlorodifluoromethane	ND		ug/kg	13	--	1
Acetone	ND		ug/kg	47	--	1
Carbon disulfide	ND		ug/kg	5.2	--	1
Methyl ethyl ketone	ND		ug/kg	13	--	1
Methyl isobutyl ketone	ND		ug/kg	13	--	1
2-Hexanone	ND		ug/kg	13	--	1
Bromochloromethane	ND		ug/kg	5.2	--	1
Tetrahydrofuran	ND		ug/kg	5.2	--	1
2,2-Dichloropropane	ND		ug/kg	6.5	--	1
1,2-Dibromoethane	ND		ug/kg	5.2	--	1
1,3-Dichloropropane	ND		ug/kg	5.2	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Bromobenzene	ND		ug/kg	6.5	--	1
n-Butylbenzene	ND		ug/kg	1.3	--	1
sec-Butylbenzene	ND		ug/kg	1.3	--	1
tert-Butylbenzene	ND		ug/kg	5.2	--	1
o-Chlorotoluene	ND		ug/kg	5.2	--	1
p-Chlorotoluene	ND		ug/kg	5.2	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.2	--	1
Hexachlorobutadiene	ND		ug/kg	5.2	--	1
Isopropylbenzene	ND		ug/kg	1.3	--	1
p-Isopropyltoluene	ND		ug/kg	1.3	--	1
Naphthalene	ND		ug/kg	5.2	--	1
n-Propylbenzene	ND		ug/kg	1.3	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	5.2	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.2	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.2	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.2	--	1



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-10  
 Client ID: D-7 S-15 35'-37'  
 Sample Location: BOSTON, MA

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	6.5	--	1
Diisopropyl Ether	ND		ug/kg	5.2	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.2	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.2	--	1
1,4-Dioxane	ND		ug/kg	52	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	131	Q	70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	118		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/25/15 21:11  
Analyst: PP

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG815732-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/25/15 21:11  
Analyst: PP

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG815732-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylene (Total)	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene (total)	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 08/25/15 21:11  
**Analyst:** PP

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG815732-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Ethyl ether	ND		ug/kg	5.0	--
Isopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	98		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG815732-1 WG815732-2								
Methylene chloride	102		99		70-130	3		20
1,1-Dichloroethane	115		111		70-130	4		20
Chloroform	109		108		70-130	1		20
Carbon tetrachloride	108		104		70-130	4		20
1,2-Dichloropropane	110		111		70-130	1		20
Dibromochloromethane	95		96		70-130	1		20
1,1,2-Trichloroethane	108		106		70-130	2		20
Tetrachloroethene	93		91		70-130	2		20
Chlorobenzene	100		98		70-130	2		20
Trichlorofluoromethane	108		100		70-130	8		20
1,2-Dichloroethane	108		110		70-130	2		20
1,1,1-Trichloroethane	107		104		70-130	3		20
Bromodichloromethane	105		106		70-130	1		20
trans-1,3-Dichloropropene	106		105		70-130	1		20
cis-1,3-Dichloropropene	104		104		70-130	0		20
1,1-Dichloropropene	109		106		70-130	3		20
Bromoform	80		80		70-130	0		20
1,1,2,2-Tetrachloroethane	104		109		70-130	5		20
Benzene	108		106		70-130	2		20
Toluene	104		100		70-130	4		20
Ethylbenzene	103		101		70-130	2		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG815732-1 WG815732-2								
Chloromethane	115		110		70-130	4		20
Bromomethane	110		101		70-130	9		20
Vinyl chloride	113		103		70-130	9		20
Chloroethane	158	Q	143	Q	70-130	10		20
1,1-Dichloroethene	103		97		70-130	6		20
trans-1,2-Dichloroethene	102		98		70-130	4		20
Trichloroethene	107		105		70-130	2		20
1,2-Dichlorobenzene	94		94		70-130	0		20
1,3-Dichlorobenzene	98		97		70-130	1		20
1,4-Dichlorobenzene	97		97		70-130	0		20
Methyl tert butyl ether	91		92		70-130	1		20
p/m-Xylene	99		97		70-130	2		20
o-Xylene	96		94		70-130	2		20
cis-1,2-Dichloroethene	102		99		70-130	3		20
Dibromomethane	102		102		70-130	0		20
1,2,3-Trichloropropane	104		106		70-130	2		20
Styrene	94		93		70-130	1		20
Dichlorodifluoromethane	118		109		70-130	8		20
Acetone	123		112		70-130	9		20
Carbon disulfide	107		101		70-130	6		20
Methyl ethyl ketone	99		100		70-130	1		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG815732-1 WG815732-2								
Methyl isobutyl ketone	76		81		70-130	6		20
2-Hexanone	76		78		70-130	3		20
Bromochloromethane	103		102		70-130	1		20
Tetrahydrofuran	95		115		70-130	19		20
2,2-Dichloropropane	113		109		70-130	4		20
1,2-Dibromoethane	94		94		70-130	0		20
1,3-Dichloropropane	104		105		70-130	1		20
1,1,1,2-Tetrachloroethane	99		98		70-130	1		20
Bromobenzene	91		91		70-130	0		20
n-Butylbenzene	112		112		70-130	0		20
sec-Butylbenzene	105		104		70-130	1		20
tert-Butylbenzene	99		96		70-130	3		20
o-Chlorotoluene	109		107		70-130	2		20
p-Chlorotoluene	107		106		70-130	1		20
1,2-Dibromo-3-chloropropane	75		75		70-130	0		20
Hexachlorobutadiene	87		88		70-130	1		20
Isopropylbenzene	100		98		70-130	2		20
p-Isopropyltoluene	99		96		70-130	3		20
Naphthalene	80		82		70-130	2		20
n-Propylbenzene	108		106		70-130	2		20
1,2,3-Trichlorobenzene	85		87		70-130	2		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG815732-1 WG815732-2								
1,2,4-Trichlorobenzene	86		86		70-130	0		20
1,3,5-Trimethylbenzene	103		101		70-130	2		20
1,2,4-Trimethylbenzene	101		100		70-130	1		20
Diethyl ether	105		102		70-130	3		20
Diisopropyl Ether	112		110		70-130	2		20
Ethyl-Tert-Butyl-Ether	98		98		70-130	0		20
Tertiary-Amyl Methyl Ether	90		91		70-130	1		20
1,4-Dioxane	66	Q	72		70-130	9		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		111		70-130
Toluene-d8	103		102		70-130
4-Bromofluorobenzene	102		104		70-130
Dibromofluoromethane	103		102		70-130



# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-01  
 Client ID: D-12 6'-12' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/25/15 22:22  
 Analyst: AS  
 Percent Solids: 81%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-01  
**Client ID:** D-12 6'-12' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	440	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	980	--	1
Pentachlorophenol	ND		ug/kg	410	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		30-130
Phenol-d6	80		30-130
Nitrobenzene-d5	79		30-130
2-Fluorobiphenyl	74		30-130
2,4,6-Tribromophenol	87		30-130
4-Terphenyl-d14	78		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-03  
 Client ID: D-7 6'-12' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/25/15 22:48  
 Analyst: AS  
 Percent Solids: 87%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	150	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	--	1
Hexachlorobenzene	ND		ug/kg	110	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	--	1
2-Chloronaphthalene	ND		ug/kg	190	--	1
1,2-Dichlorobenzene	ND		ug/kg	190	--	1
1,3-Dichlorobenzene	ND		ug/kg	190	--	1
1,4-Dichlorobenzene	ND		ug/kg	190	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	--	1
2,4-Dinitrotoluene	ND		ug/kg	190	--	1
2,6-Dinitrotoluene	ND		ug/kg	190	--	1
Azobenzene	ND		ug/kg	190	--	1
Fluoranthene	220		ug/kg	110	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	--	1
Hexachlorobutadiene	ND		ug/kg	190	--	1
Hexachloroethane	ND		ug/kg	150	--	1
Isophorone	ND		ug/kg	170	--	1
Naphthalene	ND		ug/kg	190	--	1
Nitrobenzene	ND		ug/kg	170	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	190	--	1
Butyl benzyl phthalate	ND		ug/kg	190	--	1
Di-n-butylphthalate	ND		ug/kg	190	--	1
Di-n-octylphthalate	ND		ug/kg	190	--	1
Diethyl phthalate	ND		ug/kg	190	--	1
Dimethyl phthalate	ND		ug/kg	190	--	1
Benzo(a)anthracene	110		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-03  
**Client ID:** D-7 6'-12' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	120		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	230		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	150	--	1
Pyrene	200		ug/kg	110	--	1
Aniline	ND		ug/kg	230	--	1
4-Chloroaniline	ND		ug/kg	190	--	1
Dibenzofuran	ND		ug/kg	190	--	1
2-Methylnaphthalene	ND		ug/kg	230	--	1
Acetophenone	ND		ug/kg	190	--	1
2,4,6-Trichlorophenol	ND		ug/kg	110	--	1
2-Chlorophenol	ND		ug/kg	190	--	1
2,4-Dichlorophenol	ND		ug/kg	170	--	1
2,4-Dimethylphenol	ND		ug/kg	190	--	1
2-Nitrophenol	ND		ug/kg	410	--	1
4-Nitrophenol	ND		ug/kg	260	--	1
2,4-Dinitrophenol	ND		ug/kg	910	--	1
Pentachlorophenol	ND		ug/kg	380	--	1
Phenol	ND		ug/kg	190	--	1
2-Methylphenol	ND		ug/kg	190	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	--	1
2,4,5-Trichlorophenol	ND		ug/kg	190	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	77		30-130
Phenol-d6	82		30-130
Nitrobenzene-d5	83		30-130
2-Fluorobiphenyl	75		30-130
2,4,6-Tribromophenol	79		30-130
4-Terphenyl-d14	60		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-05  
 Client ID: D-7 12'-18' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/25/15 23:13  
 Analyst: AS  
 Percent Solids: 77%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	260	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	230	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-05  
**Client ID:** D-7 12'-18' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	130	--	1
Aniline	ND		ug/kg	260	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	260	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	460	--	1
4-Nitrophenol	ND		ug/kg	300	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	430	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	310	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	87		30-130
Phenol-d6	86		30-130
Nitrobenzene-d5	86		30-130
2-Fluorobiphenyl	82		30-130
2,4,6-Tribromophenol	85		30-130
4-Terphenyl-d14	83		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-07  
 Client ID: D-7 18'-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/25/15 23:38  
 Analyst: AS  
 Percent Solids: 74%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	180	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	220	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	200	--	1
2-Chloronaphthalene	ND		ug/kg	220	--	1
1,2-Dichlorobenzene	ND		ug/kg	220	--	1
1,3-Dichlorobenzene	ND		ug/kg	220	--	1
1,4-Dichlorobenzene	ND		ug/kg	220	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	220	--	1
2,4-Dinitrotoluene	ND		ug/kg	220	--	1
2,6-Dinitrotoluene	ND		ug/kg	220	--	1
Azobenzene	ND		ug/kg	220	--	1
Fluoranthene	ND		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	220	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	260	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	240	--	1
Hexachlorobutadiene	ND		ug/kg	220	--	1
Hexachloroethane	ND		ug/kg	180	--	1
Isophorone	ND		ug/kg	200	--	1
Naphthalene	ND		ug/kg	220	--	1
Nitrobenzene	ND		ug/kg	200	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	220	--	1
Butyl benzyl phthalate	ND		ug/kg	220	--	1
Di-n-butylphthalate	ND		ug/kg	220	--	1
Di-n-octylphthalate	ND		ug/kg	220	--	1
Diethyl phthalate	ND		ug/kg	220	--	1
Dimethyl phthalate	ND		ug/kg	220	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	180	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-07  
**Client ID:** D-7 18'-24' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	180	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	180	--	1
Fluorene	ND		ug/kg	220	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	180	--	1
Pyrene	ND		ug/kg	130	--	1
Aniline	ND		ug/kg	260	--	1
4-Chloroaniline	ND		ug/kg	220	--	1
Dibenzofuran	ND		ug/kg	220	--	1
2-Methylnaphthalene	ND		ug/kg	260	--	1
Acetophenone	ND		ug/kg	220	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	220	--	1
2,4-Dichlorophenol	ND		ug/kg	200	--	1
2,4-Dimethylphenol	ND		ug/kg	220	--	1
2-Nitrophenol	ND		ug/kg	470	--	1
4-Nitrophenol	ND		ug/kg	310	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	440	--	1
Phenol	ND		ug/kg	220	--	1
2-Methylphenol	ND		ug/kg	220	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	320	--	1
2,4,5-Trichlorophenol	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	80		30-130
Phenol-d6	83		30-130
Nitrobenzene-d5	81		30-130
2-Fluorobiphenyl	69		30-130
2,4,6-Tribromophenol	87		30-130
4-Terphenyl-d14	51		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-09  
 Client ID: D-7 28'-42' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/26/15 00:03  
 Analyst: AS  
 Percent Solids: 79%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-09  
**Client ID:** D-7 28'-42' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	990	--	1
Pentachlorophenol	ND		ug/kg	410	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	64		30-130
Phenol-d6	64		30-130
Nitrobenzene-d5	64		30-130
2-Fluorobiphenyl	59		30-130
2,4,6-Tribromophenol	80		30-130
4-Terphenyl-d14	75		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/25/15 09:26  
**Analyst:** AS

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815140-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/25/15 09:26  
**Analyst:** AS

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815140-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 97,8270D  
 Analytical Date: 08/25/15 09:26  
 Analyst: AS

Extraction Method: EPA 3546  
 Extraction Date: 08/24/15 19:20

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815140-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	77		30-130
Phenol-d6	81		30-130
Nitrobenzene-d5	76		30-130
2-Fluorobiphenyl	75		30-130
2,4,6-Tribromophenol	80		30-130
4-Terphenyl-d14	79		30-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815140-2 WG815140-3								
Acenaphthene	66		69		40-140	4		30
1,2,4-Trichlorobenzene	48		62		40-140	25		30
Hexachlorobenzene	77		69		40-140	11		30
Bis(2-chloroethyl)ether	46		63		40-140	31	Q	30
2-Chloronaphthalene	59		70		40-140	17		30
1,2-Dichlorobenzene	43		61		40-140	35	Q	30
1,3-Dichlorobenzene	40		62		40-140	43	Q	30
1,4-Dichlorobenzene	41		61		40-140	39	Q	30
3,3'-Dichlorobenzidine	89		68		40-140	27		30
2,4-Dinitrotoluene	79		73		40-140	8		30
2,6-Dinitrotoluene	77		74		40-140	4		30
Azobenzene	75		72		40-140	4		30
Fluoranthene	83		71		40-140	16		30
4-Bromophenyl phenyl ether	78		71		40-140	9		30
Bis(2-chloroisopropyl)ether	49		64		40-140	27		30
Bis(2-chloroethoxy)methane	54		71		40-140	27		30
Hexachlorobutadiene	45		58		40-140	25		30
Hexachloroethane	38	Q	59		40-140	43	Q	30
Isophorone	60		72		40-140	18		30
Naphthalene	48		63		40-140	27		30
Nitrobenzene	49		65		40-140	28		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815140-2 WG815140-3								
Bis(2-Ethylhexyl)phthalate	94		80		40-140	16		30
Butyl benzyl phthalate	85		74		40-140	14		30
Di-n-butylphthalate	87		74		40-140	16		30
Di-n-octylphthalate	92		80		40-140	14		30
Diethyl phthalate	80		71		40-140	12		30
Dimethyl phthalate	78		72		40-140	8		30
Benzo(a)anthracene	87		75		40-140	15		30
Benzo(a)pyrene	83		70		40-140	17		30
Benzo(b)fluoranthene	83		73		40-140	13		30
Benzo(k)fluoranthene	83		70		40-140	17		30
Chrysene	85		73		40-140	15		30
Acenaphthylene	66		70		40-140	6		30
Anthracene	86		75		40-140	14		30
Benzo(ghi)perylene	77		69		40-140	11		30
Fluorene	74		70		40-140	6		30
Phenanthrene	81		70		40-140	15		30
Dibenzo(a,h)anthracene	78		71		40-140	9		30
Indeno(1,2,3-cd)Pyrene	90		80		40-140	12		30
Pyrene	83		71		40-140	16		30
Aniline	50		64		40-140	25		30
4-Chloroaniline	62		70		40-140	12		30



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815140-2 WG815140-3								
Dibenzofuran	69		69		40-140	0		30
2-Methylnaphthalene	54		68		40-140	23		30
Acetophenone	48		63		40-140	27		30
2,4,6-Trichlorophenol	72		74		30-130	3		30
2-Chlorophenol	50		68		30-130	31	Q	30
2,4-Dichlorophenol	58		71		30-130	20		30
2,4-Dimethylphenol	62		74		30-130	18		30
2-Nitrophenol	45		68		30-130	41	Q	30
4-Nitrophenol	83		62		30-130	29		30
2,4-Dinitrophenol	13	Q	65		30-130	133	Q	30
Pentachlorophenol	77		66		30-130	15		30
Phenol	54		72		30-130	29		30
2-Methylphenol	54		72		30-130	29		30
3-Methylphenol/4-Methylphenol	62		78		30-130	23		30
2,4,5-Trichlorophenol	75		68		30-130	10		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815140-2 WG815140-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	50		69		30-130
Phenol-d6	56		75		30-130
Nitrobenzene-d5	53		71		30-130
2-Fluorobiphenyl	60		71		30-130
2,4,6-Tribromophenol	90		79		30-130
4-Terphenyl-d14	86		74		30-130

# PETROLEUM HYDROCARBONS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-01  
 Client ID: D-12 6'-12' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/24/15 14:35  
 Analyst: AR  
 Percent Solids: 81%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 21:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	ND		ug/kg	40600	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	75		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-03  
 Client ID: D-7 6'-12' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/24/15 15:12  
 Analyst: AR  
 Percent Solids: 87%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 21:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	44000		ug/kg	36700	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	81		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-05  
 Client ID: D-7 12'-18' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/24/15 12:40  
 Analyst: AR  
 Percent Solids: 77%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 21:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	ND		ug/kg	41200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	100		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-07  
 Client ID: D-7 18'-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/24/15 16:24  
 Analyst: AR  
 Percent Solids: 74%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 21:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	53000		ug/kg	43800	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	95		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-09  
 Client ID: D-7 28'-42' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/24/15 13:16  
 Analyst: AR  
 Percent Solids: 79%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 21:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	ND		ug/kg	41400	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	89		40-140



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8015C(M)  
 Analytical Date: 08/24/15 10:51  
 Analyst: AR

Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 21:56

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG814877-1					
TPH	ND		ug/kg	32600	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	93		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814877-2								
TPH	76		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	84				40-140

**Lab Duplicate Analysis**  
**Batch Quality Control**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01,03,05,07,09 QC Batch ID: WG814877-3 QC Sample: L1520182-05 Client ID: D-7 12'-18' COMP						
TPH	ND	ND	ug/kg	NC		40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	100		104		40-140



# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-01  
 Client ID: D-12 6'-12' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/25/15 18:06  
 Analyst: JT  
 Percent Solids: 81%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 20:13  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/24/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/24/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	40.2	--	1	A
Aroclor 1221	ND		ug/kg	40.2	--	1	A
Aroclor 1232	ND		ug/kg	40.2	--	1	A
Aroclor 1242	ND		ug/kg	40.2	--	1	A
Aroclor 1248	ND		ug/kg	40.2	--	1	A
Aroclor 1254	ND		ug/kg	40.2	--	1	A
Aroclor 1260	ND		ug/kg	40.2	--	1	B
Aroclor 1262	ND		ug/kg	40.2	--	1	A
Aroclor 1268	ND		ug/kg	40.2	--	1	A
PCBs, Total	ND		ug/kg	40.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	93		30-150	A
2,4,5,6-Tetrachloro-m-xylene	91		30-150	B
Decachlorobiphenyl	95		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-03  
**Client ID:** D-7 6'-12' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil  
**Analytical Method:** 97,8082A  
**Analytical Date:** 08/25/15 18:23  
**Analyst:** JT  
**Percent Solids:** 87%

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3546  
**Extraction Date:** 08/23/15 20:13  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 08/24/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 08/24/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	37.7	--	1	A
Aroclor 1221	ND		ug/kg	37.7	--	1	A
Aroclor 1232	ND		ug/kg	37.7	--	1	A
Aroclor 1242	ND		ug/kg	37.7	--	1	A
Aroclor 1248	ND		ug/kg	37.7	--	1	A
Aroclor 1254	ND		ug/kg	37.7	--	1	A
Aroclor 1260	ND		ug/kg	37.7	--	1	A
Aroclor 1262	ND		ug/kg	37.7	--	1	A
Aroclor 1268	ND		ug/kg	37.7	--	1	A
PCBs, Total	ND		ug/kg	37.7	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	99		30-150	A
2,4,5,6-Tetrachloro-m-xylene	94		30-150	B
Decachlorobiphenyl	101		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-05  
 Client ID: D-7 12'-18' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/25/15 18:39  
 Analyst: JT  
 Percent Solids: 77%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 20:13  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/24/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/24/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	41.5	--	1	A
Aroclor 1221	ND		ug/kg	41.5	--	1	A
Aroclor 1232	ND		ug/kg	41.5	--	1	A
Aroclor 1242	ND		ug/kg	41.5	--	1	A
Aroclor 1248	ND		ug/kg	41.5	--	1	A
Aroclor 1254	ND		ug/kg	41.5	--	1	A
Aroclor 1260	ND		ug/kg	41.5	--	1	A
Aroclor 1262	ND		ug/kg	41.5	--	1	A
Aroclor 1268	ND		ug/kg	41.5	--	1	A
PCBs, Total	ND		ug/kg	41.5	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	A
Decachlorobiphenyl	94		30-150	A
2,4,5,6-Tetrachloro-m-xylene	91		30-150	B
Decachlorobiphenyl	92		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-07  
 Client ID: D-7 18'-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/25/15 18:56  
 Analyst: JT  
 Percent Solids: 74%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 20:13  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/24/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/24/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	42.2	--	1	A
Aroclor 1221	ND		ug/kg	42.2	--	1	A
Aroclor 1232	ND		ug/kg	42.2	--	1	A
Aroclor 1242	ND		ug/kg	42.2	--	1	A
Aroclor 1248	ND		ug/kg	42.2	--	1	A
Aroclor 1254	ND		ug/kg	42.2	--	1	A
Aroclor 1260	ND		ug/kg	42.2	--	1	A
Aroclor 1262	ND		ug/kg	42.2	--	1	A
Aroclor 1268	ND		ug/kg	42.2	--	1	A
PCBs, Total	ND		ug/kg	42.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	89		30-150	A
2,4,5,6-Tetrachloro-m-xylene	87		30-150	B
Decachlorobiphenyl	93		30-150	B



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-09  
 Client ID: D-7 28'-42' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/25/15 19:13  
 Analyst: JT  
 Percent Solids: 79%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/23/15 20:13  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/24/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/24/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	40.0	--	1	A
Aroclor 1221	ND		ug/kg	40.0	--	1	A
Aroclor 1232	ND		ug/kg	40.0	--	1	A
Aroclor 1242	ND		ug/kg	40.0	--	1	A
Aroclor 1248	ND		ug/kg	40.0	--	1	A
Aroclor 1254	ND		ug/kg	40.0	--	1	A
Aroclor 1260	ND		ug/kg	40.0	--	1	A
Aroclor 1262	ND		ug/kg	40.0	--	1	A
Aroclor 1268	ND		ug/kg	40.0	--	1	A
PCBs, Total	ND		ug/kg	40.0	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	101		30-150	A
2,4,5,6-Tetrachloro-m-xylene	93		30-150	B
Decachlorobiphenyl	98		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**Method Blank Analysis  
 Batch Quality Control**

**Analytical Method:** 97,8082A  
**Analytical Date:** 08/25/15 15:40  
**Analyst:** JT

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/23/15 20:12  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 08/24/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 08/24/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG814866-1						
Aroclor 1016	ND		ug/kg	32.7	--	A
Aroclor 1221	ND		ug/kg	32.7	--	A
Aroclor 1232	ND		ug/kg	32.7	--	A
Aroclor 1242	ND		ug/kg	32.7	--	A
Aroclor 1248	ND		ug/kg	32.7	--	A
Aroclor 1254	ND		ug/kg	32.7	--	A
Aroclor 1260	ND		ug/kg	32.7	--	A
Aroclor 1262	ND		ug/kg	32.7	--	A
Aroclor 1268	ND		ug/kg	32.7	--	A
PCBs, Total	ND		ug/kg	32.7	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	93		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	90		30-150	B



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814866-2 WG814866-3									
Aroclor 1016	69		62		40-140	11		30	A
Aroclor 1260	85		77		40-140	10		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		68		30-150	A
Decachlorobiphenyl	93		84		30-150	A
2,4,5,6-Tetrachloro-m-xylene	85		73		30-150	B
Decachlorobiphenyl	87		76		30-150	B

## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-01  
 Client ID: D-12 6'-12' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 81%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.1		mg/kg	0.49	--	1	08/21/15 04:37	08/21/15 17:57	EPA 3050B	97,6010C	JH
Barium, Total	28		mg/kg	0.49	--	1	08/21/15 04:37	08/21/15 17:57	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.49	--	1	08/21/15 04:37	08/21/15 17:57	EPA 3050B	97,6010C	JH
Chromium, Total	17		mg/kg	0.49	--	1	08/21/15 04:37	08/21/15 17:57	EPA 3050B	97,6010C	JH
Lead, Total	5.0		mg/kg	2.4	--	1	08/21/15 04:37	08/21/15 17:57	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.077	--	1	08/21/15 09:55	08/21/15 11:59	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.4	--	1	08/21/15 04:37	08/21/15 17:57	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.49	--	1	08/21/15 04:37	08/21/15 17:57	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-03  
 Client ID: D-7 6'-12' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 87%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.0		mg/kg	0.45	--	1	08/21/15 04:37	08/21/15 18:01	EPA 3050B	97,6010C	JH
Barium, Total	35		mg/kg	0.45	--	1	08/21/15 04:37	08/21/15 18:01	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.45	--	1	08/21/15 04:37	08/21/15 18:01	EPA 3050B	97,6010C	JH
Chromium, Total	16		mg/kg	0.45	--	1	08/21/15 04:37	08/21/15 18:01	EPA 3050B	97,6010C	JH
Lead, Total	110		mg/kg	2.3	--	1	08/21/15 04:37	08/21/15 18:01	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.077	--	1	08/21/15 09:55	08/21/15 12:01	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.3	--	1	08/21/15 04:37	08/21/15 18:01	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.45	--	1	08/21/15 04:37	08/21/15 18:01	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-05  
 Client ID: D-7 12'-18' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 77%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	6.5		mg/kg	0.51	--	1	08/21/15 04:37	08/21/15 18:05	EPA 3050B	97,6010C	JH
Barium, Total	49		mg/kg	0.51	--	1	08/21/15 04:37	08/21/15 18:05	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.51	--	1	08/21/15 04:37	08/21/15 18:05	EPA 3050B	97,6010C	JH
Chromium, Total	26		mg/kg	0.51	--	1	08/21/15 04:37	08/21/15 18:05	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.6	--	1	08/21/15 04:37	08/21/15 18:05	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.087	--	1	08/21/15 09:55	08/21/15 12:03	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.6	--	1	08/21/15 04:37	08/21/15 18:05	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.51	--	1	08/21/15 04:37	08/21/15 18:05	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-07  
 Client ID: D-7 18'-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 74%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.9		mg/kg	0.53	--	1	08/21/15 04:37	08/21/15 18:09	EPA 3050B	97,6010C	JH
Barium, Total	29		mg/kg	0.53	--	1	08/21/15 04:37	08/21/15 18:09	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.53	--	1	08/21/15 04:37	08/21/15 18:09	EPA 3050B	97,6010C	JH
Chromium, Total	16		mg/kg	0.53	--	1	08/21/15 04:37	08/21/15 18:09	EPA 3050B	97,6010C	JH
Lead, Total	39		mg/kg	2.6	--	1	08/21/15 04:37	08/21/15 18:09	EPA 3050B	97,6010C	JH
Mercury, Total	0.190		mg/kg	0.084	--	1	08/21/15 09:55	08/21/15 12:04	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.6	--	1	08/21/15 04:37	08/21/15 18:09	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.53	--	1	08/21/15 04:37	08/21/15 18:09	EPA 3050B	97,6010C	JH





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

Lab ID: L1520182-09  
 Client ID: D-7 28'-42' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 79%

Date Collected: 08/20/15 14:30  
 Date Received: 08/20/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	3.5		mg/kg	0.50	--	1	08/21/15 04:37	08/21/15 18:13	EPA 3050B	97,6010C	JH
Barium, Total	57		mg/kg	0.50	--	1	08/21/15 04:37	08/21/15 18:13	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.50	--	1	08/21/15 04:37	08/21/15 18:13	EPA 3050B	97,6010C	JH
Chromium, Total	27		mg/kg	0.50	--	1	08/21/15 04:37	08/21/15 18:13	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.5	--	1	08/21/15 04:37	08/21/15 18:13	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.081	--	1	08/21/15 09:55	08/21/15 12:06	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.5	--	1	08/21/15 04:37	08/21/15 18:13	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.50	--	1	08/21/15 04:37	08/21/15 18:13	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG814173-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	08/21/15 04:37	08/21/15 11:57	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	08/21/15 04:37	08/21/15 11:57	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	08/21/15 04:37	08/21/15 11:57	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	08/21/15 04:37	08/21/15 11:57	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	08/21/15 04:37	08/21/15 11:57	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	08/21/15 04:37	08/21/15 11:57	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	08/21/15 04:37	08/21/15 11:57	97,6010C	JH

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG814174-1									
Mercury, Total	ND	mg/kg	0.083	--	1	08/21/15 09:55	08/21/15 11:05	97,7471B	DB

### Prep Information

Digestion Method: EPA 7471B

## Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814173-2 WG814173-3 SRM Lot Number: D088-540								
Arsenic, Total	105		105		79-121	0		30
Barium, Total	105		99		83-117	6		30
Cadmium, Total	105		106		83-117	1		30
Chromium, Total	101		101		80-120	0		30
Lead, Total	97		98		81-117	1		30
Selenium, Total	108		108		78-122	0		30
Silver, Total	112		105		75-124	6		30
MCP Total Metals - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814174-2 WG814174-3 SRM Lot Number: D088-540								
Mercury, Total	106		106		72-128	0		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

### SAMPLE RESULTS

**Lab ID:** L1520182-01  
**Client ID:** D-12 6'-12' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/24/15 23:00	1,1030	SB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

### SAMPLE RESULTS

**Lab ID:** L1520182-03  
**Client ID:** D-7 6'-12' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Coarse  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/24/15 23:00	1,1030	SB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

### SAMPLE RESULTS

**Lab ID:** L1520182-05  
**Client ID:** D-7 12'-18' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/24/15 23:00	1,1030	SB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

### SAMPLE RESULTS

**Lab ID:** L1520182-07  
**Client ID:** D-7 18'-24' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/24/15 23:00	1,1030	SB





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

### SAMPLE RESULTS

**Lab ID:** L1520182-09  
**Client ID:** D-7 28'-42' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/24/15 23:00	1,1030	SB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-01  
**Client ID:** D-12 6'-12' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	85		umhos/cm	10	--	1	-	08/21/15 02:08	1,9050A	TA
Solids, Total	81.0		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT
pH (H)	9.2		SU	-	NA	1	-	08/20/15 23:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:29	1,7.3	ML
Sulfide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:20	1,7.3	ML



Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520182-02

Date Collected: 08/20/15 14:30

Client ID: D-12 S-5 10'-12'

Date Received: 08/20/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.0		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-03  
**Client ID:** D-7 6'-12' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	210		umhos/cm	10	--	1	-	08/21/15 02:08	1,9050A	TA
Solids, Total	87.0		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT
pH (H)	10		SU	-	NA	1	-	08/20/15 23:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:29	1,7.3	ML
Sulfide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:20	1,7.3	ML



Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520182-04

Date Collected: 08/20/15 14:30

Client ID: D-7 S-5 10'-12'

Date Received: 08/20/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.0		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-05  
**Client ID:** D-7 12'-18' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	140		umhos/cm	10	--	1	-	08/21/15 02:08	1,9050A	TA
Solids, Total	77.2		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT
pH (H)	9.1		SU	-	NA	1	-	08/20/15 23:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:29	1,7.3	ML
Sulfide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:21	1,7.3	ML



Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520182-06

Date Collected: 08/20/15 14:30

Client ID: D-7 S-7 14'-16'

Date Received: 08/20/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.2		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-07  
**Client ID:** D-7 18'-24' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	220		umhos/cm	10	--	1	-	08/21/15 02:08	1,9050A	TA
Solids, Total	74.4		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT
pH (H)	8.8		SU	-	NA	1	-	08/20/15 23:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:30	1,7.3	ML
Sulfide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:21	1,7.3	ML





Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520182-08

Date Collected: 08/20/15 14:30

Client ID: D-7 S-11 22'-24'

Date Received: 08/20/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.4		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**SAMPLE RESULTS**

**Lab ID:** L1520182-09  
**Client ID:** D-7 28'-42' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/20/15 14:30  
**Date Received:** 08/20/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	1000		umhos/cm	10	--	1	-	08/21/15 02:08	1,9050A	TA
Solids, Total	78.5		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT
pH (H)	8.0		SU	-	NA	1	-	08/20/15 23:30	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:30	1,7.3	ML
Sulfide, Reactive	ND		mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:21	1,7.3	ML



Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

## SAMPLE RESULTS

Lab ID: L1520182-10

Date Collected: 08/20/15 14:30

Client ID: D-7 S-15 35'-37'

Date Received: 08/20/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.5		%	0.100	NA	1	-	08/20/15 23:18	30,2540G	RT



Project Name: FAN PIER PARCEL D

Lab Number: L1520182

Project Number: 4426.9.1D

Report Date: 08/26/15

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815150-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:25	1,7.3	ML
General Chemistry - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815151-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	08/24/15 21:36	08/24/15 23:16	1,7.3	ML

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1520182

Report Date: 08/26/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814112-1								
pH	101		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814114-1								
Specific Conductance	96		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815150-2								
Cyanide, Reactive	44		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815151-2								
Sulfide, Reactive	91		-		60-125	-		40

## Lab Duplicate Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1520182

Report Date: 08/26/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 QC Batch ID: WG814114-2 QC Sample: L1520182-01 Client ID: D-12 6'-12' COMP						
Specific Conductance	85	95	umhos/cm	11		20

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** 08/20/2015 20:27

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1520182-01A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520182-02A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520182-02B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520182-02C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520182-03A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520182-04A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520182-04B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520182-04C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1520182-05A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520182-06A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520182-06B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520182-06C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520182-07A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520182-08A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520182-08B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520182-08C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520182-09A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520182-10A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520182-10B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520182-10C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)

**Container Comments**

\*Values in parentheses indicate holding time in days





**Project Name:** FAN PIER PARCEL D**Project Number:** 4426.9.1D**Lab Number:** L1520182**Report Date:** 08/26/15**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
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**Container Comments**

L1520182-01A

L1520182-03A

L1520182-05A

L1520182-07A

L1520182-09A

\*Values in parentheses indicate holding time in days

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

## 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

#### **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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520182  
**Report Date:** 08/26/15

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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, NO<sub>2</sub>, NO<sub>3</sub>.

**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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



7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1520182

Instrument ID: Voall10.i      Calibration Date: 25-AUG-2015      Time: 19:26

Lab File ID: 0825N01      Init. Calib. Date(s): 12-AUG-2      12-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 13:32      16:49

Compound	RRF	RRF	MIN RRF	%D	MAX %D
dichlorodifluoromethane	.22596	.26661	.1	18	20
chloromethane	.25549	.2949	.1	15	20
vinyl chloride	.32994	.37251	.1	13	20
bromomethane	100	110	.1	10	20
chloroethane	100	158	.1	58	20
trichlorofluoromethane	.37899	.41143	.1	9	20
ethyl ether	.14897	.15643	.05	5	20
1,1,-dichloroethene	.22393	.23008	.1	3	20
carbon disulfide	.73895	.78974	.1	7	20
methylene chloride	.27994	.28537	.1	2	20
acetone	.0704	.08639	.1	23	20
trans-1,2-dichloroethene	.26098	.26594	.1	2	20
methyl tert butyl ether	.76577	.69974	.1	-9	20
Diisopropyl Ether	.83503	.9324	.05	12	20
1,1-dichloroethane	.47594	.54582	.2	15	20
Ethyl-Tert-Butyl-Ether	.828	.81182	.05	-2	20
cis-1,2-dichloroethene	.28419	.28919	.1	2	20
2,2-dichloropropane	.37174	.42038	.05	13	20
bromochloromethane	.11572	.11898	.05	3	20
chloroform	.46186	.5053	.2	9	20
carbontetrachloride	.32441	.35216	.1	9	20
tetrahydrofuran	.08034	.07608	.05	-5	20
1,1,1-trichloroethane	.393	.4215	.1	7	20
2-butanone	.11061	.10968	.1	-1	20
1,1-dichloropropene	.34462	.37671	.05	9	20
benzene	1.0475	1.1331	.5	8	20
Tertiary-Amyl Methyl Ether	.75742	.68264	.05	-10	20
1,2-dichloroethane	.35229	.38245	.1	9	20
trichloroethene	.26232	.2816	.2	7	20
dibromomethane	.1408	.14303	.05	2	20
1,2-dichloropropane	.25448	.28125	.1	11	20
bromodichloromethane	.3399	.3568	.2	5	20
1,4-dioxane	.00296	.00196	.05	-34	20
cis-1,3-dichloropropene	.41271	.42906	.2	4	20
toluene	.96071	1.0018	.4	4	20
4-methyl-2-pentanone	.08998	.06856	.1	-24	20
tetrachloroethene	.34468	.32195	.2	-7	20
trans-1,3-dichloropropene	.51535	.5482	.1	6	20

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1520182

Instrument ID: Voal10.i      Calibration Date: 25-AUG-2015      Time: 19:26

Lab File ID: 0825N01      Init. Calib. Date(s): 12-AUG-2      12-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 13:32      16:49

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.25723	.27857	.1	8	20
chlorodibromomethane	.33402	.31611	.1	-5	20
1,3-dichloropropane	.54606	.57026	.05	4	20
1,2-dibromoethane	.29183	.27592	.1	-5	20
2-hexanone	.2266	.17272	.1	-24	20
chlorobenzene	1.0313	1.0319	.5	0	20
ethyl benzene	1.7760	1.8375	.1	3	20
1,1,1,2-tetrachloroethane	.34262	.34007	.05	-1	20
p/m xylene	.71267	.70845	.1	-1	20
o xylene	.68551	.65887	.3	-4	20
styrene	1.1763	1.1100	.3	-6	20
bromoform	100	79.834	.1	-20	20
isopropylbenzene	3.5063	3.5245	.1	1	20
bromobenzene	.79683	.72777	.05	-9	20
n-propylbenzene	4.1574	4.5121	.05	9	20
1,1,2,2,-tetrachloroethane	.80166	.8383	.3	5	20
2-chlorotoluene	2.5697	2.7947	.05	9	20
1,3,5-trimethylbenzene	3.0113	3.0937	.05	3	20
1,2,3-trichloropropane	.68038	.70893	.05	4	20
4-chlorotoluene	2.5402	2.7124	.05	7	20
tert-butylbenzene	2.5446	2.5096	.05	-1	20
1,2,4-trimethylbenzene	2.9967	3.0279	.05	1	20
sec-butylbenzene	3.7765	3.9758	.05	5	20
p-isopropyltoluene	3.3116	3.2713	.05	-1	20
1,3-dichlorobenzene	1.5860	1.5540	.6	-2	20
1,4-dichlorobenzene	1.6084	1.5539	.5	-3	20
n-butylbenzene	2.9757	3.3365	.05	12	20
1,2-dichlorobenzene	1.4693	1.3852	.4	-6	20
1,2-dibromo-3-chloropropane	.11334	.08551	.05	-25	20
hexachlorobutadiene	.45751	.39942	.05	-13	20
1,2,4-trichlorobenzene	.98141	.84473	.2	-14	20
naphthalene	2.6149	2.0926	.05	-20	20
1,2,3-trichlorobenzene	.92497	.78457	.05	-15	20
dibromofluoromethane	.23562	.24185	.05	3	30
1,2-dichloroethane-d4	.26988	.28971	.05	7	30
toluene-d8	1.3455	1.3867	.05	3	30
4-bromofluorobenzene	.96878	.99013	.05	2	30

FORM VII MCP-8260HLW-10





## ANALYTICAL REPORT

Lab Number:	L1520300
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	08/27/15

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

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



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1520300-01	D-12 12'-18' COMP	SOIL	BOSTON, MA	08/21/15 14:00	08/21/15
L1520300-02	D-12 S-6 12'-14'	SOIL	BOSTON, MA	08/21/15 14:00	08/21/15
L1520300-03	D-12 18'-24' COMP	SOIL	BOSTON, MA	08/21/15 14:00	08/21/15
L1520300-04	D-12 S-10 20'-22'	SOIL	BOSTON, MA	08/21/15 14:00	08/21/15
L1520300-05	D-12 28'-42' COMP	SOIL	BOSTON, MA	08/21/15 14:00	08/21/15
L1520300-06	D-12 S-15 35'-37'	SOIL	BOSTON, MA	08/21/15 14:00	08/21/15
L1520300-07	D-4/D-7/D-8/D-12 ORG. COMP	SOIL	BOSTON, MA	08/21/15 14:00	08/21/15
L1520300-08	D-12 S-12 24'-26'	SOIL	BOSTON, MA	08/21/15 14:00	08/21/15
L1520300-09	D-4/D-7/D-8/D-12 SAND COMP	SOIL	BOSTON, MA	08/21/15 14:00	08/21/15
L1520300-10	D-7 S-13 26'-28'	SOIL	BOSTON, MA	08/21/15 14:00	08/21/15

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

### 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

The samples submitted for Volatile Organics were received without raw soil for the Total Solids analysis. The Total Solids results from the corresponding composite samples were utilized in the dry weight calculation of the Volatile Organics data.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1520300-02, -04, -06, -08, and -10, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.00162) and 4-methyl-2-pentanone (0.07493) as well as the average response factor for trichloroethene, 1,4-dioxane and 4-methyl-2-pentanone. The initial calibration verification is outside acceptance criteria for tetrahydrofuran (65%), but within overall method criteria.

The continuing calibration standard, associated with L1520300-02, -04, -06, -08, and -10, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

##### Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

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: 08/27/15

# ORGANICS

# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-02  
 Client ID: D-12 S-6 12'-14'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/26/15 21:59  
 Analyst: MS  
 Percent Solids: 78%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	10	--	1
1,1-Dichloroethane	ND		ug/kg	1.6	--	1
Chloroform	ND		ug/kg	1.6	--	1
Carbon tetrachloride	ND		ug/kg	1.0	--	1
1,2-Dichloropropane	ND		ug/kg	3.7	--	1
Dibromochloromethane	ND		ug/kg	1.0	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.6	--	1
Tetrachloroethene	ND		ug/kg	1.0	--	1
Chlorobenzene	ND		ug/kg	1.0	--	1
Trichlorofluoromethane	ND		ug/kg	4.2	--	1
1,2-Dichloroethane	ND		ug/kg	1.0	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.0	--	1
Bromodichloromethane	ND		ug/kg	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--	1
1,1-Dichloropropene	ND		ug/kg	4.2	--	1
Bromoform	ND		ug/kg	4.2	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--	1
Benzene	ND		ug/kg	1.0	--	1
Toluene	ND		ug/kg	1.6	--	1
Ethylbenzene	ND		ug/kg	1.0	--	1
Chloromethane	ND		ug/kg	4.2	--	1
Bromomethane	ND		ug/kg	2.1	--	1
Vinyl chloride	ND		ug/kg	2.1	--	1
Chloroethane	ND		ug/kg	2.1	--	1
1,1-Dichloroethene	ND		ug/kg	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	--	1
Trichloroethene	ND		ug/kg	1.0	--	1
1,2-Dichlorobenzene	ND		ug/kg	4.2	--	1



Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

## SAMPLE RESULTS

Lab ID: L1520300-02  
 Client ID: D-12 S-6 12'-14'  
 Sample Location: BOSTON, MA

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	4.2	--	1
1,4-Dichlorobenzene	ND		ug/kg	4.2	--	1
Methyl tert butyl ether	ND		ug/kg	2.1	--	1
p/m-Xylene	ND		ug/kg	2.1	--	1
o-Xylene	ND		ug/kg	2.1	--	1
Xylenes, Total	ND		ug/kg	2.1	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--	1
Dibromomethane	ND		ug/kg	4.2	--	1
1,2,3-Trichloropropane	ND		ug/kg	4.2	--	1
Styrene	ND		ug/kg	2.1	--	1
Dichlorodifluoromethane	ND		ug/kg	10	--	1
Acetone	ND		ug/kg	38	--	1
Carbon disulfide	4.9		ug/kg	4.2	--	1
Methyl ethyl ketone	ND		ug/kg	10	--	1
Methyl isobutyl ketone	ND		ug/kg	10	--	1
2-Hexanone	ND		ug/kg	10	--	1
Bromochloromethane	ND		ug/kg	4.2	--	1
Tetrahydrofuran	ND		ug/kg	4.2	--	1
2,2-Dichloropropane	ND		ug/kg	5.2	--	1
1,2-Dibromoethane	ND		ug/kg	4.2	--	1
1,3-Dichloropropane	ND		ug/kg	4.2	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--	1
Bromobenzene	ND		ug/kg	5.2	--	1
n-Butylbenzene	ND		ug/kg	1.0	--	1
sec-Butylbenzene	ND		ug/kg	1.0	--	1
tert-Butylbenzene	ND		ug/kg	4.2	--	1
o-Chlorotoluene	ND		ug/kg	4.2	--	1
p-Chlorotoluene	ND		ug/kg	4.2	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.2	--	1
Hexachlorobutadiene	ND		ug/kg	4.2	--	1
Isopropylbenzene	ND		ug/kg	1.0	--	1
p-Isopropyltoluene	ND		ug/kg	1.0	--	1
Naphthalene	ND		ug/kg	4.2	--	1
n-Propylbenzene	ND		ug/kg	1.0	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	4.2	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	4.2	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	4.2	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	4.2	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-02  
 Client ID: D-12 S-6 12'-14'  
 Sample Location: BOSTON, MA

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	5.2	--	1
Diisopropyl Ether	ND		ug/kg	4.2	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.2	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.2	--	1
1,4-Dioxane	ND		ug/kg	42	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	97		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-04  
 Client ID: D-12 S-10 20'-22'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/26/15 22:25  
 Analyst: MS  
 Percent Solids: 76%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	15	--	1
1,1-Dichloroethane	ND		ug/kg	2.2	--	1
Chloroform	ND		ug/kg	2.2	--	1
Carbon tetrachloride	ND		ug/kg	1.5	--	1
1,2-Dichloropropane	ND		ug/kg	5.1	--	1
Dibromochloromethane	ND		ug/kg	1.5	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.2	--	1
Tetrachloroethene	ND		ug/kg	1.5	--	1
Chlorobenzene	ND		ug/kg	1.5	--	1
Trichlorofluoromethane	ND		ug/kg	5.9	--	1
1,2-Dichloroethane	ND		ug/kg	1.5	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.5	--	1
Bromodichloromethane	ND		ug/kg	1.5	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.5	--	1
1,1-Dichloropropene	ND		ug/kg	5.9	--	1
Bromoform	ND		ug/kg	5.9	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Benzene	ND		ug/kg	1.5	--	1
Toluene	ND		ug/kg	2.2	--	1
Ethylbenzene	ND		ug/kg	1.5	--	1
Chloromethane	ND		ug/kg	5.9	--	1
Bromomethane	ND		ug/kg	2.9	--	1
Vinyl chloride	ND		ug/kg	2.9	--	1
Chloroethane	ND		ug/kg	2.9	--	1
1,1-Dichloroethene	ND		ug/kg	1.5	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.2	--	1
Trichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.9	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

**Lab ID:** L1520300-04  
**Client ID:** D-12 S-10 20'-22'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/21/15 14:00  
**Date Received:** 08/21/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	5.9	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.9	--	1
Methyl tert butyl ether	ND		ug/kg	2.9	--	1
p/m-Xylene	ND		ug/kg	2.9	--	1
o-Xylene	ND		ug/kg	2.9	--	1
Xylenes, Total	ND		ug/kg	2.9	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.5	--	1
Dibromomethane	ND		ug/kg	5.9	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.9	--	1
Styrene	ND		ug/kg	2.9	--	1
Dichlorodifluoromethane	ND		ug/kg	15	--	1
Acetone	ND		ug/kg	53	--	1
Carbon disulfide	ND		ug/kg	5.9	--	1
Methyl ethyl ketone	ND		ug/kg	15	--	1
Methyl isobutyl ketone	ND		ug/kg	15	--	1
2-Hexanone	ND		ug/kg	15	--	1
Bromochloromethane	ND		ug/kg	5.9	--	1
Tetrahydrofuran	ND		ug/kg	5.9	--	1
2,2-Dichloropropane	ND		ug/kg	7.3	--	1
1,2-Dibromoethane	ND		ug/kg	5.9	--	1
1,3-Dichloropropane	ND		ug/kg	5.9	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Bromobenzene	ND		ug/kg	7.3	--	1
n-Butylbenzene	ND		ug/kg	1.5	--	1
sec-Butylbenzene	ND		ug/kg	1.5	--	1
tert-Butylbenzene	ND		ug/kg	5.9	--	1
o-Chlorotoluene	ND		ug/kg	5.9	--	1
p-Chlorotoluene	ND		ug/kg	5.9	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.9	--	1
Hexachlorobutadiene	ND		ug/kg	5.9	--	1
Isopropylbenzene	ND		ug/kg	1.5	--	1
p-Isopropyltoluene	ND		ug/kg	1.5	--	1
Naphthalene	ND		ug/kg	5.9	--	1
n-Propylbenzene	ND		ug/kg	1.5	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	5.9	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.9	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.9	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.9	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-04  
 Client ID: D-12 S-10 20'-22'  
 Sample Location: BOSTON, MA

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	7.3	--	1
Diisopropyl Ether	ND		ug/kg	5.9	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.9	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.9	--	1
1,4-Dioxane	ND		ug/kg	59	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	100		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-06  
 Client ID: D-12 S-15 35'-37'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/26/15 22:51  
 Analyst: MS  
 Percent Solids: 75%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	13	--	1
1,1-Dichloroethane	ND		ug/kg	2.0	--	1
Chloroform	ND		ug/kg	2.0	--	1
Carbon tetrachloride	ND		ug/kg	1.3	--	1
1,2-Dichloropropane	ND		ug/kg	4.7	--	1
Dibromochloromethane	ND		ug/kg	1.3	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.0	--	1
Tetrachloroethene	ND		ug/kg	1.3	--	1
Chlorobenzene	ND		ug/kg	1.3	--	1
Trichlorofluoromethane	ND		ug/kg	5.3	--	1
1,2-Dichloroethane	ND		ug/kg	1.3	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.3	--	1
Bromodichloromethane	ND		ug/kg	1.3	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.3	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.3	--	1
1,1-Dichloropropene	ND		ug/kg	5.3	--	1
Bromoform	ND		ug/kg	5.3	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Benzene	ND		ug/kg	1.3	--	1
Toluene	ND		ug/kg	2.0	--	1
Ethylbenzene	ND		ug/kg	1.3	--	1
Chloromethane	ND		ug/kg	5.3	--	1
Bromomethane	ND		ug/kg	2.7	--	1
Vinyl chloride	ND		ug/kg	2.7	--	1
Chloroethane	ND		ug/kg	2.7	--	1
1,1-Dichloroethene	ND		ug/kg	1.3	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.0	--	1
Trichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.3	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

## SAMPLE RESULTS

Lab ID: L1520300-06

Date Collected: 08/21/15 14:00

Client ID: D-12 S-15 35'-37'

Date Received: 08/21/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	5.3	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.3	--	1
Methyl tert butyl ether	ND		ug/kg	2.7	--	1
p/m-Xylene	ND		ug/kg	2.7	--	1
o-Xylene	ND		ug/kg	2.7	--	1
Xylenes, Total	ND		ug/kg	2.7	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.3	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.3	--	1
Dibromomethane	ND		ug/kg	5.3	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.3	--	1
Styrene	ND		ug/kg	2.7	--	1
Dichlorodifluoromethane	ND		ug/kg	13	--	1
Acetone	ND		ug/kg	48	--	1
Carbon disulfide	ND		ug/kg	5.3	--	1
Methyl ethyl ketone	ND		ug/kg	13	--	1
Methyl isobutyl ketone	ND		ug/kg	13	--	1
2-Hexanone	ND		ug/kg	13	--	1
Bromochloromethane	ND		ug/kg	5.3	--	1
Tetrahydrofuran	ND		ug/kg	5.3	--	1
2,2-Dichloropropane	ND		ug/kg	6.6	--	1
1,2-Dibromoethane	ND		ug/kg	5.3	--	1
1,3-Dichloropropane	ND		ug/kg	5.3	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.3	--	1
Bromobenzene	ND		ug/kg	6.6	--	1
n-Butylbenzene	ND		ug/kg	1.3	--	1
sec-Butylbenzene	ND		ug/kg	1.3	--	1
tert-Butylbenzene	ND		ug/kg	5.3	--	1
o-Chlorotoluene	ND		ug/kg	5.3	--	1
p-Chlorotoluene	ND		ug/kg	5.3	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.3	--	1
Hexachlorobutadiene	ND		ug/kg	5.3	--	1
Isopropylbenzene	ND		ug/kg	1.3	--	1
p-Isopropyltoluene	ND		ug/kg	1.3	--	1
Naphthalene	ND		ug/kg	5.3	--	1
n-Propylbenzene	ND		ug/kg	1.3	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	5.3	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.3	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.3	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.3	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-06  
 Client ID: D-12 S-15 35'-37'  
 Sample Location: BOSTON, MA

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	6.6	--	1
Diisopropyl Ether	ND		ug/kg	5.3	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.3	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.3	--	1
1,4-Dioxane	ND		ug/kg	53	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	100		70-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-08  
 Client ID: D-12 S-12 24'-26'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/26/15 23:18  
 Analyst: MS  
 Percent Solids: 81%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	12	--	1
1,1-Dichloroethane	ND		ug/kg	1.8	--	1
Chloroform	ND		ug/kg	1.8	--	1
Carbon tetrachloride	ND		ug/kg	1.2	--	1
1,2-Dichloropropane	ND		ug/kg	4.3	--	1
Dibromochloromethane	ND		ug/kg	1.2	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.8	--	1
Tetrachloroethene	ND		ug/kg	1.2	--	1
Chlorobenzene	ND		ug/kg	1.2	--	1
Trichlorofluoromethane	ND		ug/kg	4.9	--	1
1,2-Dichloroethane	ND		ug/kg	1.2	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.2	--	1
Bromodichloromethane	ND		ug/kg	1.2	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.2	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.2	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.2	--	1
1,1-Dichloropropene	ND		ug/kg	4.9	--	1
Bromoform	ND		ug/kg	4.9	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.2	--	1
Benzene	ND		ug/kg	1.2	--	1
Toluene	ND		ug/kg	1.8	--	1
Ethylbenzene	ND		ug/kg	1.2	--	1
Chloromethane	ND		ug/kg	4.9	--	1
Bromomethane	ND		ug/kg	2.5	--	1
Vinyl chloride	ND		ug/kg	2.5	--	1
Chloroethane	ND		ug/kg	2.5	--	1
1,1-Dichloroethene	ND		ug/kg	1.2	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.8	--	1
Trichloroethene	ND		ug/kg	1.2	--	1
1,2-Dichlorobenzene	ND		ug/kg	4.9	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

## SAMPLE RESULTS

Lab ID: L1520300-08  
 Client ID: D-12 S-12 24'-26'  
 Sample Location: BOSTON, MA

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	4.9	--	1
1,4-Dichlorobenzene	ND		ug/kg	4.9	--	1
Methyl tert butyl ether	ND		ug/kg	2.5	--	1
p/m-Xylene	ND		ug/kg	2.5	--	1
o-Xylene	ND		ug/kg	2.5	--	1
Xylenes, Total	ND		ug/kg	2.5	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.2	--	1
Dibromomethane	ND		ug/kg	4.9	--	1
1,2,3-Trichloropropane	ND		ug/kg	4.9	--	1
Styrene	ND		ug/kg	2.5	--	1
Dichlorodifluoromethane	ND		ug/kg	12	--	1
Acetone	ND		ug/kg	44	--	1
Carbon disulfide	5.2		ug/kg	4.9	--	1
Methyl ethyl ketone	ND		ug/kg	12	--	1
Methyl isobutyl ketone	ND		ug/kg	12	--	1
2-Hexanone	ND		ug/kg	12	--	1
Bromochloromethane	ND		ug/kg	4.9	--	1
Tetrahydrofuran	ND		ug/kg	4.9	--	1
2,2-Dichloropropane	ND		ug/kg	6.2	--	1
1,2-Dibromoethane	ND		ug/kg	4.9	--	1
1,3-Dichloropropane	ND		ug/kg	4.9	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.2	--	1
Bromobenzene	ND		ug/kg	6.2	--	1
n-Butylbenzene	ND		ug/kg	1.2	--	1
sec-Butylbenzene	ND		ug/kg	1.2	--	1
tert-Butylbenzene	ND		ug/kg	4.9	--	1
o-Chlorotoluene	ND		ug/kg	4.9	--	1
p-Chlorotoluene	ND		ug/kg	4.9	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.9	--	1
Hexachlorobutadiene	ND		ug/kg	4.9	--	1
Isopropylbenzene	ND		ug/kg	1.2	--	1
p-Isopropyltoluene	ND		ug/kg	1.2	--	1
Naphthalene	ND		ug/kg	4.9	--	1
n-Propylbenzene	ND		ug/kg	1.2	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	4.9	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	4.9	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	4.9	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	4.9	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-08  
 Client ID: D-12 S-12 24'-26'  
 Sample Location: BOSTON, MA

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Diethyl ether	ND		ug/kg	6.2	--	1
Diisopropyl Ether	ND		ug/kg	4.9	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.9	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.9	--	1
1,4-Dioxane	ND		ug/kg	49	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	99		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-10  
 Client ID: D-7 S-13 26'-28'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/26/15 23:44  
 Analyst: MS  
 Percent Solids: 81%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	15	--	1
1,1-Dichloroethane	ND		ug/kg	2.3	--	1
Chloroform	ND		ug/kg	2.3	--	1
Carbon tetrachloride	ND		ug/kg	1.5	--	1
1,2-Dichloropropane	ND		ug/kg	5.4	--	1
Dibromochloromethane	ND		ug/kg	1.5	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.3	--	1
Tetrachloroethene	ND		ug/kg	1.5	--	1
Chlorobenzene	ND		ug/kg	1.5	--	1
Trichlorofluoromethane	ND		ug/kg	6.2	--	1
1,2-Dichloroethane	ND		ug/kg	1.5	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.5	--	1
Bromodichloromethane	ND		ug/kg	1.5	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.5	--	1
1,1-Dichloropropene	ND		ug/kg	6.2	--	1
Bromoform	ND		ug/kg	6.2	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Benzene	ND		ug/kg	1.5	--	1
Toluene	ND		ug/kg	2.3	--	1
Ethylbenzene	ND		ug/kg	1.5	--	1
Chloromethane	ND		ug/kg	6.2	--	1
Bromomethane	ND		ug/kg	3.1	--	1
Vinyl chloride	ND		ug/kg	3.1	--	1
Chloroethane	ND		ug/kg	3.1	--	1
1,1-Dichloroethene	ND		ug/kg	1.5	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.3	--	1
Trichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichlorobenzene	ND		ug/kg	6.2	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

## SAMPLE RESULTS

Lab ID: L1520300-10  
 Client ID: D-7 S-13 26'-28'  
 Sample Location: BOSTON, MA

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	6.2	--	1
1,4-Dichlorobenzene	ND		ug/kg	6.2	--	1
Methyl tert butyl ether	ND		ug/kg	3.1	--	1
p/m-Xylene	ND		ug/kg	3.1	--	1
o-Xylene	ND		ug/kg	3.1	--	1
Xylenes, Total	ND		ug/kg	3.1	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.5	--	1
Dibromomethane	ND		ug/kg	6.2	--	1
1,2,3-Trichloropropane	ND		ug/kg	6.2	--	1
Styrene	ND		ug/kg	3.1	--	1
Dichlorodifluoromethane	ND		ug/kg	15	--	1
Acetone	ND		ug/kg	56	--	1
Carbon disulfide	16		ug/kg	6.2	--	1
Methyl ethyl ketone	ND		ug/kg	15	--	1
Methyl isobutyl ketone	ND		ug/kg	15	--	1
2-Hexanone	ND		ug/kg	15	--	1
Bromochloromethane	ND		ug/kg	6.2	--	1
Tetrahydrofuran	ND		ug/kg	6.2	--	1
2,2-Dichloropropane	ND		ug/kg	7.7	--	1
1,2-Dibromoethane	ND		ug/kg	6.2	--	1
1,3-Dichloropropane	ND		ug/kg	6.2	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Bromobenzene	ND		ug/kg	7.7	--	1
n-Butylbenzene	ND		ug/kg	1.5	--	1
sec-Butylbenzene	ND		ug/kg	1.5	--	1
tert-Butylbenzene	ND		ug/kg	6.2	--	1
o-Chlorotoluene	ND		ug/kg	6.2	--	1
p-Chlorotoluene	ND		ug/kg	6.2	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	6.2	--	1
Hexachlorobutadiene	ND		ug/kg	6.2	--	1
Isopropylbenzene	ND		ug/kg	1.5	--	1
p-Isopropyltoluene	ND		ug/kg	1.5	--	1
Naphthalene	ND		ug/kg	6.2	--	1
n-Propylbenzene	ND		ug/kg	1.5	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	6.2	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	6.2	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	6.2	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	6.2	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-10  
 Client ID: D-7 S-13 26'-28'  
 Sample Location: BOSTON, MA

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	7.7	--	1
Diisopropyl Ether	ND		ug/kg	6.2	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	6.2	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	6.2	--	1
1,4-Dioxane	ND		ug/kg	62	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	100		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/26/15 21:32  
Analyst: MS

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG816145-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/26/15 21:32  
Analyst: MS

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG816145-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylene (Total)	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene (total)	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
2-Butanone	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 08/26/15 21:32  
**Analyst:** MS

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG816145-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Ethyl ether	ND		ug/kg	5.0	--
Isopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	98		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG816145-1 WG816145-2								
Methylene chloride	110		102		70-130	8		20
1,1-Dichloroethane	119		110		70-130	8		20
Chloroform	107		100		70-130	7		20
Carbon tetrachloride	111		103		70-130	7		20
1,2-Dichloropropane	118		111		70-130	6		20
Dibromochloromethane	99		94		70-130	5		20
1,1,2-Trichloroethane	104		98		70-130	6		20
Tetrachloroethene	111		104		70-130	7		20
Chlorobenzene	107		101		70-130	6		20
Trichlorofluoromethane	104		97		70-130	7		20
1,2-Dichloroethane	100		94		70-130	6		20
1,1,1-Trichloroethane	108		100		70-130	8		20
Bromodichloromethane	104		98		70-130	6		20
trans-1,3-Dichloropropene	104		98		70-130	6		20
cis-1,3-Dichloropropene	110		103		70-130	7		20
1,1-Dichloropropene	118		110		70-130	7		20
Bromoform	90		83		70-130	8		20
1,1,2,2-Tetrachloroethane	94		89		70-130	5		20
Benzene	114		106		70-130	7		20
Toluene	110		103		70-130	7		20
Ethylbenzene	111		103		70-130	7		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG816145-1 WG816145-2								
Chloromethane	133	Q	122		70-130	9		20
Bromomethane	98		91		70-130	7		20
Vinyl chloride	128		118		70-130	8		20
Chloroethane	122		110		70-130	10		20
1,1-Dichloroethene	114		108		70-130	5		20
trans-1,2-Dichloroethene	111		103		70-130	7		20
Trichloroethene	110		103		70-130	7		20
1,2-Dichlorobenzene	102		94		70-130	8		20
1,3-Dichlorobenzene	107		99		70-130	8		20
1,4-Dichlorobenzene	104		97		70-130	7		20
Methyl tert butyl ether	98		92		70-130	6		20
p/m-Xylene	112		105		70-130	6		20
o-Xylene	109		103		70-130	6		20
cis-1,2-Dichloroethene	111		102		70-130	8		20
Dibromomethane	98		92		70-130	6		20
1,2,3-Trichloropropane	95		88		70-130	8		20
Styrene	109		101		70-130	8		20
Dichlorodifluoromethane	107		99		70-130	8		20
Acetone	117		126		70-130	7		20
Carbon disulfide	112		104		70-130	7		20
Methyl ethyl ketone	99		103		70-130	4		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG816145-1 WG816145-2								
Methyl isobutyl ketone	90		87		70-130	3		20
2-Hexanone	87		82		70-130	6		20
Bromochloromethane	104		99		70-130	5		20
Tetrahydrofuran	111		106		70-130	5		20
2,2-Dichloropropane	114		106		70-130	7		20
1,2-Dibromoethane	96		91		70-130	5		20
1,3-Dichloropropane	104		99		70-130	5		20
1,1,1,2-Tetrachloroethane	105		98		70-130	7		20
Bromobenzene	102		95		70-130	7		20
n-Butylbenzene	116		106		70-130	9		20
sec-Butylbenzene	112		104		70-130	7		20
tert-Butylbenzene	108		100		70-130	8		20
o-Chlorotoluene	105		80		70-130	27	Q	20
p-Chlorotoluene	108		100		70-130	8		20
1,2-Dibromo-3-chloropropane	83		78		70-130	6		20
Hexachlorobutadiene	110		102		70-130	8		20
Isopropylbenzene	108		99		70-130	9		20
p-Isopropyltoluene	110		102		70-130	8		20
Naphthalene	92		86		70-130	7		20
n-Propylbenzene	111		103		70-130	7		20
1,2,3-Trichlorobenzene	103		94		70-130	9		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG816145-1 WG816145-2								
1,2,4-Trichlorobenzene	105		97		70-130	8		20
1,3,5-Trimethylbenzene	109		101		70-130	8		20
1,2,4-Trimethylbenzene	108		99		70-130	9		20
Diethyl ether	104		97		70-130	7		20
Diisopropyl Ether	119		112		70-130	6		20
Ethyl-Tert-Butyl-Ether	108		102		70-130	6		20
Tertiary-Amyl Methyl Ether	103		96		70-130	7		20
1,4-Dioxane	105		100		70-130	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	92		91		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	99		98		70-130
Dibromofluoromethane	97		96		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-01  
 Client ID: D-12 12'-18' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/26/15 17:04  
 Analyst: AS  
 Percent Solids: 78%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/25/15 06:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

**Lab ID:** L1520300-01  
**Client ID:** D-12 12'-18' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/21/15 14:00  
**Date Received:** 08/21/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	420	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	89		30-130
Phenol-d6	95		30-130
Nitrobenzene-d5	96		30-130
2-Fluorobiphenyl	93		30-130
2,4,6-Tribromophenol	113		30-130
4-Terphenyl-d14	95		30-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-03  
 Client ID: D-12 18'-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/26/15 17:32  
 Analyst: AS  
 Percent Solids: 76%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/25/15 06:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	260	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	230	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

**Lab ID:** L1520300-03  
**Client ID:** D-12 18'-24' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/21/15 14:00  
**Date Received:** 08/21/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	130	--	1
Aniline	ND		ug/kg	260	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	260	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	460	--	1
4-Nitrophenol	ND		ug/kg	300	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	430	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	310	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	84		30-130
Phenol-d6	88		30-130
Nitrobenzene-d5	88		30-130
2-Fluorobiphenyl	90		30-130
2,4,6-Tribromophenol	109		30-130
4-Terphenyl-d14	88		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-05  
 Client ID: D-12 28'-42' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/26/15 17:59  
 Analyst: AS  
 Percent Solids: 75%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/25/15 06:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	180	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	220	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	200	--	1
2-Chloronaphthalene	ND		ug/kg	220	--	1
1,2-Dichlorobenzene	ND		ug/kg	220	--	1
1,3-Dichlorobenzene	ND		ug/kg	220	--	1
1,4-Dichlorobenzene	ND		ug/kg	220	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	220	--	1
2,4-Dinitrotoluene	ND		ug/kg	220	--	1
2,6-Dinitrotoluene	ND		ug/kg	220	--	1
Azobenzene	ND		ug/kg	220	--	1
Fluoranthene	ND		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	220	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	260	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	240	--	1
Hexachlorobutadiene	ND		ug/kg	220	--	1
Hexachloroethane	ND		ug/kg	180	--	1
Isophorone	ND		ug/kg	200	--	1
Naphthalene	ND		ug/kg	220	--	1
Nitrobenzene	ND		ug/kg	200	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	220	--	1
Butyl benzyl phthalate	ND		ug/kg	220	--	1
Di-n-butylphthalate	ND		ug/kg	220	--	1
Di-n-octylphthalate	ND		ug/kg	220	--	1
Diethyl phthalate	ND		ug/kg	220	--	1
Dimethyl phthalate	ND		ug/kg	220	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	180	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

**Lab ID:** L1520300-05  
**Client ID:** D-12 28'-42' COMP  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/21/15 14:00  
**Date Received:** 08/21/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	180	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	180	--	1
Fluorene	ND		ug/kg	220	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	180	--	1
Pyrene	ND		ug/kg	130	--	1
Aniline	ND		ug/kg	260	--	1
4-Chloroaniline	ND		ug/kg	220	--	1
Dibenzofuran	ND		ug/kg	220	--	1
2-Methylnaphthalene	ND		ug/kg	260	--	1
Acetophenone	ND		ug/kg	220	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	220	--	1
2,4-Dichlorophenol	ND		ug/kg	200	--	1
2,4-Dimethylphenol	ND		ug/kg	220	--	1
2-Nitrophenol	ND		ug/kg	470	--	1
4-Nitrophenol	ND		ug/kg	310	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	440	--	1
Phenol	ND		ug/kg	220	--	1
2-Methylphenol	ND		ug/kg	220	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	320	--	1
2,4,5-Trichlorophenol	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		30-130
Phenol-d6	80		30-130
Nitrobenzene-d5	80		30-130
2-Fluorobiphenyl	87		30-130
2,4,6-Tribromophenol	113		30-130
4-Terphenyl-d14	96		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-07  
 Client ID: D-4/D-7/D-8/D-12 ORG. COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/26/15 18:26  
 Analyst: AS  
 Percent Solids: 81%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/25/15 06:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

## SAMPLE RESULTS

Lab ID: L1520300-07  
 Client ID: D-4/D-7/D-8/D-12 ORG. COMP  
 Sample Location: BOSTON, MA

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	440	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	980	--	1
Pentachlorophenol	ND		ug/kg	410	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	61		30-130
Phenol-d6	67		30-130
Nitrobenzene-d5	66		30-130
2-Fluorobiphenyl	69		30-130
2,4,6-Tribromophenol	88		30-130
4-Terphenyl-d14	76		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-09  
 Client ID: D-4/D-7/D-8/D-12 SAND COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/26/15 22:49  
 Analyst: AS  
 Percent Solids: 81%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/25/15 06:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

## SAMPLE RESULTS

Lab ID: L1520300-09  
 Client ID: D-4/D-7/D-8/D-12 SAND COMP  
 Sample Location: BOSTON, MA

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	440	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	980	--	1
Pentachlorophenol	ND		ug/kg	410	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	84		30-130
Phenol-d6	87		30-130
Nitrobenzene-d5	89		30-130
2-Fluorobiphenyl	93		30-130
2,4,6-Tribromophenol	108		30-130
4-Terphenyl-d14	94		30-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/25/15 21:14  
**Analyst:** AS

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/25/15 06:05

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815237-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/25/15 21:14  
**Analyst:** AS

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/25/15 06:05

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815237-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 97,8270D  
 Analytical Date: 08/25/15 21:14  
 Analyst: AS

Extraction Method: EPA 3546  
 Extraction Date: 08/25/15 06:05

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815237-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	73		30-130
Phenol-d6	72		30-130
Nitrobenzene-d5	73		30-130
2-Fluorobiphenyl	67		30-130
2,4,6-Tribromophenol	59		30-130
4-Terphenyl-d14	70		30-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815237-2 WG815237-3								
Acenaphthene	65		79		40-140	19		30
1,2,4-Trichlorobenzene	63		66		40-140	5		30
Hexachlorobenzene	67		82		40-140	20		30
Bis(2-chloroethyl)ether	65		66		40-140	2		30
2-Chloronaphthalene	69		81		40-140	16		30
1,2-Dichlorobenzene	62		62		40-140	0		30
1,3-Dichlorobenzene	62		60		40-140	3		30
1,4-Dichlorobenzene	62		60		40-140	3		30
3,3'-Dichlorobenzidine	61		86		40-140	34	Q	30
2,4-Dinitrotoluene	70		87		40-140	22		30
2,6-Dinitrotoluene	70		83		40-140	17		30
Azobenzene	68		84		40-140	21		30
Fluoranthene	68		86		40-140	23		30
4-Bromophenyl phenyl ether	67		83		40-140	21		30
Bis(2-chloroisopropyl)ether	71		72		40-140	1		30
Bis(2-chloroethoxy)methane	70		77		40-140	10		30
Hexachlorobutadiene	64		65		40-140	2		30
Hexachloroethane	65		63		40-140	3		30
Isophorone	70		78		40-140	11		30
Naphthalene	64		69		40-140	8		30
Nitrobenzene	71		75		40-140	5		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815237-2 WG815237-3								
Bis(2-Ethylhexyl)phthalate	69		87		40-140	23		30
Butyl benzyl phthalate	68		87		40-140	25		30
Di-n-butylphthalate	65		83		40-140	24		30
Di-n-octylphthalate	65		82		40-140	23		30
Diethyl phthalate	68		83		40-140	20		30
Dimethyl phthalate	67		83		40-140	21		30
Benzo(a)anthracene	68		85		40-140	22		30
Benzo(a)pyrene	70		88		40-140	23		30
Benzo(b)fluoranthene	64		84		40-140	27		30
Benzo(k)fluoranthene	69		84		40-140	20		30
Chrysene	66		84		40-140	24		30
Acenaphthylene	68		82		40-140	19		30
Anthracene	66		83		40-140	23		30
Benzo(ghi)perylene	66		84		40-140	24		30
Fluorene	66		83		40-140	23		30
Phenanthrene	65		81		40-140	22		30
Dibenzo(a,h)anthracene	65		84		40-140	26		30
Indeno(1,2,3-cd)Pyrene	63		81		40-140	25		30
Pyrene	68		87		40-140	25		30
Aniline	48		58		40-140	19		30
4-Chloroaniline	83		82		40-140	1		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815237-2 WG815237-3								
Dibenzofuran	66		81		40-140	20		30
2-Methylnaphthalene	67		77		40-140	14		30
Acetophenone	72		77		40-140	7		30
2,4,6-Trichlorophenol	73		88		30-130	19		30
2-Chlorophenol	68		73		30-130	7		30
2,4-Dichlorophenol	69		82		30-130	17		30
2,4-Dimethylphenol	69		82		30-130	17		30
2-Nitrophenol	73		79		30-130	8		30
4-Nitrophenol	73		90		30-130	21		30
2,4-Dinitrophenol	50		48		30-130	4		30
Pentachlorophenol	57		74		30-130	26		30
Phenol	69		77		30-130	11		30
2-Methylphenol	70		80		30-130	13		30
3-Methylphenol/4-Methylphenol	73		83		30-130	13		30
2,4,5-Trichlorophenol	70		85		30-130	19		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815237-2 WG815237-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	69		71		30-130
Phenol-d6	72		80		30-130
Nitrobenzene-d5	75		79		30-130
2-Fluorobiphenyl	67		78		30-130
2,4,6-Tribromophenol	65		81		30-130
4-Terphenyl-d14	65		83		30-130

# PETROLEUM HYDROCARBONS



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-01  
 Client ID: D-12 12'-18' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/25/15 11:11  
 Analyst: AR  
 Percent Solids: 78%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/24/15 17:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	42200	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	122		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-03  
Client ID: D-12 18'-24' COMP  
Sample Location: BOSTON, MA  
Matrix: Soil  
Analytical Method: 1,8015C(M)  
Analytical Date: 08/25/15 16:27  
Analyst: AR  
Percent Solids: 76%

Date Collected: 08/21/15 14:00  
Date Received: 08/21/15  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 08/24/15 17:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	43300	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	103		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-05  
 Client ID: D-12 28'-42' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/25/15 19:28  
 Analyst: AR  
 Percent Solids: 75%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/24/15 17:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	41700	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	99		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-07  
 Client ID: D-4/D-7/D-8/D-12 ORG. COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/25/15 18:16  
 Analyst: AR  
 Percent Solids: 81%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/24/15 17:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	40700	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	106		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-09  
 Client ID: D-4/D-7/D-8/D-12 SAND COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/25/15 15:15  
 Analyst: AR  
 Percent Solids: 81%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/24/15 17:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	38800	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	112		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8015C(M)  
Analytical Date: 08/25/15 09:23  
Analyst: AR

Extraction Method: EPA 3546  
Extraction Date: 08/24/15 17:20

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815118-1					
TPH	ND		ug/kg	32000	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	88		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815118-2								
TPH	94		-		40-140	-		40

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>
o-Terphenyl	99				40-140

**Lab Duplicate Analysis**  
**Batch Quality Control**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01,03,05,07,09 QC Batch ID: WG815118-3 QC Sample: L1520300-01 Client ID: D-12 12'-18' COMP						
TPH	ND	ND	ug/kg	NC		40

Surrogate	%Recovery Qualifier	%Recovery Qualifier	Acceptance Criteria
o-Terphenyl	122	97	40-140





# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-01  
 Client ID: D-12 12'-18' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/26/15 05:39  
 Analyst: JW  
 Percent Solids: 78%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/25/15 11:59  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/26/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/26/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	42.2	--	1	A
Aroclor 1221	ND		ug/kg	42.2	--	1	A
Aroclor 1232	ND		ug/kg	42.2	--	1	A
Aroclor 1242	ND		ug/kg	42.2	--	1	A
Aroclor 1248	ND		ug/kg	42.2	--	1	A
Aroclor 1254	ND		ug/kg	42.2	--	1	A
Aroclor 1260	ND		ug/kg	42.2	--	1	A
Aroclor 1262	ND		ug/kg	42.2	--	1	A
Aroclor 1268	ND		ug/kg	42.2	--	1	A
PCBs, Total	ND		ug/kg	42.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	68		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	68		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

**Lab ID:** L1520300-03  
**Client ID:** D-12 18'-24' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil  
**Analytical Method:** 97,8082A  
**Analytical Date:** 08/26/15 05:56  
**Analyst:** JW  
**Percent Solids:** 76%

**Date Collected:** 08/21/15 14:00  
**Date Received:** 08/21/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3546  
**Extraction Date:** 08/25/15 11:59  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 08/26/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 08/26/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	43.6	--	1	A
Aroclor 1221	ND		ug/kg	43.6	--	1	A
Aroclor 1232	ND		ug/kg	43.6	--	1	A
Aroclor 1242	ND		ug/kg	43.6	--	1	A
Aroclor 1248	ND		ug/kg	43.6	--	1	A
Aroclor 1254	ND		ug/kg	43.6	--	1	A
Aroclor 1260	ND		ug/kg	43.6	--	1	A
Aroclor 1262	ND		ug/kg	43.6	--	1	A
Aroclor 1268	ND		ug/kg	43.6	--	1	A
PCBs, Total	ND		ug/kg	43.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	56		30-150	A
Decachlorobiphenyl	58		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	60		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-05  
 Client ID: D-12 28'-42' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/26/15 06:13  
 Analyst: JW  
 Percent Solids: 75%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/25/15 11:59  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/26/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/26/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	43.3	--	1	A
Aroclor 1221	ND		ug/kg	43.3	--	1	A
Aroclor 1232	ND		ug/kg	43.3	--	1	A
Aroclor 1242	ND		ug/kg	43.3	--	1	A
Aroclor 1248	ND		ug/kg	43.3	--	1	A
Aroclor 1254	ND		ug/kg	43.3	--	1	A
Aroclor 1260	ND		ug/kg	43.3	--	1	A
Aroclor 1262	ND		ug/kg	43.3	--	1	A
Aroclor 1268	ND		ug/kg	43.3	--	1	A
PCBs, Total	ND		ug/kg	43.3	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	68		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	69		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-07  
 Client ID: D-4/D-7/D-8/D-12 ORG. COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/26/15 06:29  
 Analyst: JW  
 Percent Solids: 81%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/25/15 11:59  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/26/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/26/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	40.3	--	1	A
Aroclor 1221	ND		ug/kg	40.3	--	1	A
Aroclor 1232	ND		ug/kg	40.3	--	1	A
Aroclor 1242	ND		ug/kg	40.3	--	1	A
Aroclor 1248	ND		ug/kg	40.3	--	1	A
Aroclor 1254	ND		ug/kg	40.3	--	1	A
Aroclor 1260	ND		ug/kg	40.3	--	1	A
Aroclor 1262	ND		ug/kg	40.3	--	1	A
Aroclor 1268	ND		ug/kg	40.3	--	1	A
PCBs, Total	ND		ug/kg	40.3	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	66		30-150	A
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	64		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-09  
 Client ID: D-4/D-7/D-8/D-12 SAND COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/26/15 06:46  
 Analyst: JW  
 Percent Solids: 81%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/25/15 11:59  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/26/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/26/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	41.0	--	1	A
Aroclor 1221	ND		ug/kg	41.0	--	1	A
Aroclor 1232	ND		ug/kg	41.0	--	1	A
Aroclor 1242	ND		ug/kg	41.0	--	1	A
Aroclor 1248	ND		ug/kg	41.0	--	1	A
Aroclor 1254	ND		ug/kg	41.0	--	1	A
Aroclor 1260	ND		ug/kg	41.0	--	1	A
Aroclor 1262	ND		ug/kg	41.0	--	1	A
Aroclor 1268	ND		ug/kg	41.0	--	1	A
PCBs, Total	ND		ug/kg	41.0	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	68		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	66		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8082A  
 Analytical Date: 08/26/15 09:17  
 Analyst: JW

Extraction Method: EPA 3546  
 Extraction Date: 08/25/15 11:59  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/26/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/26/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815383-1						
Aroclor 1016	ND		ug/kg	33.0	--	A
Aroclor 1221	ND		ug/kg	33.0	--	A
Aroclor 1232	ND		ug/kg	33.0	--	A
Aroclor 1242	ND		ug/kg	33.0	--	A
Aroclor 1248	ND		ug/kg	33.0	--	A
Aroclor 1254	ND		ug/kg	33.0	--	A
Aroclor 1260	ND		ug/kg	33.0	--	A
Aroclor 1262	ND		ug/kg	33.0	--	A
Aroclor 1268	ND		ug/kg	33.0	--	A
PCBs, Total	ND		ug/kg	33.0	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	89		30-150	A
2,4,5,6-Tetrachloro-m-xylene	89		30-150	B
Decachlorobiphenyl	90		30-150	B



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815383-2 WG815383-3									
Aroclor 1016	60		72		40-140	18		30	A
Aroclor 1260	69		83		40-140	18		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		71		30-150	A
Decachlorobiphenyl	68		83		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		78		30-150	B
Decachlorobiphenyl	67		81		30-150	B



## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-01  
 Client ID: D-12 12'-18' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 78%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	5.5		mg/kg	0.50	--	1	08/22/15 07:35	08/24/15 11:42	EPA 3050B	97,6010C	JH
Barium, Total	34		mg/kg	0.50	--	1	08/22/15 07:35	08/24/15 11:42	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.50	--	1	08/22/15 07:35	08/24/15 11:42	EPA 3050B	97,6010C	JH
Chromium, Total	19		mg/kg	0.50	--	1	08/22/15 07:35	08/24/15 11:42	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.5	--	1	08/22/15 07:35	08/24/15 11:42	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.084	--	1	08/22/15 08:35	08/24/15 16:17	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.5	--	1	08/22/15 07:35	08/24/15 11:42	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.50	--	1	08/22/15 07:35	08/24/15 11:42	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-03  
 Client ID: D-12 18'-24' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 76%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.3		mg/kg	0.52	--	1	08/22/15 07:35	08/24/15 11:47	EPA 3050B	97,6010C	JH
Barium, Total	18		mg/kg	0.52	--	1	08/22/15 07:35	08/24/15 11:47	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.52	--	1	08/22/15 07:35	08/24/15 11:47	EPA 3050B	97,6010C	JH
Chromium, Total	13		mg/kg	0.52	--	1	08/22/15 07:35	08/24/15 11:47	EPA 3050B	97,6010C	JH
Lead, Total	7.3		mg/kg	2.6	--	1	08/22/15 07:35	08/24/15 11:47	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.089	--	1	08/22/15 08:35	08/24/15 16:19	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.6	--	1	08/22/15 07:35	08/24/15 11:47	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.52	--	1	08/22/15 07:35	08/24/15 11:47	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-05  
 Client ID: D-12 28'-42' COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 75%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	4.3		mg/kg	0.53	--	1	08/22/15 07:35	08/24/15 11:51	EPA 3050B	97,6010C	JH
Barium, Total	50		mg/kg	0.53	--	1	08/22/15 07:35	08/24/15 11:51	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.53	--	1	08/22/15 07:35	08/24/15 11:51	EPA 3050B	97,6010C	JH
Chromium, Total	27		mg/kg	0.53	--	1	08/22/15 07:35	08/24/15 11:51	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.6	--	1	08/22/15 07:35	08/24/15 11:51	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.090	--	1	08/22/15 08:35	08/24/15 16:20	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.6	--	1	08/22/15 07:35	08/24/15 11:51	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.53	--	1	08/22/15 07:35	08/24/15 11:51	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-07  
 Client ID: D-4/D-7/D-8/D-12 ORG. COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 81%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	3.6		mg/kg	0.48	--	1	08/22/15 07:35	08/24/15 11:55	EPA 3050B	97,6010C	JH
Barium, Total	12		mg/kg	0.48	--	1	08/22/15 07:35	08/24/15 11:55	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.48	--	1	08/22/15 07:35	08/24/15 11:55	EPA 3050B	97,6010C	JH
Chromium, Total	12		mg/kg	0.48	--	1	08/22/15 07:35	08/24/15 11:55	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.4	--	1	08/22/15 07:35	08/24/15 11:55	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.078	--	1	08/22/15 08:35	08/24/15 16:25	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.4	--	1	08/22/15 07:35	08/24/15 11:55	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.48	--	1	08/22/15 07:35	08/24/15 11:55	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-09  
 Client ID: D-4/D-7/D-8/D-12 SAND COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 81%

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	3.0		mg/kg	0.48	--	1	08/22/15 07:35	08/24/15 11:59	EPA 3050B	97,6010C	JH
Barium, Total	17		mg/kg	0.48	--	1	08/22/15 07:35	08/24/15 11:59	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.48	--	1	08/22/15 07:35	08/24/15 11:59	EPA 3050B	97,6010C	JH
Chromium, Total	12		mg/kg	0.48	--	1	08/22/15 07:35	08/24/15 11:59	EPA 3050B	97,6010C	JH
Lead, Total	ND		mg/kg	2.4	--	1	08/22/15 07:35	08/24/15 11:59	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.080	--	1	08/22/15 08:35	08/24/15 16:27	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.4	--	1	08/22/15 07:35	08/24/15 11:59	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.48	--	1	08/22/15 07:35	08/24/15 11:59	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG814560-1									
Mercury, Total	ND	mg/kg	0.083	--	1	08/22/15 08:35	08/24/15 13:32	97,7471B	DB

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG814598-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	08/22/15 07:35	08/24/15 10:38	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	08/22/15 07:35	08/24/15 10:38	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	08/22/15 07:35	08/24/15 10:38	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	08/22/15 07:35	08/24/15 10:38	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	08/22/15 07:35	08/24/15 10:38	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	08/22/15 07:35	08/24/15 10:38	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	08/22/15 07:35	08/24/15 10:38	97,6010C	JH

### Prep Information

Digestion Method: EPA 3050B

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814560-2 WG814560-3 SRM Lot Number: D088-540								
Mercury, Total	90		90		72-128	0		30
MCP Total Metals - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814598-2 WG814598-3 SRM Lot Number: D088-540								
Arsenic, Total	96		96		79-121	0		30
Barium, Total	94		88		83-117	7		30
Cadmium, Total	89		89		83-117	0		30
Chromium, Total	90		88		80-120	2		30
Lead, Total	83		82		81-117	1		30
Selenium, Total	97		97		78-122	0		30
Silver, Total	98		96		75-124	2		30



# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

### SAMPLE RESULTS

**Lab ID:** L1520300-01  
**Client ID:** D-12 12'-18' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/21/15 14:00  
**Date Received:** 08/21/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/25/15 14:37	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

### SAMPLE RESULTS

**Lab ID:** L1520300-03  
**Client ID:** D-12 18'-24' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/21/15 14:00  
**Date Received:** 08/21/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/25/15 14:37	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

### SAMPLE RESULTS

**Lab ID:** L1520300-05  
**Client ID:** D-12 28'-42' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/21/15 14:00  
**Date Received:** 08/21/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Fine  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/25/15 14:37	1,1030	AB



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1520300

Report Date: 08/27/15

**SAMPLE RESULTS**

Lab ID: L1520300-07  
 Client ID: D-4/D-7/D-8/D-12 ORG. COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

**Test Material Information**

Source of Material: Unknown  
 Description of Material: Non-Metallic - Damp Clay  
 Particle Size: Fine  
 Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/25/15 14:37	1,1030	AB



**Project Name:** FAN PIER PARCEL D**Project Number:** 4426.9.1D**Lab Number:** L1520300**Report Date:** 08/27/15**SAMPLE RESULTS**

Lab ID: L1520300-09  
 Client ID: D-4/D-7/D-8/D-12 SAND COMP  
 Sample Location: BOSTON, MA  
 Matrix: Soil

Date Collected: 08/21/15 14:00  
 Date Received: 08/21/15  
 Field Prep: Not Specified

**Test Material Information**

Source of Material: Unknown  
 Description of Material: Non-Metallic - Wet Clay  
 Particle Size: Fine  
 Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/25/15 14:37	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

**Lab ID:** L1520300-01  
**Client ID:** D-12 12'-18' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/21/15 14:00  
**Date Received:** 08/21/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	160		umhos/cm	10	--	1	-	08/21/15 22:13	1,9050A	AS
Solids, Total	78.3		%	0.100	NA	1	-	08/25/15 20:56	30,2540G	RT
pH (H)	8.8		SU	-	NA	1	-	08/21/15 21:02	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/25/15 20:35	08/25/15 22:53	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/25/15 20:35	08/25/15 22:44	1,7.3	TL



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1520300

Report Date: 08/27/15

## SAMPLE RESULTS

Lab ID: L1520300-02

Client ID: D-12 S-6 12'-14'

Sample Location: BOSTON, MA

Matrix: Soil

Date Collected: 08/21/15 14:00

Date Received: 08/21/15

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	78.3		%	0.100	NA	1	-	08/25/15 20:56	30,2540G	RT





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

**Lab ID:** L1520300-03  
**Client ID:** D-12 18'-24' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/21/15 14:00  
**Date Received:** 08/21/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	250		umhos/cm	10	--	1	-	08/21/15 22:13	1,9050A	AS
Solids, Total	75.8		%	0.100	NA	1	-	08/25/15 20:56	30,2540G	RT
pH (H)	8.6		SU	-	NA	1	-	08/21/15 21:02	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/25/15 20:35	08/25/15 22:54	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/25/15 20:35	08/25/15 22:45	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

## SAMPLE RESULTS

Lab ID: L1520300-04

Date Collected: 08/21/15 14:00

Client ID: D-12 S-10 20'-22'

Date Received: 08/21/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.8		%	0.100	NA	1	-	08/25/15 20:56	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

**Lab ID:** L1520300-05  
**Client ID:** D-12 28'-42' COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/21/15 14:00  
**Date Received:** 08/21/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	510		umhos/cm	10	--	1	-	08/21/15 22:13	1,9050A	AS
Solids, Total	75.1		%	0.100	NA	1	-	08/25/15 20:56	30,2540G	RT
pH (H)	8.3		SU	-	NA	1	-	08/21/15 21:02	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/25/15 20:35	08/25/15 22:54	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/25/15 20:35	08/25/15 22:45	1,7.3	TL



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1520300

Report Date: 08/27/15

## SAMPLE RESULTS

Lab ID: L1520300-06

Client ID: D-12 S-15 35'-37'

Sample Location: BOSTON, MA

Matrix: Soil

Date Collected: 08/21/15 14:00

Date Received: 08/21/15

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	75.1		%	0.100	NA	1	-	08/25/15 20:56	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

**Lab ID:** L1520300-07  
**Client ID:** D-4/D-7/D-8/D-12 ORG. COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/21/15 14:00  
**Date Received:** 08/21/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	370		umhos/cm	10	--	1	-	08/21/15 22:13	1,9050A	AS
Solids, Total	80.9		%	0.100	NA	1	-	08/25/15 20:56	30,2540G	RT
pH (H)	8.4		SU	-	NA	1	-	08/21/15 21:02	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/25/15 20:35	08/25/15 22:54	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/25/15 20:35	08/25/15 22:45	1,7.3	TL



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1520300

Report Date: 08/27/15

## SAMPLE RESULTS

Lab ID: L1520300-08

Client ID: D-12 S-12 24'-26'

Sample Location: BOSTON, MA

Matrix: Soil

Date Collected: 08/21/15 14:00

Date Received: 08/21/15

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	80.9		%	0.100	NA	1	-	08/25/15 20:56	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**SAMPLE RESULTS**

**Lab ID:** L1520300-09  
**Client ID:** D-4/D-7/D-8/D-12 SAND COMP  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/21/15 14:00  
**Date Received:** 08/21/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	490		umhos/cm	10	--	1	-	08/21/15 22:13	1,9050A	AS
Solids, Total	80.8		%	0.100	NA	1	-	08/25/15 20:56	30,2540G	RT
pH (H)	8.3		SU	-	NA	1	-	08/21/15 21:02	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/25/15 20:35	08/25/15 22:54	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/25/15 20:35	08/25/15 22:45	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

## SAMPLE RESULTS

Lab ID: L1520300-10

Date Collected: 08/21/15 14:00

Client ID: D-7 S-13 26'-28'

Date Received: 08/21/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.8		%	0.100	NA	1	-	08/25/15 20:56	30,2540G	RT





Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815538-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	08/25/15 20:35	08/25/15 22:50	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG815539-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	08/25/15 20:35	08/25/15 22:41	1,7.3	TL

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814508-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG814509-1								
Specific Conductance	99		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815538-2								
Cyanide, Reactive	35		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815539-2								
Sulfide, Reactive	85		-		60-125	-		40

## Lab Duplicate Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1520300

Report Date: 08/27/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG815570-1 QC Sample: L1520300-01 Client ID: D-12 12'-18' COMP						
Solids, Total	78.3	78.3	%	0		20

Project Name: FAN PIER PARCEL D

Lab Number: L1520300

Project Number: 4426.9.1D

Report Date: 08/27/15

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 08/21/2015 18:45

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1520300-01A	Glass 500ml/16oz unpreserved	A	N/A	2.9	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520300-02A	Vial MeOH preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1520300-02B	Vial water preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1520300-02C	Vial water preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1520300-03A	Glass 500ml/16oz unpreserved	A	N/A	2.9	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520300-04A	Vial MeOH preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1520300-04B	Vial water preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1520300-04C	Vial water preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1520300-05A	Glass 500ml/16oz unpreserved	A	N/A	2.9	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520300-06A	Vial MeOH preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1520300-06B	Vial water preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1520300-06C	Vial water preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1520300-07A	Glass 500ml/16oz unpreserved	A	N/A	2.9	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520300-08A	Vial MeOH preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1520300-08B	Vial water preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1520300-08C	Vial water preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1520300-09A	Glass 500ml/16oz unpreserved	A	N/A	2.9	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520300-10A	Vial MeOH preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1520300-10B	Vial water preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)
L1520300-10C	Vial water preserved	A	N/A	2.9	Y	Absent	MCP-8260HLW-10(14)

**Container Comments**

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D**Project Number:** 4426.9.1D**Lab Number:** L1520300**Report Date:** 08/27/15**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
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**Container Comments**

L1520300-02B

L1520300-04B

L1520300-06B

L1520300-08B

L1520300-10B

\*Values in parentheses indicate holding time in days

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

## 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

#### **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.



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520300  
**Report Date:** 08/27/15

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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, NO<sub>2</sub>, NO<sub>3</sub>.

**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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



7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1520300

Instrument ID: Voal00.i      Calibration Date: 26-AUG-2015      Time: 20:13

Lab File ID: 0826N02      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
=====	=====	=====	=====	=====	=====	
dichlorodifluoromethane	.187	.19938	.1	7	20	
chloromethane	.20766	.27579	.1	33	20	F
vinyl chloride	.21396	.27382	.1	28	20	F
bromomethane	.13517	.13278	.1	-2	20	
chloroethane	.12913	.15708	.1	22	20	F
trichlorofluoromethane	.24868	.25904	.1	4	20	
ethyl ether	.12265	.127	.05	4	20	
1,1,-dichloroethene	.15676	.17946	.1	14	20	
carbon disulfide	.60511	.6757	.1	12	20	
methylene chloride	.20702	.22708	.1	10	20	
acetone	100	117	.1	17	20	
trans-1,2-dichloroethene	.18303	.20278	.1	11	20	
methyl tert butyl ether	.59541	.58529	.1	-2	20	
Diisopropyl Ether	.66228	.78984	.05	19	20	
1,1-dichloroethane	.37295	.4429	.2	19	20	
Ethyl-Tert-Butyl-Ether	.67262	.73014	.05	9	20	
cis-1,2-dichloroethene	.20399	.22565	.1	11	20	
2,2-dichloropropane	.27701	.31664	.05	14	20	
bromochloromethane	.09003	.09356	.05	4	20	
chloroform	.35545	.3805	.2	7	20	
carbontetrachloride	.23543	.26206	.1	11	20	
tetrahydrofuran	.07866	.08753	.05	11	20	
1,1,1-trichloroethane	.28145	.30428	.1	8	20	
2-butanone	.11217	.11064	.1	-1	20	
1,1-dichloropropene	.24964	.2952	.05	18	20	
benzene	.78204	.89339	.5	14	20	
Tertiary-Amyl Methyl Ether	.58171	.59978	.05	3	20	
1,2-dichloroethane	.29909	.29966	.1	0	20	
trichloroethene	.19209	.21074	.2	10	20	F
dibromomethane	.12744	.12432	.05	-2	20	
1,2-dichloropropane	.20856	.24697	.1	18	20	
bromodichloromethane	.27983	.29233	.2	4	20	
1,4-dioxane	.00226	.00238	.05	5	20	F
cis-1,3-dichloropropene	.32828	.36168	.2	10	20	
toluene	.70265	.77533	.4	10	20	
4-methyl-2-pentanone	.09341	.08417	.1	-10	20	F
tetrachloroethene	.24354	.26985	.2	11	20	
trans-1,3-dichloropropene	.44951	.46561	.1	4	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1520300

Instrument ID: Voal00.i      Calibration Date: 26-AUG-2015      Time: 20:13

Lab File ID: 0826N02      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.22462	.23292	.1	4	20
chlorodibromomethane	.27986	.27814	.1	-1	20
1,3-dichloropropane	.4689	.48749	.05	4	20
1,2-dibromoethane	.25199	.24201	.1	-4	20
2-hexanone	.25182	.21882	.1	-13	20
chlorobenzene	.72245	.77323	.5	7	20
ethyl benzene	1.321	1.4621	.1	11	20
1,1,1,2-tetrachloroethane	.25141	.26312	.05	5	20
p/m xylene	.4784	.53748	.1	12	20
o xylene	.4574	.50023	.3	9	20
styrene	.80709	.8772	.3	9	20
bromoform	.39095	.35348	.1	-10	20
isopropylbenzene	2.5014	2.6927	.1	8	20
bromobenzene	.58801	.60169	.05	2	20
n-propylbenzene	3.1176	3.4559	.05	11	20
1,1,2,2,-tetrachloroethane	.79665	.74863	.3	-6	20
2-chlorotoluene	1.9997	2.0917	.05	5	20
1,3,5-trimethylbenzene	2.1494	2.3375	.05	9	20
1,2,3-trichloropropane	.6668	.63179	.05	-5	20
4-chlorotoluene	1.9179	2.0810	.05	9	20
tert-butylbenzene	1.6411	1.7657	.05	8	20
1,2,4-trimethylbenzene	2.1380	2.3197	.05	8	20
sec-butylbenzene	2.7032	3.0402	.05	12	20
p-isopropyltoluene	2.1196	2.3272	.05	10	20
1,3-dichlorobenzene	1.1313	1.2085	.6	7	20
1,4-dichlorobenzene	1.1563	1.2053	.5	4	20
n-butylbenzene	2.2066	2.5490	.05	16	20
1,2-dichlorobenzene	1.0944	1.1170	.4	2	20
1,2-dibromo-3-chloropropane	.11922	.09913	.05	-17	20
hexachlorobutadiene	.33792	.37333	.05	10	20
1,2,4-trichlorobenzene	.69367	.73149	.2	5	20
naphthalene	2.0354	1.8689	.05	-8	20
1,2,3-trichlorobenzene	.65938	.68051	.05	3	20
dibromofluoromethane	.24097	.23411	.05	-3	30
1,2-dichloroethane-d4	.30902	.28335	.05	-8	30
toluene-d8	1.3369	1.3534	.05	1	30
4-bromofluorobenzene	1.0311	1.0183	.05	-1	30

FORM VII MCP-8260HLW-10



## ANALYTICAL REPORT

Lab Number:	L1520730
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	09/01/15

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).

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



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
<del>L1520730-01</del>	<del>D-2 0' 6' COMP.</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/26/15 14:00</del>	<del>08/26/15</del>
<del>L1520730-02</del>	<del>D-2 S-3 4' 6'</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/26/15 14:00</del>	<del>08/26/15</del>
L1520730-03	D-2 6'-12' COMP.	SOIL	BOSTON, MA	08/26/15 14:00	08/26/15
L1520730-04	D-2 S-5 8'-10'	SOIL	BOSTON, MA	08/26/15 14:00	08/26/15
<del>L1520730-05</del>	<del>D-2 12' 18' COMP.</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/26/15 14:00</del>	<del>08/26/15</del>
<del>L1520730-06</del>	<del>D-2 S-9 16' 18'</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/26/15 14:00</del>	<del>08/26/15</del>
<del>L1520730-07</del>	<del>D-2 18' 22' COMP.</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/26/15 14:00</del>	<del>08/26/15</del>
L1520730-08	D-2 S-11 20'-22'	SOIL	BOSTON, MA	08/26/15 14:00	08/26/15
<del>L1520730-09</del>	<del>D-2 30' 42' COMP.</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/26/15 14:00</del>	<del>08/26/15</del>
<del>L1520730-10</del>	<del>D-2 S-16 30' 32'</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>08/26/15 14:00</del>	<del>08/26/15</del>

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

### MADEP MCP Response Action Analytical Report Certification

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

### 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

The samples submitted for Volatile Organics were received without raw soil for the Total Solids analysis. The Total Solids results from the corresponding composite samples were utilized in the dry weight calculation of the Volatile Organics data.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1520730-02,-04,-06,-08, and -10, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.00162) and 4-methyl-2-pentanone (0.07493) as well as the average response factor for trichloroethene, 1,4-dioxane and 4-methyl-2-pentanone. The initial calibration verification is outside acceptance criteria for tetrahydrofuran (65%), but within overall method criteria.

The continuing calibration standard, associated with L1520730-02,-04,-06,-08, and -10, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

##### Semivolatile Organics

L1520730-01: The sample has elevated detection limits due to the dilution required by the sample matrix.

In reference to question H:

L1520730-01: The surrogate recoveries were outside the acceptance criteria for 2-fluorophenol (21%) and 2,4,6-tribromophenol (9%); however, re-extraction achieved similar results: 2-fluorophenol (22%) and 2,4,6-tribromophenol (20%). The results of both extractions are reported; however, all associated compounds are considered to have a potential bias.

##### Metals

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

### Case Narrative (continued)

L1520730-09: The sample has elevated detection lead, due to the dilution required by matrix interferences encountered during analysis.

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

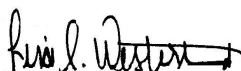
#### Non-MCP Related Narratives

##### Petroleum Hydrocarbon Quantitation

WG816702: A Laboratory Duplicate was prepared with the sample batch, however, the native sample was not available for reporting; therefore, the laboratory duplicate results could not be 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:



Lisa Westerlind

Title: Technical Director/Representative

Date: 09/01/15

# ORGANICS

# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**SAMPLE RESULTS**

Lab ID: L1520730-04  
 Client ID: D-2 S-5 8'-10'  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 08/30/15 16:27  
 Analyst: BN  
 Percent Solids: 84%

Date Collected: 08/26/15 14:00  
 Date Received: 08/26/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	8.7	--	1
1,1-Dichloroethane	ND		ug/kg	1.3	--	1
Chloroform	ND		ug/kg	1.3	--	1
Carbon tetrachloride	ND		ug/kg	0.87	--	1
1,2-Dichloropropane	ND		ug/kg	3.0	--	1
Dibromochloromethane	ND		ug/kg	0.87	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.3	--	1
Tetrachloroethene	ND		ug/kg	0.87	--	1
Chlorobenzene	ND		ug/kg	0.87	--	1
Trichlorofluoromethane	ND		ug/kg	3.5	--	1
1,2-Dichloroethane	ND		ug/kg	0.87	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.87	--	1
Bromodichloromethane	ND		ug/kg	0.87	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.87	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.87	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.87	--	1
1,1-Dichloropropene	ND		ug/kg	3.5	--	1
Bromoform	ND		ug/kg	3.5	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.87	--	1
Benzene	ND		ug/kg	0.87	--	1
Toluene	ND		ug/kg	1.3	--	1
Ethylbenzene	ND		ug/kg	0.87	--	1
Chloromethane	ND		ug/kg	3.5	--	1
Bromomethane	ND		ug/kg	1.7	--	1
Vinyl chloride	ND		ug/kg	1.7	--	1
Chloroethane	ND		ug/kg	1.7	--	1
1,1-Dichloroethene	ND		ug/kg	0.87	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.3	--	1
Trichloroethene	ND		ug/kg	0.87	--	1
1,2-Dichlorobenzene	ND		ug/kg	3.5	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

## SAMPLE RESULTS

Lab ID: L1520730-04

Date Collected: 08/26/15 14:00

Client ID: D-2 S-5 8'-10'

Date Received: 08/26/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	3.5	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.5	--	1
Methyl tert butyl ether	ND		ug/kg	1.7	--	1
p/m-Xylene	ND		ug/kg	1.7	--	1
o-Xylene	ND		ug/kg	1.7	--	1
Xylenes, Total	ND		ug/kg	1.7	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.87	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.87	--	1
Dibromomethane	ND		ug/kg	3.5	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.5	--	1
Styrene	ND		ug/kg	1.7	--	1
Dichlorodifluoromethane	ND		ug/kg	8.7	--	1
Acetone	ND		ug/kg	31	--	1
Carbon disulfide	ND		ug/kg	3.5	--	1
Methyl ethyl ketone	ND		ug/kg	8.7	--	1
Methyl isobutyl ketone	ND		ug/kg	8.7	--	1
2-Hexanone	ND		ug/kg	8.7	--	1
Bromochloromethane	ND		ug/kg	3.5	--	1
Tetrahydrofuran	ND		ug/kg	3.5	--	1
2,2-Dichloropropane	ND		ug/kg	4.4	--	1
1,2-Dibromoethane	ND		ug/kg	3.5	--	1
1,3-Dichloropropane	ND		ug/kg	3.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.87	--	1
Bromobenzene	ND		ug/kg	4.4	--	1
n-Butylbenzene	ND		ug/kg	0.87	--	1
sec-Butylbenzene	ND		ug/kg	0.87	--	1
tert-Butylbenzene	ND		ug/kg	3.5	--	1
o-Chlorotoluene	ND		ug/kg	3.5	--	1
p-Chlorotoluene	ND		ug/kg	3.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.5	--	1
Hexachlorobutadiene	ND		ug/kg	3.5	--	1
Isopropylbenzene	ND		ug/kg	0.87	--	1
p-Isopropyltoluene	ND		ug/kg	0.87	--	1
Naphthalene	ND		ug/kg	3.5	--	1
n-Propylbenzene	ND		ug/kg	0.87	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.5	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.5	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.5	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.5	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**SAMPLE RESULTS**

**Lab ID:** L1520730-04  
**Client ID:** D-2 S-5 8'-10'  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/26/15 14:00  
**Date Received:** 08/26/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	4.4	--	1
Diisopropyl Ether	ND		ug/kg	3.5	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.5	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.5	--	1
1,4-Dioxane	ND		ug/kg	35	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	101		70-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 08/30/15 11:01  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG817037-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 08/30/15 11:01  
**Analyst:** BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG817037-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 08/30/15 11:01  
**Analyst:** BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG817037-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	90		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	97		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG817037-1 WG817037-2								
Methylene chloride	98		99		70-130	1		20
1,1-Dichloroethane	111		107		70-130	4		20
Chloroform	100		97		70-130	3		20
Carbon tetrachloride	102		96		70-130	6		20
1,2-Dichloropropane	110		108		70-130	2		20
Dibromochloromethane	90		89		70-130	1		20
1,1,2-Trichloroethane	92		92		70-130	0		20
Tetrachloroethene	104		99		70-130	5		20
Chlorobenzene	100		98		70-130	2		20
Trichlorofluoromethane	94		88		70-130	7		20
1,2-Dichloroethane	92		92		70-130	0		20
1,1,1-Trichloroethane	102		96		70-130	6		20
Bromodichloromethane	97		96		70-130	1		20
trans-1,3-Dichloropropene	95		95		70-130	0		20
cis-1,3-Dichloropropene	103		102		70-130	1		20
1,1-Dichloropropene	110		104		70-130	6		20
Bromoform	80		80		70-130	0		20
1,1,2,2-Tetrachloroethane	82		83		70-130	1		20
Benzene	107		103		70-130	4		20
Toluene	103		99		70-130	4		20
Ethylbenzene	103		98		70-130	5		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG817037-1 WG817037-2								
Chloromethane	124		118		70-130	5		20
Bromomethane	90		87		70-130	3		20
Vinyl chloride	112		107		70-130	5		20
Chloroethane	108		104		70-130	4		20
1,1-Dichloroethene	104		100		70-130	4		20
trans-1,2-Dichloroethene	103		101		70-130	2		20
Trichloroethene	104		99		70-130	5		20
1,2-Dichlorobenzene	92		90		70-130	2		20
1,3-Dichlorobenzene	97		96		70-130	1		20
1,4-Dichlorobenzene	96		94		70-130	2		20
Methyl tert butyl ether	89		91		70-130	2		20
p/m-Xylene	104		100		70-130	4		20
o-Xylene	102		98		70-130	4		20
cis-1,2-Dichloroethene	103		100		70-130	3		20
Dibromomethane	90		92		70-130	2		20
1,2,3-Trichloropropane	81		83		70-130	2		20
Styrene	100		98		70-130	2		20
Dichlorodifluoromethane	91		86		70-130	6		20
Acetone	118		127		70-130	7		20
Carbon disulfide	107		101		70-130	6		20
Methyl ethyl ketone	89		89		70-130	0		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG817037-1 WG817037-2								
Methyl isobutyl ketone	80		84		70-130	5		20
2-Hexanone	76		78		70-130	3		20
Bromochloromethane	98		96		70-130	2		20
Tetrahydrofuran	78		84		70-130	7		20
2,2-Dichloropropane	109		103		70-130	6		20
1,2-Dibromoethane	86		88		70-130	2		20
1,3-Dichloropropane	93		94		70-130	1		20
1,1,1,2-Tetrachloroethane	97		94		70-130	3		20
Bromobenzene	94		91		70-130	3		20
n-Butylbenzene	107		100		70-130	7		20
sec-Butylbenzene	103		97		70-130	6		20
tert-Butylbenzene	99		94		70-130	5		20
o-Chlorotoluene	96		93		70-130	3		20
p-Chlorotoluene	100		96		70-130	4		20
1,2-Dibromo-3-chloropropane	70		72		70-130	3		20
Hexachlorobutadiene	100		97		70-130	3		20
Isopropylbenzene	99		94		70-130	5		20
p-Isopropyltoluene	102		97		70-130	5		20
Naphthalene	79		82		70-130	4		20
n-Propylbenzene	102		97		70-130	5		20
1,2,3-Trichlorobenzene	92		94		70-130	2		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG817037-1 WG817037-2								
1,2,4-Trichlorobenzene	96		96		70-130	0		20
1,3,5-Trimethylbenzene	100		95		70-130	5		20
1,2,4-Trimethylbenzene	100		96		70-130	4		20
Diethyl ether	92		96		70-130	4		20
Diisopropyl Ether	110		110		70-130	0		20
Ethyl-Tert-Butyl-Ether	100		100		70-130	0		20
Tertiary-Amyl Methyl Ether	95		95		70-130	0		20
1,4-Dioxane	90		100		70-130	11		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89		90		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	98		98		70-130
Dibromofluoromethane	97		97		70-130

# SEMIVOLATILES



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**SAMPLE RESULTS**

Lab ID: L1520730-03  
 Client ID: D-2 6'-12' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 08/31/15 13:35  
 Analyst: MY  
 Percent Solids: 84%

Date Collected: 08/26/15 14:00  
 Date Received: 08/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/28/15 16:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	150	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	--	1
2-Chloronaphthalene	ND		ug/kg	190	--	1
1,2-Dichlorobenzene	ND		ug/kg	190	--	1
1,3-Dichlorobenzene	ND		ug/kg	190	--	1
1,4-Dichlorobenzene	ND		ug/kg	190	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	--	1
2,4-Dinitrotoluene	ND		ug/kg	190	--	1
2,6-Dinitrotoluene	ND		ug/kg	190	--	1
Azobenzene	ND		ug/kg	190	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	210	--	1
Hexachlorobutadiene	ND		ug/kg	190	--	1
Hexachloroethane	ND		ug/kg	150	--	1
Isophorone	ND		ug/kg	170	--	1
Naphthalene	ND		ug/kg	190	--	1
Nitrobenzene	ND		ug/kg	170	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	190	--	1
Butyl benzyl phthalate	ND		ug/kg	190	--	1
Di-n-butylphthalate	ND		ug/kg	190	--	1
Di-n-octylphthalate	ND		ug/kg	190	--	1
Diethyl phthalate	ND		ug/kg	190	--	1
Dimethyl phthalate	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**SAMPLE RESULTS**

**Lab ID:** L1520730-03  
**Client ID:** D-2 6'-12' COMP.  
**Sample Location:** BOSTON, MA

**Date Collected:** 08/26/15 14:00  
**Date Received:** 08/26/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	230	--	1
4-Chloroaniline	ND		ug/kg	190	--	1
Dibenzofuran	ND		ug/kg	190	--	1
2-Methylnaphthalene	ND		ug/kg	230	--	1
Acetophenone	ND		ug/kg	190	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	190	--	1
2,4-Dichlorophenol	ND		ug/kg	170	--	1
2,4-Dimethylphenol	ND		ug/kg	190	--	1
2-Nitrophenol	ND		ug/kg	410	--	1
4-Nitrophenol	ND		ug/kg	270	--	1
2,4-Dinitrophenol	ND		ug/kg	920	--	1
Pentachlorophenol	ND		ug/kg	380	--	1
Phenol	ND		ug/kg	190	--	1
2-Methylphenol	ND		ug/kg	190	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	--	1
2,4,5-Trichlorophenol	ND		ug/kg	190	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	103		30-130
Phenol-d6	105		30-130
Nitrobenzene-d5	101		30-130
2-Fluorobiphenyl	94		30-130
2,4,6-Tribromophenol	94		30-130
4-Terphenyl-d14	98		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/31/15 11:29  
**Analyst:** MY

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/28/15 16:59

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG816689-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	99	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	99	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 08/31/15 11:29  
**Analyst:** MY

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/28/15 16:59

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG816689-1					
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	99	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	99	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	360	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	790	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 08/31/15 11:29  
Analyst: MY

Extraction Method: EPA 3546  
Extraction Date: 08/28/15 16:59

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG816689-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	87		30-130
Phenol-d6	96		30-130
Nitrobenzene-d5	90		30-130
2-Fluorobiphenyl	92		30-130
2,4,6-Tribromophenol	94		30-130
4-Terphenyl-d14	103		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 09/01/15 09:56  
**Analyst:** JB

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/31/15 20:58

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG817285-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	100	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	100	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	100	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 09/01/15 09:56  
**Analyst:** JB

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/31/15 20:58

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG817285-1					
Benzo(b)fluoranthene	ND		ug/kg	100	--
Benzo(k)fluoranthene	ND		ug/kg	100	--
Chrysene	ND		ug/kg	100	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	100	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	100	--
Dibenzo(a,h)anthracene	ND		ug/kg	100	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	100	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	100	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	360	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	800	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 09/01/15 09:56  
Analyst: JB

Extraction Method: EPA 3546  
Extraction Date: 08/31/15 20:58

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG817285-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	88		30-130
Phenol-d6	93		30-130
Nitrobenzene-d5	89		30-130
2-Fluorobiphenyl	84		30-130
2,4,6-Tribromophenol	90		30-130
4-Terphenyl-d14	97		30-130



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG816689-2 WG816689-3								
Acenaphthene	83		90		40-140	8		30
1,2,4-Trichlorobenzene	83		83		40-140	0		30
Hexachlorobenzene	85		93		40-140	9		30
Bis(2-chloroethyl)ether	82		80		40-140	2		30
2-Chloronaphthalene	88		94		40-140	7		30
1,2-Dichlorobenzene	82		78		40-140	5		30
1,3-Dichlorobenzene	82		76		40-140	8		30
1,4-Dichlorobenzene	82		78		40-140	5		30
3,3'-Dichlorobenzidine	72		79		40-140	9		30
2,4-Dinitrotoluene	93		103		40-140	10		30
2,6-Dinitrotoluene	96		104		40-140	8		30
Azobenzene	93		95		40-140	2		30
Fluoranthene	92		97		40-140	5		30
4-Bromophenyl phenyl ether	87		95		40-140	9		30
Bis(2-chloroisopropyl)ether	87		85		40-140	2		30
Bis(2-chloroethoxy)methane	88		90		40-140	2		30
Hexachlorobutadiene	85		84		40-140	1		30
Hexachloroethane	84		79		40-140	6		30
Isophorone	90		92		40-140	2		30
Naphthalene	84		85		40-140	1		30
Nitrobenzene	92		89		40-140	3		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG816689-2 WG816689-3								
Bis(2-Ethylhexyl)phthalate	96		102		40-140	6		30
Butyl benzyl phthalate	99		105		40-140	6		30
Di-n-butylphthalate	96		102		40-140	6		30
Di-n-octylphthalate	88		96		40-140	9		30
Diethyl phthalate	90		99		40-140	10		30
Dimethyl phthalate	89		99		40-140	11		30
Benzo(a)anthracene	89		97		40-140	9		30
Benzo(a)pyrene	92		103		40-140	11		30
Benzo(b)fluoranthene	87		97		40-140	11		30
Benzo(k)fluoranthene	88		96		40-140	9		30
Chrysene	83		91		40-140	9		30
Acenaphthylene	92		98		40-140	6		30
Anthracene	90		96		40-140	6		30
Benzo(ghi)perylene	84		91		40-140	8		30
Fluorene	89		97		40-140	9		30
Phenanthrene	86		92		40-140	7		30
Dibenzo(a,h)anthracene	85		92		40-140	8		30
Indeno(1,2,3-cd)Pyrene	87		95		40-140	9		30
Pyrene	90		97		40-140	7		30
Aniline	72		71		40-140	1		30
4-Chloroaniline	96		100		40-140	4		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG816689-2 WG816689-3								
Dibenzofuran	84		92		40-140	9		30
2-Methylnaphthalene	90		93		40-140	3		30
Acetophenone	86		87		40-140	1		30
2,4,6-Trichlorophenol	96		103		30-130	7		30
2-Chlorophenol	89		88		30-130	1		30
2,4-Dichlorophenol	95		101		30-130	6		30
2,4-Dimethylphenol	100		104		30-130	4		30
2-Nitrophenol	89		91		30-130	2		30
4-Nitrophenol	98		108		30-130	10		30
2,4-Dinitrophenol	62		69		30-130	11		30
Pentachlorophenol	84		89		30-130	6		30
Phenol	85		88		30-130	3		30
2-Methylphenol	93		95		30-130	2		30
3-Methylphenol/4-Methylphenol	95		99		30-130	4		30
2,4,5-Trichlorophenol	92		101		30-130	9		30

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG816689-2 WG816689-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
2-Fluorophenol	90		89		30-130
Phenol-d6	94		99		30-130
Nitrobenzene-d5	96		91		30-130
2-Fluorobiphenyl	86		93		30-130
2,4,6-Tribromophenol	84		95		30-130
4-Terphenyl-d14	90		97		30-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG817285-2 WG817285-3								
Acenaphthene	83		76		40-140	9		30
1,2,4-Trichlorobenzene	81		72		40-140	12		30
Hexachlorobenzene	84		78		40-140	7		30
Bis(2-chloroethyl)ether	77		68		40-140	12		30
2-Chloronaphthalene	86		79		40-140	8		30
1,2-Dichlorobenzene	78		70		40-140	11		30
1,3-Dichlorobenzene	80		70		40-140	13		30
1,4-Dichlorobenzene	79		69		40-140	14		30
3,3'-Dichlorobenzidine	85		84		40-140	1		30
2,4-Dinitrotoluene	93		88		40-140	6		30
2,6-Dinitrotoluene	92		88		40-140	4		30
Azobenzene	88		85		40-140	3		30
Fluoranthene	92		86		40-140	7		30
4-Bromophenyl phenyl ether	87		81		40-140	7		30
Bis(2-chloroisopropyl)ether	75		70		40-140	7		30
Bis(2-chloroethoxy)methane	80		74		40-140	8		30
Hexachlorobutadiene	84		73		40-140	14		30
Hexachloroethane	83		73		40-140	13		30
Isophorone	82		77		40-140	6		30
Naphthalene	81		72		40-140	12		30
Nitrobenzene	87		77		40-140	12		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG817285-2 WG817285-3								
Bis(2-Ethylhexyl)phthalate	95		89		40-140	7		30
Butyl benzyl phthalate	96		92		40-140	4		30
Di-n-butylphthalate	98		90		40-140	9		30
Di-n-octylphthalate	90		85		40-140	6		30
Diethyl phthalate	92		86		40-140	7		30
Dimethyl phthalate	89		83		40-140	7		30
Benzo(a)anthracene	90		83		40-140	8		30
Benzo(a)pyrene	91		86		40-140	6		30
Benzo(b)fluoranthene	90		85		40-140	6		30
Benzo(k)fluoranthene	83		80		40-140	4		30
Chrysene	80		75		40-140	6		30
Acenaphthylene	88		84		40-140	5		30
Anthracene	90		84		40-140	7		30
Benzo(ghi)perylene	82		77		40-140	6		30
Fluorene	88		84		40-140	5		30
Phenanthrene	85		80		40-140	6		30
Dibenzo(a,h)anthracene	85		83		40-140	2		30
Indeno(1,2,3-cd)Pyrene	89		84		40-140	6		30
Pyrene	88		84		40-140	5		30
Aniline	67		64		40-140	5		30
4-Chloroaniline	90		103		40-140	13		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG817285-2 WG817285-3								
Dibenzofuran	86		78		40-140	10		30
2-Methylnaphthalene	86		79		40-140	8		30
Acetophenone	81		74		40-140	9		30
2,4,6-Trichlorophenol	95		88		30-130	8		30
2-Chlorophenol	83		76		30-130	9		30
2,4-Dichlorophenol	94		86		30-130	9		30
2,4-Dimethylphenol	97		91		30-130	6		30
2-Nitrophenol	85		76		30-130	11		30
4-Nitrophenol	104		96		30-130	8		30
2,4-Dinitrophenol	62		57		30-130	8		30
Pentachlorophenol	79		73		30-130	8		30
Phenol	80		72		30-130	11		30
2-Methylphenol	86		80		30-130	7		30
3-Methylphenol/4-Methylphenol	90		84		30-130	7		30
2,4,5-Trichlorophenol	89		84		30-130	6		30

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
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MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG817285-2 WG817285-3

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>
2-Fluorophenol	91		84		30-130
Phenol-d6	95		89		30-130
Nitrobenzene-d5	94		88		30-130
2-Fluorobiphenyl	91		86		30-130
2,4,6-Tribromophenol	93		91		30-130
4-Terphenyl-d14	93		90		30-130



# **PETROLEUM HYDROCARBONS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**SAMPLE RESULTS**

Lab ID: L1520730-03  
 Client ID: D-2 6'-12' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 08/31/15 04:04  
 Analyst: AR  
 Percent Solids: 84%

Date Collected: 08/26/15 14:00  
 Date Received: 08/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/28/15 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	144000		ug/kg	38900	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	109		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8015C(M)  
Analytical Date: 08/30/15 13:29  
Analyst: AR

Extraction Method: EPA 3546  
Extraction Date: 08/28/15 17:32

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 03,05,07,09 Batch: WG816702-1					
TPH	ND		ug/kg	32600	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	75		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8015C(M)  
**Analytical Date:** 09/01/15 10:05  
**Analyst:** AR

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/31/15 15:34

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01 Batch: WG817215-1					
TPH	ND		ug/kg	31900	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	97		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 03,05,07,09 Batch: WG816702-2								
TPH	92		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	80				40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01 Batch: WG817215-2								
TPH	115		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	83				40-140

# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**SAMPLE RESULTS**

Lab ID: L1520730-03  
 Client ID: D-2 6'-12' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 08/29/15 00:23  
 Analyst: JW  
 Percent Solids: 84%

Date Collected: 08/26/15 14:00  
 Date Received: 08/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 08/28/15 11:34  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 08/28/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 08/28/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	38.8	--	1	A
Aroclor 1221	ND		ug/kg	38.8	--	1	A
Aroclor 1232	ND		ug/kg	38.8	--	1	A
Aroclor 1242	ND		ug/kg	38.8	--	1	A
Aroclor 1248	ND		ug/kg	38.8	--	1	A
Aroclor 1254	ND		ug/kg	38.8	--	1	A
Aroclor 1260	ND		ug/kg	38.8	--	1	A
Aroclor 1262	ND		ug/kg	38.8	--	1	A
Aroclor 1268	ND		ug/kg	38.8	--	1	A
PCBs, Total	ND		ug/kg	38.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	90		30-150	B
Decachlorobiphenyl	81		30-150	B



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**Method Blank Analysis  
 Batch Quality Control**

**Analytical Method:** 97,8082A  
**Analytical Date:** 08/29/15 00:56  
**Analyst:** JW

**Extraction Method:** EPA 3546  
**Extraction Date:** 08/28/15 11:34  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 08/28/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 08/28/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG816597-1						
Aroclor 1016	ND		ug/kg	33.0	--	A
Aroclor 1221	ND		ug/kg	33.0	--	A
Aroclor 1232	ND		ug/kg	33.0	--	A
Aroclor 1242	ND		ug/kg	33.0	--	A
Aroclor 1248	ND		ug/kg	33.0	--	A
Aroclor 1254	ND		ug/kg	33.0	--	A
Aroclor 1260	ND		ug/kg	33.0	--	A
Aroclor 1262	ND		ug/kg	33.0	--	A
Aroclor 1268	ND		ug/kg	33.0	--	A
PCBs, Total	ND		ug/kg	33.0	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	83		30-150	A
2,4,5,6-Tetrachloro-m-xylene	83		30-150	B
Decachlorobiphenyl	69		30-150	B



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG816597-2 WG816597-3									
Aroclor 1016	78		73		40-140	7		30	A
Aroclor 1260	84		77		40-140	9		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	90		83		30-150	A
Decachlorobiphenyl	92		86		30-150	A
2,4,5,6-Tetrachloro-m-xylene	99		90		30-150	B
Decachlorobiphenyl	88		80		30-150	B

## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**SAMPLE RESULTS**

Lab ID: L1520730-03  
 Client ID: D-2 6'-12' COMP.  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 84%

Date Collected: 08/26/15 14:00  
 Date Received: 08/26/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Arsenic, Total	1.8		mg/kg	0.47	--	1	08/27/15 05:10	08/27/15 16:30	EPA 3050B	97,6010C	MC
Barium, Total	32		mg/kg	0.47	--	1	08/27/15 05:10	08/27/15 16:30	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.47	--	1	08/27/15 05:10	08/27/15 16:30	EPA 3050B	97,6010C	MC
Chromium, Total	12		mg/kg	0.47	--	1	08/27/15 05:10	08/27/15 16:30	EPA 3050B	97,6010C	MC
Lead, Total	5.2		mg/kg	2.4	--	1	08/27/15 05:10	08/27/15 16:30	EPA 3050B	97,6010C	MC
Mercury, Total	ND		mg/kg	0.086	--	1	08/27/15 10:45	08/28/15 12:00	EPA 7471B	97,7471B	DB
Selenium, Total	ND		mg/kg	2.4	--	1	08/27/15 05:10	08/27/15 16:30	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.47	--	1	08/27/15 05:10	08/27/15 16:30	EPA 3050B	97,6010C	MC



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG816032-1									
Mercury, Total	ND	mg/kg	0.083	--	1	08/27/15 10:45	08/28/15 11:23	97,7471B	DB

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01,03 Batch: WG816043-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	08/27/15 05:10	08/27/15 21:44	97,6010C	MC
Barium, Total	ND	mg/kg	0.40	--	1	08/27/15 05:10	08/27/15 21:44	97,6010C	MC
Cadmium, Total	ND	mg/kg	0.40	--	1	08/27/15 05:10	08/27/15 21:44	97,6010C	MC
Chromium, Total	ND	mg/kg	0.40	--	1	08/27/15 05:10	08/27/15 21:44	97,6010C	MC
Lead, Total	ND	mg/kg	2.0	--	1	08/27/15 05:10	08/27/15 21:44	97,6010C	MC
Selenium, Total	ND	mg/kg	2.0	--	1	08/27/15 05:10	08/27/15 21:44	97,6010C	MC
Silver, Total	ND	mg/kg	0.40	--	1	08/27/15 05:10	08/27/15 21:44	97,6010C	MC

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 05,07,09 Batch: WG816200-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	08/27/15 11:07	09/01/15 15:22	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	08/27/15 11:07	09/01/15 15:22	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	08/27/15 11:07	09/01/15 15:22	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	08/27/15 11:07	09/01/15 15:22	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	08/27/15 11:07	09/01/15 15:22	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	08/27/15 11:07	09/01/15 15:22	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	08/27/15 11:07	09/01/15 15:22	97,6010C	JH

**Project Name:** FAN PIER PARCEL D

**Lab Number:** L1520730

**Project Number:** 4426.9.1D

**Report Date:** 09/01/15

## Method Blank Analysis Batch Quality Control

### Prep Information

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Digestion Method: EPA 3050B

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG816032-2 WG816032-3 SRM Lot Number: D088-540								
Mercury, Total	104		107		72-128	3		30
MCP Total Metals - Westborough Lab Associated sample(s): 01,03 Batch: WG816043-2 WG816043-3 SRM Lot Number: D088-540								
Arsenic, Total	105		105		79-121	0		30
Barium, Total	99		99		83-117	0		30
Cadmium, Total	100		100		83-117	0		30
Chromium, Total	101		101		80-120	0		30
Lead, Total	88		88		81-117	0		30
Selenium, Total	102		102		78-122	0		30
Silver, Total	103		103		75-124	0		30
MCP Total Metals - Westborough Lab Associated sample(s): 05,07,09 Batch: WG816200-2 WG816200-3 SRM Lot Number: D088-540								
Arsenic, Total	105		105		79-121	0		30
Barium, Total	88		88		83-117	0		30
Cadmium, Total	91		92		83-117	1		30
Chromium, Total	92		92		80-120	0		30
Lead, Total	90		90		81-117	0		30
Selenium, Total	97		97		78-122	0		30
Silver, Total	93		96		75-124	3		30

# **INORGANICS & MISCELLANEOUS**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

### SAMPLE RESULTS

**Lab ID:** L1520730-03  
**Client ID:** D-2 6'-12' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/26/15 14:00  
**Date Received:** 08/26/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/29/15 09:04	1,1030	AB



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

**SAMPLE RESULTS**

**Lab ID:** L1520730-03  
**Client ID:** D-2 6'-12' COMP.  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 08/26/15 14:00  
**Date Received:** 08/26/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	240		umhos/cm	10	--	1	-	08/27/15 20:25	1,9050A	AS
Solids, Total	84.4		%	0.100	NA	1	-	08/26/15 21:11	30,2540G	RT
pH (H)	8.6		SU	-	NA	1	-	08/26/15 21:50	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	08/29/15 09:00	08/29/15 11:00	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/29/15 09:00	08/29/15 10:51	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

## SAMPLE RESULTS

Lab ID: L1520730-04

Date Collected: 08/26/15 14:00

Client ID: D-2 S-5 8'-10'

Date Received: 08/26/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.4		%	0.100	NA	1	-	08/26/15 21:11	30,2540G	RT



Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,03,05 Batch: WG816824-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	08/29/15 09:00	08/29/15 10:59	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01,03,05 Batch: WG816825-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	08/29/15 09:00	08/29/15 10:49	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 07,09 Batch: WG816826-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	08/29/15 11:45	08/29/15 12:58	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 07,09 Batch: WG816827-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	08/29/15 11:45	08/29/15 12:51	1,7.3	TL

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG815991-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG816365-1								
Specific Conductance	96		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03,05 Batch: WG816824-2								
Cyanide, Reactive	42		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01,03,05 Batch: WG816825-2								
Sulfide, Reactive	99		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 07,09 Batch: WG816826-2								
Cyanide, Reactive	36		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 07,09 Batch: WG816827-2								
Sulfide, Reactive	89		-		60-125	-		40

Project Name: FAN PIER PARCEL D

Lab Number: L1520730

Project Number: 4426.9.1D

Report Date: 09/01/15

## 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(*)
L1520730-01A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520730-02A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520730-02B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520730-02C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520730-03A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520730-04A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520730-04B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520730-04C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1520730-05A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520730-06A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520730-06B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520730-06C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520730-07A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520730-08A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520730-08B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520730-08C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520730-09A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1520730-10A	Vial MeOH preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520730-10B	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)
L1520730-10C	Vial water preserved	A	N/A	3.8	Y	Absent	MCP-8260HLW-10(14)

### Container Comments

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D

**Lab Number:** L1520730

**Project Number:** 4426.9.1D

**Report Date:** 09/01/15

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
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**Container Comments**

L1520730-01A

\*Values in parentheses indicate holding time in days





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

## 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.
LCS D	- 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

#### **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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520730  
**Report Date:** 09/01/15

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## 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

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**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, NO<sub>2</sub>, NO<sub>3</sub>.

**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.

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**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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

# CHAIN OF CUSTODY

PAGE OF



## Project Information

Westborough, MA    Mansfield, MA  
 TEL: 508-898-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3288

Project Name: Fan Pier Parcel D

## Client Information

Client: McPhail Associates, LLC  
 Address: 2269 Massachusetts Avenue  
 Cambridge, MA 02140  
 Phone: 6178681420

Project Location: Boston, MA

Project #: 4426.9.1D  
 Project Manager: Ben Downing/Peter DeChaves  
 ALPHA Quote #: Fan Pier Pricing

## Turn-Around Time

Fax: 6178681423     Standard     Rush (ONLY IF PRE-APPROVED)  
 Email: bdowning@mcphailgeo.com  
 These samples have been Previously analyzed by Alpha    Due Date:    Time:

Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT  
 \*Denotes obtain total solid sample from composite sample.  
 \*\*Minus VOCs

Date Rec'd in Lab: 8/26/15

ALPHA Job #: L1520730

## Report Information Data Deliverables

FAX     EMAIL  
 ADEx     Add'l Deliverables

## Billing Information

Same as Client info    PO #:

## Regulatory Requirements/Report Limits

State/Fed Program: MA    Criteria: RCS-1

## MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes     No    Are MCP Analytical Methods Required?  
 Yes     No    Are CT RCP (Reasonable Confidence Protocols) Required?

## ANALYSIS

VOCs (8260)*	Soil Management Package IV**																	SAMPLE HANDLING Filtration <input type="checkbox"/> Done <input checked="" type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)	TOTAL # BOTTLES								
20730-01	D-2 0'-6' Comp.	8/26/15	2:00	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 16oz Amber	1
02	D-2 S-3 4'-6"	8/26/15	2:00	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low / High	3
03	D-2 6'-12' Comp.	8/26/15	2:00	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 16oz Amber	1
04	D-2 S-5 8'-10'	8/26/15	2:00	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low / High	3
05	D-2 12'-18' Comp.	8/26/15	2:00	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 16oz Amber	1
06	D-2 S-9 16'-18'	8/26/15	2:00	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low / High	3
07	D-2 18'-22' Comp.	8/26/15	2:00	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 16oz Amber	1
08	D-2 S-11 20'-22'	8/26/15	2:00	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low / High	3
09	D-2 30'-42' Comp.	8/26/15	2:00	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 16oz Amber	1
10	D-2 S-16 30'-32'	8/26/15	2:00	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low / High	3

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-	-	-

IS YOUR PROJECT MA MCP or CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	8/26/15 2:00		8/26/15 1530
	8/26/15 1838		8/20/15 1838

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

FORM NO: 01-01(1)  
(rev. 30 JUL-07)

7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1520730

Instrument ID: Voal00.i      Calibration Date: 30-AUG-2015      Time: 09:15

Lab File ID: 0830A01      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.187	.17003	.1	-9	20	
chloromethane	.20766	.25669	.1	24	20	F
vinyl chloride	.21396	.24067	.1	12	20	
bromomethane	.13517	.12116	.1	-10	20	
chloroethane	.12913	.1402	.1	9	20	
trichlorofluoromethane	.24868	.23337	.1	-6	20	
ethyl ether	.12265	.11267	.05	-8	20	
1,1,-dichloroethene	.15676	.16319	.1	4	20	
carbon disulfide	.60511	.64602	.1	7	20	
methylene chloride	.20702	.20262	.1	-2	20	
acetone	100	118	.1	18	20	
trans-1,2-dichloroethene	.18303	.18924	.1	3	20	
methyl tert butyl ether	.59541	.52845	.1	-11	20	
Diisopropyl Ether	.66228	.73189	.05	11	20	
1,1-dichloroethane	.37295	.41494	.2	11	20	
Ethyl-Tert-Butyl-Ether	.67262	.67008	.05	0	20	
cis-1,2-dichloroethene	.20399	.20974	.1	3	20	
2,2-dichloropropane	.27701	.30189	.05	9	20	
bromochloromethane	.09003	.0884	.05	-2	20	
chloroform	.35545	.3571	.2	0	20	
carbontetrachloride	.23543	.24086	.1	2	20	
tetrahydrofuran	.07866	.06104	.05	-22	20	F
1,1,1-trichloroethane	.28145	.28619	.1	2	20	
2-butanone	.11217	.10003	.1	-11	20	
1,1-dichloropropene	.24964	.27593	.05	11	20	
benzene	.78204	.83595	.5	7	20	
Tertiary-Amyl Methyl Ether	.58171	.55326	.05	-5	20	
1,2-dichloroethane	.29909	.27445	.1	-8	20	
trichloroethene	.19209	.20078	.2	5	20	F
dibromomethane	.12744	.11493	.05	-10	20	
1,2-dichloropropane	.20856	.22951	.1	10	20	
bromodichloromethane	.27983	.27166	.2	-3	20	
1,4-dioxane	.00226	.00205	.05	-9	20	F
cis-1,3-dichloropropene	.32828	.33753	.2	3	20	
toluene	.70265	.7266	.4	3	20	
4-methyl-2-pentanone	.09341	.07518	.1	-20	20	F
tetrachloroethene	.24354	.25428	.2	4	20	
trans-1,3-dichloropropene	.44951	.42762	.1	-5	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1520730

Instrument ID: Voal00.i      Calibration Date: 30-AUG-2015      Time: 09:15

Lab File ID: 0830A01      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.22462	.20595	.1	-8	20
chlorodibromomethane	.27986	.25338	.1	-9	20
1,3-dichloropropane	.4689	.43566	.05	-7	20
1,2-dibromoethane	.25199	.21537	.1	-15	20
2-hexanone	.25182	.19021	.1	-24	20
chlorobenzene	.72245	.72362	.5	0	20
ethyl benzene	1.321	1.3612	.1	3	20
1,1,1,2-tetrachloroethane	.25141	.24492	.05	-3	20
p/m xylene	.4784	.49823	.1	4	20
o xylene	.4574	.46491	.3	2	20
styrene	.80709	.80441	.3	0	20
bromoform	.39095	.31364	.1	-20	20
isopropylbenzene	2.5014	2.4654	.1	-1	20
bromobenzene	.58801	.5501	.05	-6	20
n-propylbenzene	3.1176	3.1823	.05	2	20
1,1,2,2,-tetrachloroethane	.79665	.64913	.3	-19	20
2-chlorotoluene	1.9997	1.9130	.05	-4	20
1,3,5-trimethylbenzene	2.1494	2.1598	.05	0	20
1,2,3-trichloropropane	.6668	.54202	.05	-19	20
4-chlorotoluene	1.9179	1.9113	.05	0	20
tert-butylbenzene	1.6411	1.6228	.05	-1	20
1,2,4-trimethylbenzene	2.1380	2.1390	.05	0	20
sec-butylbenzene	2.7032	2.7856	.05	3	20
p-isopropyltoluene	2.1196	2.1636	.05	2	20
1,3-dichlorobenzene	1.1313	1.1006	.6	-3	20
1,4-dichlorobenzene	1.1563	1.1160	.5	-3	20
n-butylbenzene	2.2066	2.3571	.05	7	20
1,2-dichlorobenzene	1.0944	1.0098	.4	-8	20
1,2-dibromo-3-chloropropane	.11922	.08379	.05	-30	20
hexachlorobutadiene	.33792	.33969	.05	1	20
1,2,4-trichlorobenzene	.69367	.66798	.2	-4	20
naphthalene	2.0354	1.6016	.05	-21	20
1,2,3-trichlorobenzene	.65938	.60795	.05	-8	20
dibromofluoromethane	.24097	.23402	.05	-3	30
1,2-dichloroethane-d4	.30902	.27591	.05	-11	30
toluene-d8	1.3369	1.3342	.05	0	30
4-bromofluorobenzene	1.0311	1.0067	.05	-2	30

FORM VII MCP-8260HLW-10



## ANALYTICAL REPORT

Lab Number:	L1520812
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	09/02/15

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).

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





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520812  
**Report Date:** 09/02/15

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1520812-01	D-7 6'-12' COMP	SOIL	BOSTON, MA	08/20/15 14:30	08/20/15

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520812  
**Report Date:** 09/02/15

### MADEP MCP Response Action Analytical Report Certification

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
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### 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520812  
**Report Date:** 09/02/15

**Case Narrative (continued)**

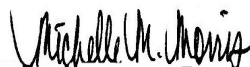
MCP Related Narratives

Report Submission

All MCP required questions were answered with affirmative responses; therefore, there are no relevant protocol-specific QC and/or performance standard non-conformances to report.

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:



Michelle M. Morris

Title: Technical Director/Representative

Date: 09/02/15

## METALS

**Project Name:** FAN PIER PARCEL D**Lab Number:** L1520812**Project Number:** 4426.9.1D**Report Date:** 09/02/15**SAMPLE RESULTS**

Lab ID: L1520812-01

Date Collected: 08/20/15 14:30

Client ID: D-7 6'-12' COMP

Date Received: 08/20/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

TCLP/SPLP Ext. Date: 08/29/15 19:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Westborough Lab											
Lead, TCLP	ND		mg/l	0.50	--	1	09/01/15 06:03	09/01/15 17:11	EPA 3015	1,6010C	JH



Project Name: FAN PIER PARCEL D

Lab Number: L1520812

Project Number: 4426.9.1D

Report Date: 09/02/15

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Westborough Lab for sample(s): 01 Batch: WG817364-1									
Lead, TCLP	ND	mg/l	0.50	--	1	09/01/15 06:03	09/01/15 12:52	1,6010C	JH

### Prep Information

Digestion Method: EPA 3015

TCLP/SPLP Extraction Date: 08/29/15 19:26

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D

**Lab Number:** L1520812

**Project Number:** 4426.9.1D

**Report Date:** 09/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Westborough Lab Associated sample(s): 01 Batch: WG817364-2								
Lead, TCLP	94		-		75-125	-		20



**Project Name:** FAN PIER PARCEL D**Lab Number:** L1520812**Project Number:** 4426.9.1D**Report Date:** 09/02/15**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(*)
L1520812-01A	Glass 500ml/16oz unpreserved	A	N/A	3.8	Y	Absent	-
L1520812-01X	Plastic 120ml HNO3 preserved spl	A	<2	3.8	Y	Absent	PB-CI(180)
L1520812-01X9	Tumble Vessel	A	N/A	3.8	Y	Absent	-

\*Values in parentheses indicate holding time in days

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520812  
**Report Date:** 09/02/15

## 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520812  
**Report Date:** 09/02/15

#### **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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1520812  
**Report Date:** 09/02/15

## REFERENCES

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

## 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, NO<sub>2</sub>, NO<sub>3</sub>.

**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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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

# CHAIN OF CUSTODY

PAGE OF



## Project Information

Westborough, MA    Mansfield, MA  
 TEL: 508-898-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3288

Project Name: Fan Pier Parcel D

## Client Information

Client: McPhail Associates, LLC  
 Address: 2269 Massachusetts Avenue  
 Cambridge, MA 02140  
 Phone: 6178681420

Project Location: Boston, MA

Project #: 4426.9.1D

Project Manager: Ben Downing/Peter DeChaves

ALPHA Quote #: Fan Pier Pricing

## Turn-Around Time

Fax: 6178681423

Standard     Rush (ONLY IF PRE-APPROVED)

Email: bdowning@mcphailgeo.com

These samples have been Previously analyzed by Alpha

Due Date:    Time:

Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT

\*Denotes obtain total solid sample from composite sample.

\*\*Minus VOCs

Date Rec'd in Lab: 8/20/15

ALPHA Job #: ~~L1520182~~

## Report Information Data Deliverables Billing Information

FAX     EMAIL  
 ADEx     Add'l Deliverables

Same as Client info    PO #:

## Regulatory Requirements/Report Limits

State/Fed Program: MA

Criteria: RCS-1

## MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes     No    Are MCP Analytical Methods Required?  
 Yes     No    Are CT RCP (Reasonable Confidence Protocols) Required?

## ANALYSIS

VOCs (8260)*	Soil Management Package V**	TCLP-PB											
		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>											

SAMPLE HANDLING  
 Filtration  
 Done  
 Not Needed  
 Lab to do  
 Preservation  
 Lab to do  
 (Please specify below)

TOTAL # BOTTLES

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS												Sample Specific Comments	TOTAL # BOTTLES							
		Date	Time			VOCs (8260)*	Soil Management Package V**																			
20812-01	D-12 6'-12' Comp	8/20/15	2:30	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/16oz Amber	1	
02	D-12 S-5 10'-12'	8/20/15	2:30	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low / High	3
-01	D-7 6'-12' Comp	8/20/15	2:30	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/16oz Amber	1
04	D-7 S-5 10'-12'	8/20/15	2:30	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low / High	3
05	D-7 12'-19' Comp	8/20/15	2:30	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/16oz Amber	1
06	D-7 S-7 14'-16'	8/20/15	2:30	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low / High	3
07	D-7 18'-24' Comp	8/20/15	2:30	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2/16oz Amber	1
08	D-7 S-11 22'-24'	8/20/15	2:30	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low / High	3
09	D-7 28'-42' Comp	8/20/15	2:30	S	MG	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/16oz Amber	1
10	D-7 S-15 35'-37'	8/20/15	2:30	S	MG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Low / High	3

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	-	-	-	-	-	-	-	-	-	-	-

IS YOUR PROJECT MA MCP or CT RCP?

FORM NO. 01-01(i)  
(rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	8/20/15 2:30	<i>[Signature]</i>	8/20/15 14:50
	8/20/15 18:00	<i>[Signature]</i>	8/20/15 18:00

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



## ANALYTICAL REPORT

Lab Number:	L1527338
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	10/31/15

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

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



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
<del>L1527338-01</del>	<del>D24C S1 36-30</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>10/26/15 11:30</del>	<del>10/26/15</del>
<del>L1527338-02</del>	<del>D24C 36-42 FILL</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>10/26/15 11:30</del>	<del>10/26/15</del>
L1527338-03	D-10 S1 0-2	SOIL	BOSTON, MA	10/26/15 13:30	10/26/15
L1527338-04	D-10 0-6 FILL	SOIL	BOSTON, MA	10/26/15 13:30	10/26/15
L1527338-05	D-10 S4 6-8	SOIL	BOSTON, MA	10/26/15 14:00	10/26/15
L1527338-06	D-10 6-12 FILL	SOIL	BOSTON, MA	10/26/15 14:00	10/26/15
L1527338-07	D-10 S9 16-18	SOIL	BOSTON, MA	10/26/15 14:30	10/26/15
L1527338-08	D-10 12-18 FILL	SOIL	BOSTON, MA	10/26/15 14:30	10/26/15
L1527338-09	D-10 S12 22-24	SOIL	BOSTON, MA	10/26/15 15:00	10/26/15
L1527338-10	D-10 18-24 FILL	SOIL	BOSTON, MA	10/26/15 15:00	10/26/15



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

### MADEP MCP Response Action Analytical Report Certification

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

### 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:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

The samples submitted for Volatile Organics were received without raw soil for the Total Solids analysis. The Total Solids results from the corresponding composite samples were utilized in the dry weight calculation of the Volatile Organics data.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1527338-01, -03, -05, -07, and -09, did not meet the method required minimum response factor on the lowest calibration standard for 4-methyl-2-pentanone (0.07493) and 1,4-dioxane (0.00162), as well as the average response factor for trichloroethene, 4-methyl-2-pentanone, and 1,4-dioxane. The initial calibration verification is outside acceptance criteria for tetrahydrofuran (65%), but within overall method criteria.

The continuing calibration standard, associated with L1527338-01, -03, -05, -07, and -09, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

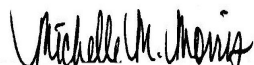
##### Metals

In reference to question I:

L1527338-02 was analyzed for a subset of MCP analytes per the Chain of Custody.

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:

 Michelle M. Morris

Title: Technical Director/Representative

Date: 10/31/15

# ORGANICS

# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-03  
 Client ID: D-10 S1 0-2  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 10/28/15 23:04  
 Analyst: PK  
 Percent Solids: 85%

Date Collected: 10/26/15 13:30  
 Date Received: 10/26/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	16	--	1
1,1-Dichloroethane	ND		ug/kg	2.4	--	1
Chloroform	ND		ug/kg	2.4	--	1
Carbon tetrachloride	ND		ug/kg	1.6	--	1
1,2-Dichloropropane	ND		ug/kg	5.7	--	1
Dibromochloromethane	ND		ug/kg	1.6	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.4	--	1
Tetrachloroethene	ND		ug/kg	1.6	--	1
Chlorobenzene	ND		ug/kg	1.6	--	1
Trichlorofluoromethane	ND		ug/kg	6.6	--	1
1,2-Dichloroethane	ND		ug/kg	1.6	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.6	--	1
Bromodichloromethane	ND		ug/kg	1.6	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.6	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.6	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.6	--	1
1,1-Dichloropropene	ND		ug/kg	6.6	--	1
Bromoform	ND		ug/kg	6.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.6	--	1
Benzene	ND		ug/kg	1.6	--	1
Toluene	ND		ug/kg	2.4	--	1
Ethylbenzene	ND		ug/kg	1.6	--	1
Chloromethane	ND		ug/kg	6.6	--	1
Bromomethane	ND		ug/kg	3.3	--	1
Vinyl chloride	ND		ug/kg	3.3	--	1
Chloroethane	ND		ug/kg	3.3	--	1
1,1-Dichloroethene	ND		ug/kg	1.6	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.4	--	1
Trichloroethene	ND		ug/kg	1.6	--	1
1,2-Dichlorobenzene	ND		ug/kg	6.6	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

## SAMPLE RESULTS

Lab ID: L1527338-03

Date Collected: 10/26/15 13:30

Client ID: D-10 S1 0-2

Date Received: 10/26/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	6.6	--	1
1,4-Dichlorobenzene	ND		ug/kg	6.6	--	1
Methyl tert butyl ether	ND		ug/kg	3.3	--	1
p/m-Xylene	ND		ug/kg	3.3	--	1
o-Xylene	ND		ug/kg	3.3	--	1
Xylenes, Total	ND		ug/kg	3.3	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.6	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.6	--	1
Dibromomethane	ND		ug/kg	6.6	--	1
1,2,3-Trichloropropane	ND		ug/kg	6.6	--	1
Styrene	ND		ug/kg	3.3	--	1
Dichlorodifluoromethane	ND		ug/kg	16	--	1
Acetone	ND		ug/kg	59	--	1
Carbon disulfide	ND		ug/kg	6.6	--	1
Methyl ethyl ketone	ND		ug/kg	16	--	1
Methyl isobutyl ketone	ND		ug/kg	16	--	1
2-Hexanone	ND		ug/kg	16	--	1
Bromochloromethane	ND		ug/kg	6.6	--	1
Tetrahydrofuran	ND		ug/kg	6.6	--	1
2,2-Dichloropropane	ND		ug/kg	8.2	--	1
1,2-Dibromoethane	ND		ug/kg	6.6	--	1
1,3-Dichloropropane	ND		ug/kg	6.6	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.6	--	1
Bromobenzene	ND		ug/kg	8.2	--	1
n-Butylbenzene	ND		ug/kg	1.6	--	1
sec-Butylbenzene	ND		ug/kg	1.6	--	1
tert-Butylbenzene	ND		ug/kg	6.6	--	1
o-Chlorotoluene	ND		ug/kg	6.6	--	1
p-Chlorotoluene	ND		ug/kg	6.6	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	6.6	--	1
Hexachlorobutadiene	ND		ug/kg	6.6	--	1
Isopropylbenzene	ND		ug/kg	1.6	--	1
p-Isopropyltoluene	ND		ug/kg	1.6	--	1
Naphthalene	ND		ug/kg	6.6	--	1
n-Propylbenzene	ND		ug/kg	1.6	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	6.6	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	6.6	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	6.6	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	6.6	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-03  
 Client ID: D-10 S1 0-2  
 Sample Location: BOSTON, MA

Date Collected: 10/26/15 13:30  
 Date Received: 10/26/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	8.2	--	1
Diisopropyl Ether	ND		ug/kg	6.6	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	6.6	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	6.6	--	1
1,4-Dioxane	ND		ug/kg	66	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	105		70-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-05  
 Client ID: D-10 S4 6-8  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 10/28/15 23:31  
 Analyst: PK  
 Percent Solids: 79%

Date Collected: 10/26/15 14:00  
 Date Received: 10/26/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	22	--	1
1,1-Dichloroethane	ND		ug/kg	3.4	--	1
Chloroform	ND		ug/kg	3.4	--	1
Carbon tetrachloride	ND		ug/kg	2.2	--	1
1,2-Dichloropropane	ND		ug/kg	7.9	--	1
Dibromochloromethane	ND		ug/kg	2.2	--	1
1,1,2-Trichloroethane	ND		ug/kg	3.4	--	1
Tetrachloroethene	ND		ug/kg	2.2	--	1
Chlorobenzene	ND		ug/kg	2.2	--	1
Trichlorofluoromethane	ND		ug/kg	9.0	--	1
1,2-Dichloroethane	ND		ug/kg	2.2	--	1
1,1,1-Trichloroethane	ND		ug/kg	2.2	--	1
Bromodichloromethane	ND		ug/kg	2.2	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.2	--	1
cis-1,3-Dichloropropene	ND		ug/kg	2.2	--	1
1,3-Dichloropropene, Total	ND		ug/kg	2.2	--	1
1,1-Dichloropropene	ND		ug/kg	9.0	--	1
Bromoform	ND		ug/kg	9.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	2.2	--	1
Benzene	ND		ug/kg	2.2	--	1
Toluene	ND		ug/kg	3.4	--	1
Ethylbenzene	ND		ug/kg	2.2	--	1
Chloromethane	ND		ug/kg	9.0	--	1
Bromomethane	ND		ug/kg	4.5	--	1
Vinyl chloride	ND		ug/kg	4.5	--	1
Chloroethane	ND		ug/kg	4.5	--	1
1,1-Dichloroethene	ND		ug/kg	2.2	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.4	--	1
Trichloroethene	ND		ug/kg	2.2	--	1
1,2-Dichlorobenzene	ND		ug/kg	9.0	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

## SAMPLE RESULTS

Lab ID: L1527338-05

Date Collected: 10/26/15 14:00

Client ID: D-10 S4 6-8

Date Received: 10/26/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	9.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	9.0	--	1
Methyl tert butyl ether	ND		ug/kg	4.5	--	1
p/m-Xylene	ND		ug/kg	4.5	--	1
o-Xylene	ND		ug/kg	4.5	--	1
Xylenes, Total	ND		ug/kg	4.5	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.2	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.2	--	1
Dibromomethane	ND		ug/kg	9.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	9.0	--	1
Styrene	ND		ug/kg	4.5	--	1
Dichlorodifluoromethane	ND		ug/kg	22	--	1
Acetone	ND		ug/kg	81	--	1
Carbon disulfide	ND		ug/kg	9.0	--	1
Methyl ethyl ketone	ND		ug/kg	22	--	1
Methyl isobutyl ketone	ND		ug/kg	22	--	1
2-Hexanone	ND		ug/kg	22	--	1
Bromochloromethane	ND		ug/kg	9.0	--	1
Tetrahydrofuran	ND		ug/kg	9.0	--	1
2,2-Dichloropropane	ND		ug/kg	11	--	1
1,2-Dibromoethane	ND		ug/kg	9.0	--	1
1,3-Dichloropropane	ND		ug/kg	9.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	2.2	--	1
Bromobenzene	ND		ug/kg	11	--	1
n-Butylbenzene	ND		ug/kg	2.2	--	1
sec-Butylbenzene	ND		ug/kg	2.2	--	1
tert-Butylbenzene	ND		ug/kg	9.0	--	1
o-Chlorotoluene	ND		ug/kg	9.0	--	1
p-Chlorotoluene	ND		ug/kg	9.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	9.0	--	1
Hexachlorobutadiene	ND		ug/kg	9.0	--	1
Isopropylbenzene	ND		ug/kg	2.2	--	1
p-Isopropyltoluene	ND		ug/kg	2.2	--	1
Naphthalene	ND		ug/kg	9.0	--	1
n-Propylbenzene	ND		ug/kg	2.2	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	9.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	9.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	9.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	9.0	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

**Lab ID:** L1527338-05  
**Client ID:** D-10 S4 6-8  
**Sample Location:** BOSTON, MA

**Date Collected:** 10/26/15 14:00  
**Date Received:** 10/26/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	11	--	1
Diisopropyl Ether	ND		ug/kg	9.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	9.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	9.0	--	1
1,4-Dioxane	ND		ug/kg	90	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	108		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-07  
 Client ID: D-10 S9 16-18  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 10/28/15 23:59  
 Analyst: PK  
 Percent Solids: 79%

Date Collected: 10/26/15 14:30  
 Date Received: 10/26/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	18	--	1
1,1-Dichloroethane	ND		ug/kg	2.7	--	1
Chloroform	ND		ug/kg	2.7	--	1
Carbon tetrachloride	ND		ug/kg	1.8	--	1
1,2-Dichloropropane	ND		ug/kg	6.3	--	1
Dibromochloromethane	ND		ug/kg	1.8	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.7	--	1
Tetrachloroethene	ND		ug/kg	1.8	--	1
Chlorobenzene	ND		ug/kg	1.8	--	1
Trichlorofluoromethane	ND		ug/kg	7.2	--	1
1,2-Dichloroethane	ND		ug/kg	1.8	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.8	--	1
Bromodichloromethane	ND		ug/kg	1.8	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.8	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.8	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.8	--	1
1,1-Dichloropropene	ND		ug/kg	7.2	--	1
Bromoform	ND		ug/kg	7.2	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.8	--	1
Benzene	ND		ug/kg	1.8	--	1
Toluene	ND		ug/kg	2.7	--	1
Ethylbenzene	ND		ug/kg	1.8	--	1
Chloromethane	ND		ug/kg	7.2	--	1
Bromomethane	ND		ug/kg	3.6	--	1
Vinyl chloride	ND		ug/kg	3.6	--	1
Chloroethane	ND		ug/kg	3.6	--	1
1,1-Dichloroethene	ND		ug/kg	1.8	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.7	--	1
Trichloroethene	ND		ug/kg	1.8	--	1
1,2-Dichlorobenzene	ND		ug/kg	7.2	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

## SAMPLE RESULTS

Lab ID: L1527338-07

Date Collected: 10/26/15 14:30

Client ID: D-10 S9 16-18

Date Received: 10/26/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	7.2	--	1
1,4-Dichlorobenzene	ND		ug/kg	7.2	--	1
Methyl tert butyl ether	ND		ug/kg	3.6	--	1
p/m-Xylene	ND		ug/kg	3.6	--	1
o-Xylene	ND		ug/kg	3.6	--	1
Xylenes, Total	ND		ug/kg	3.6	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.8	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.8	--	1
Dibromomethane	ND		ug/kg	7.2	--	1
1,2,3-Trichloropropane	ND		ug/kg	7.2	--	1
Styrene	ND		ug/kg	3.6	--	1
Dichlorodifluoromethane	ND		ug/kg	18	--	1
Acetone	ND		ug/kg	65	--	1
Carbon disulfide	ND		ug/kg	7.2	--	1
Methyl ethyl ketone	ND		ug/kg	18	--	1
Methyl isobutyl ketone	ND		ug/kg	18	--	1
2-Hexanone	ND		ug/kg	18	--	1
Bromochloromethane	ND		ug/kg	7.2	--	1
Tetrahydrofuran	ND		ug/kg	7.2	--	1
2,2-Dichloropropane	ND		ug/kg	9.0	--	1
1,2-Dibromoethane	ND		ug/kg	7.2	--	1
1,3-Dichloropropane	ND		ug/kg	7.2	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.8	--	1
Bromobenzene	ND		ug/kg	9.0	--	1
n-Butylbenzene	ND		ug/kg	1.8	--	1
sec-Butylbenzene	ND		ug/kg	1.8	--	1
tert-Butylbenzene	ND		ug/kg	7.2	--	1
o-Chlorotoluene	ND		ug/kg	7.2	--	1
p-Chlorotoluene	ND		ug/kg	7.2	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	7.2	--	1
Hexachlorobutadiene	ND		ug/kg	7.2	--	1
Isopropylbenzene	ND		ug/kg	1.8	--	1
p-Isopropyltoluene	ND		ug/kg	1.8	--	1
Naphthalene	ND		ug/kg	7.2	--	1
n-Propylbenzene	ND		ug/kg	1.8	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	7.2	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	7.2	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	7.2	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	7.2	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-07  
 Client ID: D-10 S9 16-18  
 Sample Location: BOSTON, MA

Date Collected: 10/26/15 14:30  
 Date Received: 10/26/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	9.0	--	1
Diisopropyl Ether	ND		ug/kg	7.2	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	7.2	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	7.2	--	1
1,4-Dioxane	ND		ug/kg	72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	107		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-09  
 Client ID: D-10 S12 22-24  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 10/29/15 00:27  
 Analyst: PK  
 Percent Solids: 82%

Date Collected: 10/26/15 15:00  
 Date Received: 10/26/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	20	--	1
1,1-Dichloroethane	ND		ug/kg	3.0	--	1
Chloroform	ND		ug/kg	3.0	--	1
Carbon tetrachloride	ND		ug/kg	2.0	--	1
1,2-Dichloropropane	ND		ug/kg	6.9	--	1
Dibromochloromethane	ND		ug/kg	2.0	--	1
1,1,2-Trichloroethane	ND		ug/kg	3.0	--	1
Tetrachloroethene	ND		ug/kg	2.0	--	1
Chlorobenzene	ND		ug/kg	2.0	--	1
Trichlorofluoromethane	ND		ug/kg	7.9	--	1
1,2-Dichloroethane	ND		ug/kg	2.0	--	1
1,1,1-Trichloroethane	ND		ug/kg	2.0	--	1
Bromodichloromethane	ND		ug/kg	2.0	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.0	--	1
cis-1,3-Dichloropropene	ND		ug/kg	2.0	--	1
1,3-Dichloropropene, Total	ND		ug/kg	2.0	--	1
1,1-Dichloropropene	ND		ug/kg	7.9	--	1
Bromoform	ND		ug/kg	7.9	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	2.0	--	1
Benzene	ND		ug/kg	2.0	--	1
Toluene	ND		ug/kg	3.0	--	1
Ethylbenzene	ND		ug/kg	2.0	--	1
Chloromethane	ND		ug/kg	7.9	--	1
Bromomethane	ND		ug/kg	3.9	--	1
Vinyl chloride	ND		ug/kg	3.9	--	1
Chloroethane	ND		ug/kg	3.9	--	1
1,1-Dichloroethene	ND		ug/kg	2.0	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.0	--	1
Trichloroethene	ND		ug/kg	2.0	--	1
1,2-Dichlorobenzene	ND		ug/kg	7.9	--	1

Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

## SAMPLE RESULTS

Lab ID: L1527338-09

Date Collected: 10/26/15 15:00

Client ID: D-10 S12 22-24

Date Received: 10/26/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	7.9	--	1
1,4-Dichlorobenzene	ND		ug/kg	7.9	--	1
Methyl tert butyl ether	ND		ug/kg	3.9	--	1
p/m-Xylene	ND		ug/kg	3.9	--	1
o-Xylene	ND		ug/kg	3.9	--	1
Xylenes, Total	ND		ug/kg	3.9	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.0	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.0	--	1
Dibromomethane	ND		ug/kg	7.9	--	1
1,2,3-Trichloropropane	ND		ug/kg	7.9	--	1
Styrene	ND		ug/kg	3.9	--	1
Dichlorodifluoromethane	ND		ug/kg	20	--	1
Acetone	ND		ug/kg	71	--	1
Carbon disulfide	14		ug/kg	7.9	--	1
Methyl ethyl ketone	ND		ug/kg	20	--	1
Methyl isobutyl ketone	ND		ug/kg	20	--	1
2-Hexanone	ND		ug/kg	20	--	1
Bromochloromethane	ND		ug/kg	7.9	--	1
Tetrahydrofuran	ND		ug/kg	7.9	--	1
2,2-Dichloropropane	ND		ug/kg	9.8	--	1
1,2-Dibromoethane	ND		ug/kg	7.9	--	1
1,3-Dichloropropane	ND		ug/kg	7.9	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	2.0	--	1
Bromobenzene	ND		ug/kg	9.8	--	1
n-Butylbenzene	ND		ug/kg	2.0	--	1
sec-Butylbenzene	ND		ug/kg	2.0	--	1
tert-Butylbenzene	ND		ug/kg	7.9	--	1
o-Chlorotoluene	ND		ug/kg	7.9	--	1
p-Chlorotoluene	ND		ug/kg	7.9	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	7.9	--	1
Hexachlorobutadiene	ND		ug/kg	7.9	--	1
Isopropylbenzene	ND		ug/kg	2.0	--	1
p-Isopropyltoluene	ND		ug/kg	2.0	--	1
Naphthalene	ND		ug/kg	7.9	--	1
n-Propylbenzene	ND		ug/kg	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	7.9	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	7.9	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	7.9	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	7.9	--	1



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-09  
 Client ID: D-10 S12 22-24  
 Sample Location: BOSTON, MA

Date Collected: 10/26/15 15:00  
 Date Received: 10/26/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	9.8	--	1
Diisopropyl Ether	ND		ug/kg	7.9	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	7.9	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	7.9	--	1
1,4-Dioxane	ND		ug/kg	79	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	109		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 10/28/15 22:09  
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG835402-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 10/28/15 22:09  
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG835402-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 10/28/15 22:09  
**Analyst:** PK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,03,05,07,09 Batch: WG835402-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	107		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG835402-1 WG835402-2								
Methylene chloride	108		106		70-130	2		20
1,1-Dichloroethane	119		114		70-130	4		20
Chloroform	120		118		70-130	2		20
Carbon tetrachloride	125		120		70-130	4		20
1,2-Dichloropropane	120		118		70-130	2		20
Dibromochloromethane	112		111		70-130	1		20
1,1,2-Trichloroethane	107		109		70-130	2		20
Tetrachloroethene	108		100		70-130	8		20
Chlorobenzene	115		109		70-130	5		20
Trichlorofluoromethane	105		99		70-130	6		20
1,2-Dichloroethane	124		122		70-130	2		20
1,1,1-Trichloroethane	124		118		70-130	5		20
Bromodichloromethane	126		121		70-130	4		20
trans-1,3-Dichloropropene	117		118		70-130	1		20
cis-1,3-Dichloropropene	123		120		70-130	2		20
1,1-Dichloropropene	112		105		70-130	6		20
Bromoform	103		107		70-130	4		20
1,1,2,2-Tetrachloroethane	97		101		70-130	4		20
Benzene	117		112		70-130	4		20
Toluene	113		109		70-130	4		20
Ethylbenzene	115		108		70-130	6		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG835402-1 WG835402-2								
Chloromethane	114		109		70-130	4		20
Bromomethane	91		89		70-130	2		20
Vinyl chloride	87		82		70-130	6		20
Chloroethane	91		85		70-130	7		20
1,1-Dichloroethene	99		93		70-130	6		20
trans-1,2-Dichloroethene	107		104		70-130	3		20
Trichloroethene	118		110		70-130	7		20
1,2-Dichlorobenzene	108		106		70-130	2		20
1,3-Dichlorobenzene	114		107		70-130	6		20
1,4-Dichlorobenzene	113		108		70-130	5		20
Methyl tert butyl ether	118		122		70-130	3		20
p/m-Xylene	115		108		70-130	6		20
o-Xylene	118		112		70-130	5		20
cis-1,2-Dichloroethene	112		109		70-130	3		20
Dibromomethane	111		115		70-130	4		20
1,2,3-Trichloropropane	101		107		70-130	6		20
Styrene	121		113		70-130	7		20
Dichlorodifluoromethane	79		76		70-130	4		20
Acetone	92		96		70-130	4		20
Carbon disulfide	108		100		70-130	8		20
Methyl ethyl ketone	90		102		70-130	13		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG835402-1 WG835402-2								
Methyl isobutyl ketone	102		110		70-130	8		20
2-Hexanone	80		87		70-130	8		20
Bromochloromethane	112		112		70-130	0		20
Tetrahydrofuran	96		104		70-130	8		20
2,2-Dichloropropane	128		120		70-130	6		20
1,2-Dibromoethane	101		104		70-130	3		20
1,3-Dichloropropane	110		110		70-130	0		20
1,1,1,2-Tetrachloroethane	121		118		70-130	3		20
Bromobenzene	108		107		70-130	1		20
n-Butylbenzene	116		105		70-130	10		20
sec-Butylbenzene	110		103		70-130	7		20
tert-Butylbenzene	109		103		70-130	6		20
o-Chlorotoluene	110		116		70-130	5		20
p-Chlorotoluene	118		113		70-130	4		20
1,2-Dibromo-3-chloropropane	91		99		70-130	8		20
Hexachlorobutadiene	118		111		70-130	6		20
Isopropylbenzene	106		103		70-130	3		20
p-Isopropyltoluene	112		106		70-130	6		20
Naphthalene	99		104		70-130	5		20
n-Propylbenzene	110		104		70-130	6		20
1,2,3-Trichlorobenzene	118		115		70-130	3		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,03,05,07,09 Batch: WG835402-1 WG835402-2								
1,2,4-Trichlorobenzene	116		113		70-130	3		20
1,3,5-Trimethylbenzene	117		112		70-130	4		20
1,2,4-Trimethylbenzene	118		114		70-130	3		20
Diethyl ether	92		92		70-130	0		20
Diisopropyl Ether	110		109		70-130	1		20
Ethyl-Tert-Butyl-Ether	117		118		70-130	1		20
Tertiary-Amyl Methyl Ether	116		117		70-130	1		20
1,4-Dioxane	115		121		70-130	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	106		106		70-130
Toluene-d8	101		100		70-130
4-Bromofluorobenzene	104		105		70-130
Dibromofluoromethane	102		105		70-130



# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-04  
 Client ID: D-10 0-6 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 10/30/15 03:25  
 Analyst: PS  
 Percent Solids: 85%

Date Collected: 10/26/15 13:30  
 Date Received: 10/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/27/15 01:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	500		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	210	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	490		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	240		ug/kg	120	--	1
Benzo(a)pyrene	220		ug/kg	160	--	1
Benzo(b)fluoranthene	270		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

**Lab ID:** L1527338-04  
**Client ID:** D-10 0-6 FILL  
**Sample Location:** BOSTON, MA

**Date Collected:** 10/26/15 13:30  
**Date Received:** 10/26/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	240		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	420		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	440		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	420	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	940	--	1
Pentachlorophenol	ND		ug/kg	390	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	94		30-130
Phenol-d6	93		30-130
Nitrobenzene-d5	80		30-130
2-Fluorobiphenyl	90		30-130
2,4,6-Tribromophenol	105		30-130
4-Terphenyl-d14	89		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-06  
 Client ID: D-10 6-12 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 10/30/15 03:50  
 Analyst: PS  
 Percent Solids: 79%

Date Collected: 10/26/15 14:00  
 Date Received: 10/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/27/15 01:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	230	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

**Lab ID:** L1527338-06  
**Client ID:** D-10 6-12 FILL  
**Sample Location:** BOSTON, MA

**Date Collected:** 10/26/15 14:00  
**Date Received:** 10/26/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	120	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	420	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	92		30-130
Phenol-d6	89		30-130
Nitrobenzene-d5	73		30-130
2-Fluorobiphenyl	90		30-130
2,4,6-Tribromophenol	99		30-130
4-Terphenyl-d14	99		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-08  
 Client ID: D-10 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 10/30/15 04:15  
 Analyst: PS  
 Percent Solids: 79%

Date Collected: 10/26/15 14:30  
 Date Received: 10/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/27/15 01:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	170	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	130		ug/kg	130	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	230	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	130	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	130	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

**Lab ID:** L1527338-08  
**Client ID:** D-10 12-18 FILL  
**Sample Location:** BOSTON, MA

**Date Collected:** 10/26/15 14:30  
**Date Received:** 10/26/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	ND		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	--	1
Pyrene	140		ug/kg	130	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
Acetophenone	ND		ug/kg	210	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
Pentachlorophenol	ND		ug/kg	420	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	84		30-130
Phenol-d6	83		30-130
Nitrobenzene-d5	69		30-130
2-Fluorobiphenyl	80		30-130
2,4,6-Tribromophenol	101		30-130
4-Terphenyl-d14	84		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-10  
 Client ID: D-10 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 10/31/15 13:38  
 Analyst: PS  
 Percent Solids: 82%

Date Collected: 10/26/15 15:00  
 Date Received: 10/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/27/15 01:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

**Lab ID:** L1527338-10  
**Client ID:** D-10 18-24 FILL  
**Sample Location:** BOSTON, MA

**Date Collected:** 10/26/15 15:00  
**Date Received:** 10/26/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	--	1
Pyrene	120		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	440	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	980	--	1
Pentachlorophenol	ND		ug/kg	410	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	67		30-130
Phenol-d6	66		30-130
Nitrobenzene-d5	62		30-130
2-Fluorobiphenyl	71		30-130
2,4,6-Tribromophenol	91		30-130
4-Terphenyl-d14	77		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 10/28/15 11:06  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 10/27/15 01:21

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG834392-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	170	--
Hexachlorobenzene	ND		ug/kg	100	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	170	--
1,2-Dichlorobenzene	ND		ug/kg	170	--
1,3-Dichlorobenzene	ND		ug/kg	170	--
1,4-Dichlorobenzene	ND		ug/kg	170	--
3,3'-Dichlorobenzidine	ND		ug/kg	170	--
2,4-Dinitrotoluene	ND		ug/kg	170	--
2,6-Dinitrotoluene	ND		ug/kg	170	--
Azobenzene	ND		ug/kg	170	--
Fluoranthene	ND		ug/kg	100	--
4-Bromophenyl phenyl ether	ND		ug/kg	170	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	170	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	170	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	170	--
Butyl benzyl phthalate	ND		ug/kg	170	--
Di-n-butylphthalate	ND		ug/kg	170	--
Di-n-octylphthalate	ND		ug/kg	170	--
Diethyl phthalate	ND		ug/kg	170	--
Dimethyl phthalate	ND		ug/kg	170	--
Benzo(a)anthracene	ND		ug/kg	100	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 10/28/15 11:06  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 10/27/15 01:21

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG834392-1					
Benzo(b)fluoranthene	ND		ug/kg	100	--
Benzo(k)fluoranthene	ND		ug/kg	100	--
Chrysene	ND		ug/kg	100	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	100	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	170	--
Phenanthrene	ND		ug/kg	100	--
Dibenzo(a,h)anthracene	ND		ug/kg	100	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	100	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	170	--
Dibenzofuran	ND		ug/kg	170	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	170	--
2,4,6-Trichlorophenol	ND		ug/kg	100	--
2-Chlorophenol	ND		ug/kg	170	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	170	--
2-Nitrophenol	ND		ug/kg	360	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	800	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	170	--
2-Methylphenol	ND		ug/kg	170	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	170	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 10/28/15 11:06  
Analyst: PS

Extraction Method: EPA 3546  
Extraction Date: 10/27/15 01:21

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG834392-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	85		30-130
Phenol-d6	85		30-130
Nitrobenzene-d5	79		30-130
2-Fluorobiphenyl	83		30-130
2,4,6-Tribromophenol	92		30-130
4-Terphenyl-d14	91		30-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG834392-2 WG834392-3								
Acenaphthene	92		72		40-140	24		30
1,2,4-Trichlorobenzene	84		69		40-140	20		30
Hexachlorobenzene	100		73		40-140	31	Q	30
Bis(2-chloroethyl)ether	87		72		40-140	19		30
2-Chloronaphthalene	90		69		40-140	26		30
1,2-Dichlorobenzene	85		72		40-140	17		30
1,3-Dichlorobenzene	81		69		40-140	16		30
1,4-Dichlorobenzene	83		70		40-140	17		30
3,3'-Dichlorobenzidine	81		63		40-140	25		30
2,4-Dinitrotoluene	98		76		40-140	25		30
2,6-Dinitrotoluene	98		73		40-140	29		30
Azobenzene	89		71		40-140	23		30
Fluoranthene	97		75		40-140	26		30
4-Bromophenyl phenyl ether	103		75		40-140	31	Q	30
Bis(2-chloroisopropyl)ether	86		71		40-140	19		30
Bis(2-chloroethoxy)methane	90		75		40-140	18		30
Hexachlorobutadiene	87		68		40-140	25		30
Hexachloroethane	82		72		40-140	13		30
Isophorone	90		75		40-140	18		30
Naphthalene	83		68		40-140	20		30
Nitrobenzene	86		67		40-140	25		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG834392-2 WG834392-3								
Bis(2-Ethylhexyl)phthalate	117		86		40-140	31	Q	30
Butyl benzyl phthalate	101		77		40-140	27		30
Di-n-butylphthalate	105		79		40-140	28		30
Di-n-octylphthalate	109		87		40-140	22		30
Diethyl phthalate	96		73		40-140	27		30
Dimethyl phthalate	99		73		40-140	30		30
Benzo(a)anthracene	105		79		40-140	28		30
Benzo(a)pyrene	105		77		40-140	31	Q	30
Benzo(b)fluoranthene	110		84		40-140	27		30
Benzo(k)fluoranthene	104		76		40-140	31	Q	30
Chrysene	103		78		40-140	28		30
Acenaphthylene	90		69		40-140	26		30
Anthracene	108		80		40-140	30		30
Benzo(ghi)perylene	110		74		40-140	39	Q	30
Fluorene	90		71		40-140	24		30
Phenanthrene	99		75		40-140	28		30
Dibenzo(a,h)anthracene	105		77		40-140	31	Q	30
Indeno(1,2,3-cd)Pyrene	108		76		40-140	35	Q	30
Pyrene	96		74		40-140	26		30
Aniline	60		49		40-140	20		30
4-Chloroaniline	82		65		40-140	23		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D

**Lab Number:** L1527338

**Project Number:** 4426.9.1D

**Report Date:** 10/31/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG834392-2 WG834392-3								
Dibenzofuran	91		72		40-140	23		30
2-Methylnaphthalene	88		69		40-140	24		30
Acetophenone	98		81		40-140	19		30
2,4,6-Trichlorophenol	93		75		30-130	21		30
2-Chlorophenol	91		74		30-130	21		30
2,4-Dichlorophenol	95		72		30-130	28		30
2,4-Dimethylphenol	106		88		30-130	19		30
2-Nitrophenol	90		78		30-130	14		30
4-Nitrophenol	96		75		30-130	25		30
2,4-Dinitrophenol	44		36		30-130	20		30
Pentachlorophenol	104		78		30-130	29		30
Phenol	89		74		30-130	18		30
2-Methylphenol	95		76		30-130	22		30
3-Methylphenol/4-Methylphenol	92		74		30-130	22		30
2,4,5-Trichlorophenol	94		75		30-130	22		30

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG834392-2 WG834392-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
2-Fluorophenol	91		77		30-130
Phenol-d6	91		77		30-130
Nitrobenzene-d5	89		75		30-130
2-Fluorobiphenyl	91		72		30-130
2,4,6-Tribromophenol	114		84		30-130
4-Terphenyl-d14	100		76		30-130



# PETROLEUM HYDROCARBONS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-04  
 Client ID: D-10 0-6 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 10/28/15 10:45  
 Analyst: MW  
 Percent Solids: 85%

Date Collected: 10/26/15 13:30  
 Date Received: 10/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/27/15 04:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	77500		ug/kg	37800	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	87		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-06  
 Client ID: D-10 6-12 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 10/28/15 00:33  
 Analyst: MW  
 Percent Solids: 79%

Date Collected: 10/26/15 14:00  
 Date Received: 10/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/27/15 04:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
--	--	--	--	--	--	--

TPH	ND		ug/kg	41000	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	87		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-08  
 Client ID: D-10 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 10/27/15 22:46  
 Analyst: MW  
 Percent Solids: 79%

Date Collected: 10/26/15 14:30  
 Date Received: 10/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/27/15 04:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	40000	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	99		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-10  
 Client ID: D-10 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 10/28/15 01:08  
 Analyst: MW  
 Percent Solids: 82%

Date Collected: 10/26/15 15:00  
 Date Received: 10/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/27/15 04:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
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TPH	ND		ug/kg	39100	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	96		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8015C(M)  
**Analytical Date:** 10/27/15 23:21  
**Analyst:** MW

**Extraction Method:** EPA 3546  
**Extraction Date:** 10/27/15 04:29

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG834430-1					
TPH	ND		ug/kg	33100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	85		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG834430-2								
TPH	87		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	90				40-140

# PCBS



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-04  
 Client ID: D-10 0-6 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 10/28/15 17:55  
 Analyst: JT  
 Percent Solids: 85%

Date Collected: 10/26/15 13:30  
 Date Received: 10/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/28/15 03:48  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 10/28/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 10/28/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	38.1	--	1	A
Aroclor 1221	ND		ug/kg	38.1	--	1	A
Aroclor 1232	ND		ug/kg	38.1	--	1	A
Aroclor 1242	ND		ug/kg	38.1	--	1	A
Aroclor 1248	ND		ug/kg	38.1	--	1	A
Aroclor 1254	ND		ug/kg	38.1	--	1	A
Aroclor 1260	ND		ug/kg	38.1	--	1	A
Aroclor 1262	ND		ug/kg	38.1	--	1	A
Aroclor 1268	ND		ug/kg	38.1	--	1	A
PCBs, Total	ND		ug/kg	38.1	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		30-150	A
Decachlorobiphenyl	75		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	76		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-06  
 Client ID: D-10 6-12 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 10/28/15 18:12  
 Analyst: JT  
 Percent Solids: 79%

Date Collected: 10/26/15 14:00  
 Date Received: 10/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/28/15 03:48  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 10/28/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 10/28/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	41.6	--	1	A
Aroclor 1221	ND		ug/kg	41.6	--	1	A
Aroclor 1232	ND		ug/kg	41.6	--	1	A
Aroclor 1242	ND		ug/kg	41.6	--	1	A
Aroclor 1248	ND		ug/kg	41.6	--	1	A
Aroclor 1254	ND		ug/kg	41.6	--	1	A
Aroclor 1260	ND		ug/kg	41.6	--	1	A
Aroclor 1262	ND		ug/kg	41.6	--	1	A
Aroclor 1268	ND		ug/kg	41.6	--	1	A
PCBs, Total	ND		ug/kg	41.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	73		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-08  
 Client ID: D-10 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 10/28/15 19:49  
 Analyst: JT  
 Percent Solids: 79%

Date Collected: 10/26/15 14:30  
 Date Received: 10/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/28/15 03:48  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 10/28/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 10/28/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	40.3	--	1	A
Aroclor 1221	ND		ug/kg	40.3	--	1	A
Aroclor 1232	ND		ug/kg	40.3	--	1	A
Aroclor 1242	ND		ug/kg	40.3	--	1	A
Aroclor 1248	ND		ug/kg	40.3	--	1	A
Aroclor 1254	ND		ug/kg	40.3	--	1	A
Aroclor 1260	ND		ug/kg	40.3	--	1	A
Aroclor 1262	ND		ug/kg	40.3	--	1	A
Aroclor 1268	ND		ug/kg	40.3	--	1	A
PCBs, Total	ND		ug/kg	40.3	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		30-150	A
Decachlorobiphenyl	89		30-150	A
2,4,5,6-Tetrachloro-m-xylene	84		30-150	B
Decachlorobiphenyl	90		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-10  
 Client ID: D-10 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 10/28/15 20:06  
 Analyst: JT  
 Percent Solids: 82%

Date Collected: 10/26/15 15:00  
 Date Received: 10/26/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/28/15 03:48  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 10/28/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 10/28/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	40.4	--	1	A
Aroclor 1221	ND		ug/kg	40.4	--	1	A
Aroclor 1232	ND		ug/kg	40.4	--	1	A
Aroclor 1242	ND		ug/kg	40.4	--	1	A
Aroclor 1248	ND		ug/kg	40.4	--	1	A
Aroclor 1254	ND		ug/kg	40.4	--	1	A
Aroclor 1260	ND		ug/kg	40.4	--	1	A
Aroclor 1262	ND		ug/kg	40.4	--	1	A
Aroclor 1268	ND		ug/kg	40.4	--	1	A
PCBs, Total	ND		ug/kg	40.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	91		30-150	A
2,4,5,6-Tetrachloro-m-xylene	86		30-150	B
Decachlorobiphenyl	103		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**Method Blank Analysis  
 Batch Quality Control**

Analytical Method: 97,8082A  
 Analytical Date: 10/28/15 19:01  
 Analyst: JT

Extraction Method: EPA 3546  
 Extraction Date: 10/28/15 03:48  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 10/28/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 10/28/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG834845-1						
Aroclor 1016	ND		ug/kg	31.4	--	A
Aroclor 1221	ND		ug/kg	31.4	--	A
Aroclor 1232	ND		ug/kg	31.4	--	A
Aroclor 1242	ND		ug/kg	31.4	--	A
Aroclor 1248	ND		ug/kg	31.4	--	A
Aroclor 1254	ND		ug/kg	31.4	--	A
Aroclor 1260	ND		ug/kg	31.4	--	A
Aroclor 1262	ND		ug/kg	31.4	--	A
Aroclor 1268	ND		ug/kg	31.4	--	A
PCBs, Total	ND		ug/kg	31.4	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	84		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	85		30-150	B



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG834845-2 WG834845-3									
Aroclor 1016	103		100		40-140	3		30	A
Aroclor 1260	111		111		40-140	0		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	101		91		30-150	A
Decachlorobiphenyl	121		123		30-150	A
2,4,5,6-Tetrachloro-m-xylene	106		96		30-150	B
Decachlorobiphenyl	117		120		30-150	B

## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-04  
 Client ID: D-10 0-6 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 85%

Date Collected: 10/26/15 13:30  
 Date Received: 10/26/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Antimony, Total	ND		mg/kg	2.3	--	1	10/27/15 03:40	10/27/15 13:59	EPA 3050B	97,6010C	JH
Arsenic, Total	3.7		mg/kg	0.46	--	1	10/27/15 03:40	10/27/15 13:59	EPA 3050B	97,6010C	JH
Barium, Total	36		mg/kg	0.46	--	1	10/27/15 03:40	10/27/15 13:59	EPA 3050B	97,6010C	JH
Beryllium, Total	0.27		mg/kg	0.23	--	1	10/27/15 03:40	10/27/15 13:59	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.46	--	1	10/27/15 03:40	10/27/15 13:59	EPA 3050B	97,6010C	JH
Chromium, Total	14		mg/kg	0.46	--	1	10/27/15 03:40	10/27/15 13:59	EPA 3050B	97,6010C	JH
Lead, Total	35		mg/kg	2.3	--	1	10/27/15 03:40	10/27/15 13:59	EPA 3050B	97,6010C	JH
Mercury, Total	0.475		mg/kg	0.079	--	1	10/27/15 09:20	10/27/15 16:07	EPA 7471B	97,7471B	DB
Nickel, Total	12		mg/kg	1.2	--	1	10/27/15 03:40	10/27/15 13:59	EPA 3050B	97,6010C	JH
Selenium, Total	ND		mg/kg	2.3	--	1	10/27/15 03:40	10/27/15 13:59	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.46	--	1	10/27/15 03:40	10/27/15 13:59	EPA 3050B	97,6010C	JH
Thallium, Total	ND		mg/kg	2.3	--	1	10/27/15 03:40	10/27/15 13:59	EPA 3050B	97,6010C	JH
Vanadium, Total	17		mg/kg	0.46	--	1	10/27/15 03:40	10/27/15 13:59	EPA 3050B	97,6010C	JH
Zinc, Total	52		mg/kg	2.3	--	1	10/27/15 03:40	10/27/15 13:59	EPA 3050B	97,6010C	JH





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-06  
 Client ID: D-10 6-12 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 79%

Date Collected: 10/26/15 14:00  
 Date Received: 10/26/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Antimony, Total	ND		mg/kg	2.5	--	1	10/27/15 03:40	10/27/15 14:03	EPA 3050B	97,6010C	JH
Arsenic, Total	5.8		mg/kg	0.49	--	1	10/27/15 03:40	10/27/15 14:03	EPA 3050B	97,6010C	JH
Barium, Total	43		mg/kg	0.49	--	1	10/27/15 03:40	10/27/15 14:03	EPA 3050B	97,6010C	JH
Beryllium, Total	0.44		mg/kg	0.25	--	1	10/27/15 03:40	10/27/15 14:03	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.49	--	1	10/27/15 03:40	10/27/15 14:03	EPA 3050B	97,6010C	JH
Chromium, Total	26		mg/kg	0.49	--	1	10/27/15 03:40	10/27/15 14:03	EPA 3050B	97,6010C	JH
Lead, Total	3.5		mg/kg	2.5	--	1	10/27/15 03:40	10/27/15 14:03	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.081	--	1	10/27/15 09:20	10/27/15 16:08	EPA 7471B	97,7471B	DB
Nickel, Total	18		mg/kg	1.2	--	1	10/27/15 03:40	10/27/15 14:03	EPA 3050B	97,6010C	JH
Selenium, Total	ND		mg/kg	2.5	--	1	10/27/15 03:40	10/27/15 14:03	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.49	--	1	10/27/15 03:40	10/27/15 14:03	EPA 3050B	97,6010C	JH
Thallium, Total	ND		mg/kg	2.5	--	1	10/27/15 03:40	10/27/15 14:03	EPA 3050B	97,6010C	JH
Vanadium, Total	31		mg/kg	0.49	--	1	10/27/15 03:40	10/27/15 14:03	EPA 3050B	97,6010C	JH
Zinc, Total	44		mg/kg	2.5	--	1	10/27/15 03:40	10/27/15 14:03	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-08  
 Client ID: D-10 12-18 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 79%

Date Collected: 10/26/15 14:30  
 Date Received: 10/26/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Antimony, Total	ND		mg/kg	2.5	--	1	10/27/15 03:40	10/27/15 14:07	EPA 3050B	97,6010C	JH
Arsenic, Total	5.6		mg/kg	0.50	--	1	10/27/15 03:40	10/27/15 14:07	EPA 3050B	97,6010C	JH
Barium, Total	44		mg/kg	0.50	--	1	10/27/15 03:40	10/27/15 14:07	EPA 3050B	97,6010C	JH
Beryllium, Total	0.44		mg/kg	0.25	--	1	10/27/15 03:40	10/27/15 14:07	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.50	--	1	10/27/15 03:40	10/27/15 14:07	EPA 3050B	97,6010C	JH
Chromium, Total	26		mg/kg	0.50	--	1	10/27/15 03:40	10/27/15 14:07	EPA 3050B	97,6010C	JH
Lead, Total	3.8		mg/kg	2.5	--	1	10/27/15 03:40	10/27/15 14:07	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.087	--	1	10/27/15 09:20	10/27/15 16:10	EPA 7471B	97,7471B	DB
Nickel, Total	17		mg/kg	1.2	--	1	10/27/15 03:40	10/27/15 14:07	EPA 3050B	97,6010C	JH
Selenium, Total	ND		mg/kg	2.5	--	1	10/27/15 03:40	10/27/15 14:07	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.50	--	1	10/27/15 03:40	10/27/15 14:07	EPA 3050B	97,6010C	JH
Thallium, Total	ND		mg/kg	2.5	--	1	10/27/15 03:40	10/27/15 14:07	EPA 3050B	97,6010C	JH
Vanadium, Total	30		mg/kg	0.50	--	1	10/27/15 03:40	10/27/15 14:07	EPA 3050B	97,6010C	JH
Zinc, Total	41		mg/kg	2.5	--	1	10/27/15 03:40	10/27/15 14:07	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

Lab ID: L1527338-10  
 Client ID: D-10 18-24 FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 82%

Date Collected: 10/26/15 15:00  
 Date Received: 10/26/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Antimony, Total	ND		mg/kg	2.4	--	1	10/27/15 03:40	10/27/15 14:12	EPA 3050B	97,6010C	JH
Arsenic, Total	4.4		mg/kg	0.48	--	1	10/27/15 03:40	10/27/15 14:12	EPA 3050B	97,6010C	JH
Barium, Total	14		mg/kg	0.48	--	1	10/27/15 03:40	10/27/15 14:12	EPA 3050B	97,6010C	JH
Beryllium, Total	ND		mg/kg	0.24	--	1	10/27/15 03:40	10/27/15 14:12	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.48	--	1	10/27/15 03:40	10/27/15 14:12	EPA 3050B	97,6010C	JH
Chromium, Total	12		mg/kg	0.48	--	1	10/27/15 03:40	10/27/15 14:12	EPA 3050B	97,6010C	JH
Lead, Total	8.0		mg/kg	2.4	--	1	10/27/15 03:40	10/27/15 14:12	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.078	--	1	10/27/15 09:20	10/27/15 16:12	EPA 7471B	97,7471B	DB
Nickel, Total	8.7		mg/kg	1.2	--	1	10/27/15 03:40	10/27/15 14:12	EPA 3050B	97,6010C	JH
Selenium, Total	ND		mg/kg	2.4	--	1	10/27/15 03:40	10/27/15 14:12	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.48	--	1	10/27/15 03:40	10/27/15 14:12	EPA 3050B	97,6010C	JH
Thallium, Total	ND		mg/kg	2.4	--	1	10/27/15 03:40	10/27/15 14:12	EPA 3050B	97,6010C	JH
Vanadium, Total	17		mg/kg	0.48	--	1	10/27/15 03:40	10/27/15 14:12	EPA 3050B	97,6010C	JH
Zinc, Total	32		mg/kg	2.4	--	1	10/27/15 03:40	10/27/15 14:12	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG834398-1									
Mercury, Total	ND	mg/kg	0.083	--	1	10/27/15 09:20	10/27/15 14:46	97,7471B	DB

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG834401-1									
Antimony, Total	ND	mg/kg	2.0	--	1	10/27/15 03:40	10/27/15 10:07	97,6010C	JH
Arsenic, Total	ND	mg/kg	0.40	--	1	10/27/15 03:40	10/27/15 10:07	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	10/27/15 03:40	10/27/15 10:07	97,6010C	JH
Beryllium, Total	ND	mg/kg	0.20	--	1	10/27/15 03:40	10/27/15 10:07	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	10/27/15 03:40	10/27/15 10:07	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	10/27/15 03:40	10/27/15 10:07	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	10/27/15 03:40	10/27/15 10:07	97,6010C	JH
Nickel, Total	ND	mg/kg	1.0	--	1	10/27/15 03:40	10/27/15 10:07	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	10/27/15 03:40	10/27/15 10:07	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	10/27/15 03:40	10/27/15 10:07	97,6010C	JH
Thallium, Total	ND	mg/kg	2.0	--	1	10/27/15 03:40	10/27/15 10:07	97,6010C	JH
Vanadium, Total	ND	mg/kg	0.40	--	1	10/27/15 03:40	10/27/15 10:07	97,6010C	JH
Zinc, Total	ND	mg/kg	2.0	--	1	10/27/15 03:40	10/27/15 10:07	97,6010C	JH

### Prep Information

Digestion Method: EPA 3050B

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG834398-2 WG834398-3 SRM Lot Number: D088-540								
Mercury, Total	105		104		72-128	1		30
MCP Total Metals - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG834401-2 WG834401-3 SRM Lot Number: D088-540								
Antimony, Total	150		150		1-208	0		30
Arsenic, Total	96		88		79-121	9		30
Barium, Total	94		94		83-117	0		30
Beryllium, Total	96		92		83-117	4		30
Cadmium, Total	93		93		83-117	0		30
Chromium, Total	92		92		80-120	0		30
Lead, Total	90		89		81-117	1		30
Nickel, Total	94		94		83-117	0		30
Selenium, Total	97		91		78-122	6		30
Silver, Total	98		91		75-124	7		30
Thallium, Total	100		95		80-120	5		30
Vanadium, Total	96		92		78-122	4		30
Zinc, Total	97		92		82-118	5		30



# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

### SAMPLE RESULTS

**Lab ID:** L1527338-04  
**Client ID:** D-10 0-6 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 10/26/15 13:30  
**Date Received:** 10/26/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Soil  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	10/27/15 22:10	1,1030	TL



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

### SAMPLE RESULTS

**Lab ID:** L1527338-06  
**Client ID:** D-10 6-12 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 10/26/15 14:00  
**Date Received:** 10/26/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Soil  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	10/27/15 22:10	1,1030	TL





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

### SAMPLE RESULTS

**Lab ID:** L1527338-08  
**Client ID:** D-10 12-18 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 10/26/15 14:30  
**Date Received:** 10/26/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Clay  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	10/27/15 22:10	1,1030	TL



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

### SAMPLE RESULTS

**Lab ID:** L1527338-10  
**Client ID:** D-10 18-24 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 10/26/15 15:00  
**Date Received:** 10/26/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Soil  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	10/27/15 22:10	1,1030	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

## SAMPLE RESULTS

Lab ID: L1527338-03

Date Collected: 10/26/15 13:30

Client ID: D-10 S1 0-2

Date Received: 10/26/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.8		%	0.100	NA	1	-	10/27/15 13:42	30,2540G	RI



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

**Lab ID:** L1527338-04  
**Client ID:** D-10 0-6 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 10/26/15 13:30  
**Date Received:** 10/26/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	190		umhos/cm	10	--	1	-	10/27/15 19:10	1,9050A	AS
Solids, Total	84.8		%	0.100	NA	1	-	10/27/15 13:42	30,2540G	RI
pH (H)	8.4		SU	-	NA	1	-	10/27/15 03:24	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	10/27/15 19:18	10/27/15 22:00	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	10/27/15 19:18	10/27/15 21:52	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

## SAMPLE RESULTS

Lab ID: L1527338-05

Date Collected: 10/26/15 14:00

Client ID: D-10 S4 6-8

Date Received: 10/26/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.1		%	0.100	NA	1	-	10/27/15 13:42	30,2540G	RI



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

**Lab ID:** L1527338-06  
**Client ID:** D-10 6-12 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 10/26/15 14:00  
**Date Received:** 10/26/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	110		umhos/cm	10	--	1	-	10/27/15 19:10	1,9050A	AS
Solids, Total	79.1		%	0.100	NA	1	-	10/27/15 13:42	30,2540G	RI
pH (H)	8.0		SU	-	NA	1	-	10/27/15 03:24	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	10/27/15 19:18	10/27/15 22:01	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	10/27/15 19:18	10/27/15 21:52	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

## SAMPLE RESULTS

Lab ID: L1527338-07

Date Collected: 10/26/15 14:30

Client ID: D-10 S9 16-18

Date Received: 10/26/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.2		%	0.100	NA	1	-	10/27/15 13:42	30,2540G	RI



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

**Lab ID:** L1527338-08  
**Client ID:** D-10 12-18 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 10/26/15 14:30  
**Date Received:** 10/26/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	140		umhos/cm	10	--	1	-	10/27/15 19:10	1,9050A	AS
Solids, Total	79.2		%	0.100	NA	1	-	10/27/15 13:42	30,2540G	RI
pH (H)	8.5		SU	-	NA	1	-	10/27/15 03:24	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	10/27/15 19:18	10/27/15 22:01	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	10/27/15 19:18	10/27/15 21:52	1,7.3	TL





Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

## SAMPLE RESULTS

Lab ID: L1527338-09

Date Collected: 10/26/15 15:00

Client ID: D-10 S12 22-24

Date Received: 10/26/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.8		%	0.100	NA	1	-	10/27/15 13:42	30,2540G	RI



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

**SAMPLE RESULTS**

**Lab ID:** L1527338-10  
**Client ID:** D-10 18-24 FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 10/26/15 15:00  
**Date Received:** 10/26/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	640		umhos/cm	10	--	1	-	10/27/15 19:10	1,9050A	AS
Solids, Total	81.8		%	0.100	NA	1	-	10/27/15 13:42	30,2540G	RI
pH (H)	8.2		SU	-	NA	1	-	10/27/15 03:24	1,9045D	TA
Cyanide, Reactive	ND		mg/kg	10	--	1	10/27/15 19:18	10/27/15 22:01	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	10/27/15 19:18	10/27/15 21:52	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG834711-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	10/27/15 19:18	10/27/15 22:00	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 02,04,06,08,10 Batch: WG834714-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	10/27/15 19:18	10/27/15 21:51	1,7.3	TL

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** FAN PIER PARCEL D

**Lab Number:** L1527338

**Project Number:** 4426.9.1D

**Report Date:** 10/31/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG834403-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG834711-2								
Cyanide, Reactive	45		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG834714-2								
Sulfide, Reactive	79		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10 Batch: WG834717-1								
Specific Conductance	95		-		80-120	-		

## Lab Duplicate Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1527338

Report Date: 10/31/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10 QC Batch ID: WG834628-1 QC Sample: L1527338-02 Client ID: D24C 36-42 FILL						
Solids, Total	67.3	66.4	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09 QC Batch ID: WG835169-1 QC Sample: L1527338-01 Client ID: D24C S1 36-30						
Solids, Total	67.3	66.4	%	1		20

Project Name: FAN PIER PARCEL D

Lab Number: L1527338

Project Number: 4426.9.1D

Report Date: 10/31/15

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 10/26/2015 22:48

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1527338-01A	Vial MeOH preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)
L1527338-01B	Vial water preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)
L1527338-01C	Vial water preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)
L1527338-02A	Glass 500ml/16oz unpreserved	A	N/A	4.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),TS(7),MCP-AG-6010T-10(180),PH-9045(1),MCP(),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-PB-6010T-10(180)
L1527338-03A	Vial MeOH preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)
L1527338-03B	Vial water preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)
L1527338-03C	Vial water preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)
L1527338-04A	Glass 500ml/16oz unpreserved	A	N/A	4.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),TS(7),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),PH-9045(1),MCP(),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)
L1527338-05A	Vial MeOH preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1527338

Report Date: 10/31/15

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1527338-05B	Vial water preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)
L1527338-05C	Vial water preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)
L1527338-06A	Glass 500ml/16oz unpreserved	A	N/A	4.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),TS(7),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),PH-9045(1),MCP(),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)
L1527338-07A	Vial MeOH preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)
L1527338-07B	Vial water preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)
L1527338-07C	Vial water preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)
L1527338-08A	Glass 500ml/16oz unpreserved	A	N/A	4.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),TS(7),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),PH-9045(1),MCP(),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)
L1527338-09A	Vial MeOH preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)
L1527338-09B	Vial water preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)
L1527338-09C	Vial water preserved	A	N/A	4.3	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1527338

Report Date: 10/31/15

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1527338-10A	Glass 500ml/16oz unpreserved	A	N/A	4.3	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),TS(7),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),PH-9045(1),MCP(),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)

**Container Comments**

L1527338-02A

L1527338-04A

L1527338-06A

L1527338-08A

L1527338-10A

\*Values in parentheses indicate holding time in days





**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

## 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.
LCS D	- 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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
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).

**Report Format:** Data Usability Report



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

#### Data Qualifiers

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- 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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527338  
**Report Date:** 10/31/15

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## LIMITATION OF LIABILITIES

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

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



## Certification Information

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

### Westborough Facility

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide) (soil), Methyl methacrylate (soil), Azobenzene.

**EPA 8270D:** Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### 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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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

# CHAIN OF CUSTODY

PAGE 1 OF 2



Westborough, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

Mansfield, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

## Project Information

Project Name: Fan Pier Parcel D

Project Location: Boston, MA

Project #: 4426.9.1D

Project Manager: Ben Downing/Peter DeChaves

ALPHA Quote #: Fan Pier Pricing

## Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

## Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: 6178681420

Fax: 6178681423

Email: bdowning@mcphailgeo.com

These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT

\*Denotes obtain total solid sample from composite sample.

\*\*Minus VOCs

Date Rec'd in Lab: 10/26/15

ALPHA Job #: U27338

## Report Information Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

## Billing Information

Same as Client info PO #:

## Regulatory Requirements/Report Limits

State/Fed Program

Criteria

MA

RCS-1

## MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

## ANALYSIS

VOCs (8260)*	Soil Management Package IV**	Total Sb, Be, Ni, Ti, V, and Zn																	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE HANDLING  
 Filtration  
 Done  
 Not Needed  
 Lab to do  
 Preservation  
 Lab to do  
 (Please specify below)

TOTAL # BOTTLES

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	VOCs (8260)*	Soil Management Package IV**	Total Sb, Be, Ni, Ti, V, and Zn												
		Date	Time																	
27338-01	D24C S1 36-38	10/26/15	1130	S	Tmc	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
02	D24C 36-42 Fil		1130			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
03	D-10 S1 0-2		1330			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
04	D-10 0-6 Fil		1330			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
05	D-10 S4 6-8		1400			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
06	D-10 6-12 Fil		1400			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**IS YOUR PROJECT MA MCP or CT RCP?**

Relinquished By:	Date/Time	Received By:	Date/Time
<i>Ben Downing</i>	10/26/15 1545	<i>Michael...</i>	10/26/15 1515
<i>Michael...</i>	10/26/15 1830	<i>Michael...</i>	10/26/15 1830

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

FORM NO. 01-01(1)  
(rev. 30-JUL-07)

# CHAIN OF CUSTODY

PAGE 2 OF 2



Westborough, MA Mansfield, MA  
 TEL: 508-898-9220 TEL: 508-822-9300  
 FAX: 508-898-9193 FAX: 508-822-3288

### Project Information

Project Name: Fan Pier Parcel D

Project Location: Boston, MA

Project #: 4426.9.1D

Project Manager: Ben Downing/Peter DeChaves

ALPHA Quote #: Fan Pier Pricing

### Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

### Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: 6178681420

Fax: 6178681423

Email: bdowning@mcphailgeo.com

These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT

\*Denotes obtain total solid sample from composite sample.

\*\*Minus VOCs

Date Rec'd in Lab: 10/26/15

ALPHA Job #: C1527338

### Report Information Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

### Billing Information

Same as Client info PO #:

### Regulatory Requirements/Report Limits

State/Fed Program

Criteria

MA

RCS-1

### MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

### ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	VOCs (8260)*	Soil Management Package IV**	Total Sb, Be, Ni, Ti, V, and Zn											Sample Specific Comments	TOTAL # BOTTLES				
		Date	Time																					
77338	075D-10 S9 16-18	10/24/15	1430	J	Jmc	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
	08C-10 12-18 FILL		1430			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
	09 D-10 S12 22-24		1500			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
	10 D-10 18-24 FCU		1500			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	A	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	A	-	-	-	-	-	-	-	-	-

**IS YOUR PROJECT MA MCP or CT RCP?**

Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	10/26/15 1515	<i>[Signature]</i>	10/26/15 1515
<i>[Signature]</i>	10/26/15 1830	<i>[Signature]</i>	10/26/15 1830

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

FORM NO. 01-01(I)  
(rev. 30-JUL-07)

7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1527338

Instrument ID: Voal00.i      Calibration Date: 28-OCT-2015      Time: 20:20

Lab File ID: 1028N01      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.187	.1474	.1	-21	20	F
chloromethane	.20766	.23579	.1	14	20	
vinyl chloride	.21396	.18595	.1	-13	20	
bromomethane	.13517	.12278	.1	-9	20	
chloroethane	.12913	.11694	.1	-9	20	
trichlorofluoromethane	.24868	.26095	.1	5	20	
ethyl ether	.12265	.11341	.05	-8	20	
1,1,-dichloroethene	.15676	.15532	.1	-1	20	
carbon disulfide	.60511	.65233	.1	8	20	
methylene chloride	.20702	.22426	.1	8	20	
acetone	100	92.253	.1	-8	20	
trans-1,2-dichloroethene	.18303	.19591	.1	7	20	
methyl tert butyl ether	.59541	.70323	.1	18	20	
Diisopropyl Ether	.66228	.73044	.05	10	20	
1,1-dichloroethane	.37295	.44379	.2	19	20	
Ethyl-Tert-Butyl-Ether	.67262	.78514	.05	17	20	
cis-1,2-dichloroethene	.20399	.22893	.1	12	20	
2,2-dichloropropane	.27701	.35443	.05	28	20	F
bromochloromethane	.09003	.10055	.05	12	20	
chloroform	.35545	.42498	.2	20	20	
carbontetrachloride	.23543	.29507	.1	25	20	F
tetrahydrofuran	.07866	.0758	.05	-4	20	
1,1,1-trichloroethane	.28145	.34907	.1	24	20	F
2-butanone	.11217	.10142	.1	-10	20	
1,1-dichloropropene	.24964	.28069	.05	12	20	
benzene	.78204	.91257	.5	17	20	
Tertiary-Amyl Methyl Ether	.58171	.67213	.05	16	20	
1,2-dichloroethane	.29909	.36966	.1	24	20	F
trichloroethene	.19209	.22596	.2	18	20	F
dibromomethane	.12744	.14172	.05	11	20	
1,2-dichloropropane	.20856	.24995	.1	20	20	
bromodichloromethane	.27983	.35166	.2	26	20	F
1,4-dioxane	.00226	.0026	.05	15	20	F
cis-1,3-dichloropropene	.32828	.40366	.2	23	20	F
toluene	.70265	.79502	.4	13	20	
4-methyl-2-pentanone	.09341	.09522	.1	2	20	F
tetrachloroethene	.24354	.26181	.2	7	20	
trans-1,3-dichloropropene	.44951	.52642	.1	17	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1527338

Instrument ID: Voal00.i      Calibration Date: 28-OCT-2015      Time: 20:20

Lab File ID: 1028N01      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.22462	.24078	.1	7	20
chlorodibromomethane	.27986	.31506	.1	13	20
1,3-dichloropropane	.4689	.51442	.05	10	20
1,2-dibromoethane	.25199	.25458	.1	1	20
2-hexanone	.25182	.2018	.1	-20	20
chlorobenzene	.72245	.82805	.5	15	20
ethyl benzene	1.321	1.5173	.1	15	20
1,1,1,2-tetrachloroethane	.25141	.30505	.05	21	20
p/m xylene	.4784	.55188	.1	15	20
o xylene	.4574	.54045	.3	18	20
styrene	.80709	.97443	.3	21	20
bromoform	.39095	.40324	.1	3	20
isopropylbenzene	2.5014	2.6655	.1	7	20
bromobenzene	.58801	.63664	.05	8	20
n-propylbenzene	3.1176	3.4443	.05	10	20
1,1,2,2,-tetrachloroethane	.79665	.77292	.3	-3	20
2-chlorotoluene	1.9997	2.2107	.05	11	20
1,3,5-trimethylbenzene	2.1494	2.5103	.05	17	20
1,2,3-trichloropropane	.6668	.67293	.05	1	20
4-chlorotoluene	1.9179	2.2555	.05	18	20
tert-butylbenzene	1.6411	1.7921	.05	9	20
1,2,4-trimethylbenzene	2.1380	2.5335	.05	18	20
sec-butylbenzene	2.7032	2.9821	.05	10	20
p-isopropyltoluene	2.1196	2.3789	.05	12	20
1,3-dichlorobenzene	1.1313	1.2854	.6	14	20
1,4-dichlorobenzene	1.1563	1.3048	.5	13	20
n-butylbenzene	2.2066	2.5612	.05	16	20
1,2-dichlorobenzene	1.0944	1.1806	.4	8	20
1,2-dibromo-3-chloropropane	.11922	.10861	.05	-9	20
hexachlorobutadiene	.33792	.39898	.05	18	20
1,2,4-trichlorobenzene	.69367	.80603	.2	16	20
naphthalene	2.0354	2.0144	.05	-1	20
1,2,3-trichlorobenzene	.65938	.77741	.05	18	20
dibromofluoromethane	.24097	.24615	.05	2	30
1,2-dichloroethane-d4	.30902	.32675	.05	6	30
toluene-d8	1.3369	1.3505	.05	1	30
4-bromofluorobenzene	1.0311	1.0762	.05	4	30

FORM VII MCP-8260HLW-10





## ANALYTICAL REPORT

Lab Number:	L1527487
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL D
Project Number:	4426.9.1D
Report Date:	11/02/15

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).

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



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
<del>L1527487-01</del>	<del>D-13 S2 4-6</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>10/27/15 09:30</del>	<del>10/27/15</del>
<del>L1527487-02</del>	<del>D-13-0-6 FILL</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>10/27/15 09:30</del>	<del>10/27/15</del>
L1527487-03	D-13 S6 10-12	SOIL	BOSTON, MA	10/27/15 10:15	10/27/15
L1527487-04	D-13 6'-12' FILL	SOIL	BOSTON, MA	10/27/15 10:15	10/27/15
<del>L1527487-05</del>	<del>D-13 S8 14-16</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>10/27/15 11:00</del>	<del>10/27/15</del>
<del>L1527487-06</del>	<del>D-13 12'-18' FILL</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>10/27/15 11:00</del>	<del>10/27/15</del>
<del>L1527487-07</del>	<del>D-13 S12 22-24</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>10/27/15 13:00</del>	<del>10/27/15</del>
L1527487-08	D-13 18'-24' FILL	SOIL	BOSTON, MA	10/27/15 13:00	10/27/15
<del>L1527487-09</del>	<del>D-13 S13 24-26</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>10/27/15 13:45</del>	<del>10/27/15</del>
<del>L1527487-10</del>	<del>D-13 24-30 FILL</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>10/27/15 13:45</del>	<del>10/27/15</del>
L1527487-11	D-13 S17 34-36	SOIL	BOSTON, MA	10/27/15 15:00	10/27/15
<del>L1527487-12</del>	<del>D-13 30-36 FILL</del>	<del>SOIL</del>	<del>BOSTON, MA</del>	<del>10/27/15 15:00</del>	<del>10/27/15</del>

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

### MADEP MCP Response Action Analytical Report Certification

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

### 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.

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**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

The samples submitted for Volatile Organics were received without raw soil for the Total Solids analysis. The Total Solids results from the corresponding composite samples were utilized in the dry weight calculation of the Volatile Organics data.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

##### Volatile Organics

In reference to question G:

L1527487-05, -07, and -11: One or more of the target analytes did not achieve the requested CAM reporting limits.


In reference to question H:

The initial calibration, associated with L1527487-01, -03, -05, -07, -09, and -11 did not meet the method required minimum response factor on the lowest calibration standard for 4-methyl-2-pentanone (0.07493) and 1,4-dioxane (0.00162), as well as the average response factor for trichloroethene, 4-methyl-2-pentanone, and 1,4-dioxane. The initial calibration verification is outside acceptance criteria for tetrahydrofuran (65%), but within overall method criteria.

The continuing calibration standards, associated with L1527487-01, -03, -05, -07, -09, and -11, are outside the acceptance criteria for several compounds; however, they are within overall method allowances. Copies of the continuing calibration standards are included as an addendum to this report.

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

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 11/02/15

# ORGANICS

# VOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**SAMPLE RESULTS**

Lab ID: L1527487-03  
 Client ID: D-13 S6 10-12  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 10/29/15 17:58  
 Analyst: BN  
 Percent Solids: 85%

Date Collected: 10/27/15 10:15  
 Date Received: 10/27/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	26	--	1
1,1-Dichloroethane	ND		ug/kg	3.8	--	1
Chloroform	ND		ug/kg	3.8	--	1
Carbon tetrachloride	ND		ug/kg	2.6	--	1
1,2-Dichloropropane	ND		ug/kg	9.0	--	1
Dibromochloromethane	ND		ug/kg	2.6	--	1
1,1,2-Trichloroethane	ND		ug/kg	3.8	--	1
Tetrachloroethene	ND		ug/kg	2.6	--	1
Chlorobenzene	ND		ug/kg	2.6	--	1
Trichlorofluoromethane	ND		ug/kg	10	--	1
1,2-Dichloroethane	ND		ug/kg	2.6	--	1
1,1,1-Trichloroethane	ND		ug/kg	2.6	--	1
Bromodichloromethane	ND		ug/kg	2.6	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.6	--	1
cis-1,3-Dichloropropene	ND		ug/kg	2.6	--	1
1,3-Dichloropropene, Total	ND		ug/kg	2.6	--	1
1,1-Dichloropropene	ND		ug/kg	10	--	1
Bromoform	ND		ug/kg	10	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	2.6	--	1
Benzene	ND		ug/kg	2.6	--	1
Toluene	ND		ug/kg	3.8	--	1
Ethylbenzene	ND		ug/kg	2.6	--	1
Chloromethane	ND		ug/kg	10	--	1
Bromomethane	ND		ug/kg	5.1	--	1
Vinyl chloride	ND		ug/kg	5.1	--	1
Chloroethane	ND		ug/kg	5.1	--	1
1,1-Dichloroethene	ND		ug/kg	2.6	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.8	--	1
Trichloroethene	ND		ug/kg	2.6	--	1
1,2-Dichlorobenzene	ND		ug/kg	10	--	1



Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

## SAMPLE RESULTS

Lab ID: L1527487-03

Date Collected: 10/27/15 10:15

Client ID: D-13 S6 10-12

Date Received: 10/27/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	10	--	1
1,4-Dichlorobenzene	ND		ug/kg	10	--	1
Methyl tert butyl ether	ND		ug/kg	5.1	--	1
p/m-Xylene	ND		ug/kg	5.1	--	1
o-Xylene	ND		ug/kg	5.1	--	1
Xylenes, Total	ND		ug/kg	5.1	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.6	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.6	--	1
Dibromomethane	ND		ug/kg	10	--	1
1,2,3-Trichloropropane	ND		ug/kg	10	--	1
Styrene	ND		ug/kg	5.1	--	1
Dichlorodifluoromethane	ND		ug/kg	26	--	1
Acetone	ND		ug/kg	92	--	1
Carbon disulfide	ND		ug/kg	10	--	1
Methyl ethyl ketone	ND		ug/kg	26	--	1
Methyl isobutyl ketone	ND		ug/kg	26	--	1
2-Hexanone	ND		ug/kg	26	--	1
Bromochloromethane	ND		ug/kg	10	--	1
Tetrahydrofuran	ND		ug/kg	10	--	1
2,2-Dichloropropane	ND		ug/kg	13	--	1
1,2-Dibromoethane	ND		ug/kg	10	--	1
1,3-Dichloropropane	ND		ug/kg	10	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	2.6	--	1
Bromobenzene	ND		ug/kg	13	--	1
n-Butylbenzene	ND		ug/kg	2.6	--	1
sec-Butylbenzene	ND		ug/kg	2.6	--	1
tert-Butylbenzene	ND		ug/kg	10	--	1
o-Chlorotoluene	ND		ug/kg	10	--	1
p-Chlorotoluene	ND		ug/kg	10	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	10	--	1
Hexachlorobutadiene	ND		ug/kg	10	--	1
Isopropylbenzene	ND		ug/kg	2.6	--	1
p-Isopropyltoluene	ND		ug/kg	2.6	--	1
Naphthalene	ND		ug/kg	10	--	1
n-Propylbenzene	ND		ug/kg	2.6	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	10	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	10	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	10	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	10	--	1

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**SAMPLE RESULTS**

Lab ID: L1527487-03  
 Client ID: D-13 S6 10-12  
 Sample Location: BOSTON, MA

Date Collected: 10/27/15 10:15  
 Date Received: 10/27/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## MCP Volatile Organics by 8260/5035 - Westborough Lab

Diethyl ether	ND		ug/kg	13	--	1
Diisopropyl Ether	ND		ug/kg	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	10	--	1
1,4-Dioxane	ND		ug/kg	100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	102		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 10/30/15 09:16  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,09 Batch: WG835837-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 10/30/15 09:16  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,09 Batch: WG835837-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 10/30/15 09:16  
**Analyst:** MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01,09 Batch: WG835837-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	103		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 10/29/15 10:29  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 07,11 Batch: WG835860-3					
Methylene chloride	ND		ug/kg	500	--
1,1-Dichloroethane	ND		ug/kg	75	--
Chloroform	ND		ug/kg	75	--
Carbon tetrachloride	ND		ug/kg	50	--
1,2-Dichloropropane	ND		ug/kg	180	--
Dibromochloromethane	ND		ug/kg	50	--
1,1,2-Trichloroethane	ND		ug/kg	75	--
Tetrachloroethene	ND		ug/kg	50	--
Chlorobenzene	ND		ug/kg	50	--
Trichlorofluoromethane	ND		ug/kg	200	--
1,2-Dichloroethane	ND		ug/kg	50	--
1,1,1-Trichloroethane	ND		ug/kg	50	--
Bromodichloromethane	ND		ug/kg	50	--
trans-1,3-Dichloropropene	ND		ug/kg	50	--
cis-1,3-Dichloropropene	ND		ug/kg	50	--
1,3-Dichloropropene, Total	ND		ug/kg	50	--
1,1-Dichloropropene	ND		ug/kg	200	--
Bromoform	ND		ug/kg	200	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	50	--
Benzene	ND		ug/kg	50	--
Toluene	ND		ug/kg	75	--
Ethylbenzene	ND		ug/kg	50	--
Chloromethane	ND		ug/kg	200	--
Bromomethane	ND		ug/kg	100	--
Vinyl chloride	ND		ug/kg	100	--
Chloroethane	ND		ug/kg	100	--
1,1-Dichloroethene	ND		ug/kg	50	--
trans-1,2-Dichloroethene	ND		ug/kg	75	--
Trichloroethene	ND		ug/kg	50	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
 Analytical Date: 10/29/15 10:29  
 Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 07,11 Batch: WG835860-3					
1,2-Dichlorobenzene	ND		ug/kg	200	--
1,3-Dichlorobenzene	ND		ug/kg	200	--
1,4-Dichlorobenzene	ND		ug/kg	200	--
Methyl tert butyl ether	ND		ug/kg	100	--
p/m-Xylene	ND		ug/kg	100	--
o-Xylene	ND		ug/kg	100	--
Xylenes, Total	ND		ug/kg	100	--
cis-1,2-Dichloroethene	ND		ug/kg	50	--
1,2-Dichloroethene, Total	ND		ug/kg	50	--
Dibromomethane	ND		ug/kg	200	--
1,2,3-Trichloropropane	ND		ug/kg	200	--
Styrene	ND		ug/kg	100	--
Dichlorodifluoromethane	ND		ug/kg	500	--
Acetone	ND		ug/kg	1800	--
Carbon disulfide	ND		ug/kg	200	--
Methyl ethyl ketone	ND		ug/kg	500	--
Methyl isobutyl ketone	ND		ug/kg	500	--
2-Hexanone	ND		ug/kg	500	--
Bromochloromethane	ND		ug/kg	200	--
Tetrahydrofuran	ND		ug/kg	200	--
2,2-Dichloropropane	ND		ug/kg	250	--
1,2-Dibromoethane	ND		ug/kg	200	--
1,3-Dichloropropane	ND		ug/kg	200	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	50	--
Bromobenzene	ND		ug/kg	250	--
n-Butylbenzene	ND		ug/kg	50	--
sec-Butylbenzene	ND		ug/kg	50	--
tert-Butylbenzene	ND		ug/kg	200	--
o-Chlorotoluene	ND		ug/kg	200	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 10/29/15 10:29  
**Analyst:** BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 07,11 Batch: WG835860-3					
p-Chlorotoluene	ND		ug/kg	200	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	200	--
Hexachlorobutadiene	ND		ug/kg	200	--
Isopropylbenzene	ND		ug/kg	50	--
p-Isopropyltoluene	ND		ug/kg	50	--
Naphthalene	ND		ug/kg	200	--
n-Propylbenzene	ND		ug/kg	50	--
1,2,3-Trichlorobenzene	ND		ug/kg	200	--
1,2,4-Trichlorobenzene	ND		ug/kg	200	--
1,3,5-Trimethylbenzene	ND		ug/kg	200	--
1,2,4-Trimethylbenzene	ND		ug/kg	200	--
Diethyl ether	ND		ug/kg	250	--
Diisopropyl Ether	ND		ug/kg	200	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	200	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	200	--
1,4-Dioxane	ND		ug/kg	5000	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	106		70-130



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 10/29/15 10:29  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 03 Batch: WG835862-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 10/29/15 10:29  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 03 Batch: WG835862-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 10/29/15 10:29  
**Analyst:** BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 03 Batch: WG835862-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	106		70-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 10/30/15 09:16  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 05 Batch: WG836208-3					
Methylene chloride	ND		ug/kg	500	--
1,1-Dichloroethane	ND		ug/kg	75	--
Chloroform	ND		ug/kg	75	--
Carbon tetrachloride	ND		ug/kg	50	--
1,2-Dichloropropane	ND		ug/kg	180	--
Dibromochloromethane	ND		ug/kg	50	--
1,1,2-Trichloroethane	ND		ug/kg	75	--
Tetrachloroethene	ND		ug/kg	50	--
Chlorobenzene	ND		ug/kg	50	--
Trichlorofluoromethane	ND		ug/kg	200	--
1,2-Dichloroethane	ND		ug/kg	50	--
1,1,1-Trichloroethane	ND		ug/kg	50	--
Bromodichloromethane	ND		ug/kg	50	--
trans-1,3-Dichloropropene	ND		ug/kg	50	--
cis-1,3-Dichloropropene	ND		ug/kg	50	--
1,3-Dichloropropene, Total	ND		ug/kg	50	--
1,1-Dichloropropene	ND		ug/kg	200	--
Bromoform	ND		ug/kg	200	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	50	--
Benzene	ND		ug/kg	50	--
Toluene	ND		ug/kg	75	--
Ethylbenzene	ND		ug/kg	50	--
Chloromethane	ND		ug/kg	200	--
Bromomethane	ND		ug/kg	100	--
Vinyl chloride	ND		ug/kg	100	--
Chloroethane	ND		ug/kg	100	--
1,1-Dichloroethene	ND		ug/kg	50	--
trans-1,2-Dichloroethene	ND		ug/kg	75	--
Trichloroethene	ND		ug/kg	50	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 10/30/15 09:16  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 05 Batch: WG836208-3					
1,2-Dichlorobenzene	ND		ug/kg	200	--
1,3-Dichlorobenzene	ND		ug/kg	200	--
1,4-Dichlorobenzene	ND		ug/kg	200	--
Methyl tert butyl ether	ND		ug/kg	100	--
p/m-Xylene	ND		ug/kg	100	--
o-Xylene	ND		ug/kg	100	--
Xylenes, Total	ND		ug/kg	100	--
cis-1,2-Dichloroethene	ND		ug/kg	50	--
1,2-Dichloroethene, Total	ND		ug/kg	50	--
Dibromomethane	ND		ug/kg	200	--
1,2,3-Trichloropropane	ND		ug/kg	200	--
Styrene	ND		ug/kg	100	--
Dichlorodifluoromethane	ND		ug/kg	500	--
Acetone	ND		ug/kg	1800	--
Carbon disulfide	ND		ug/kg	200	--
Methyl ethyl ketone	ND		ug/kg	500	--
Methyl isobutyl ketone	ND		ug/kg	500	--
2-Hexanone	ND		ug/kg	500	--
Bromochloromethane	ND		ug/kg	200	--
Tetrahydrofuran	ND		ug/kg	200	--
2,2-Dichloropropane	ND		ug/kg	250	--
1,2-Dibromoethane	ND		ug/kg	200	--
1,3-Dichloropropane	ND		ug/kg	200	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	50	--
Bromobenzene	ND		ug/kg	250	--
n-Butylbenzene	ND		ug/kg	50	--
sec-Butylbenzene	ND		ug/kg	50	--
tert-Butylbenzene	ND		ug/kg	200	--
o-Chlorotoluene	ND		ug/kg	200	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8260C  
**Analytical Date:** 10/30/15 09:16  
**Analyst:** MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 05 Batch: WG836208-3					
p-Chlorotoluene	ND		ug/kg	200	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	200	--
Hexachlorobutadiene	ND		ug/kg	200	--
Isopropylbenzene	ND		ug/kg	50	--
p-Isopropyltoluene	ND		ug/kg	50	--
Naphthalene	ND		ug/kg	200	--
n-Propylbenzene	ND		ug/kg	50	--
1,2,3-Trichlorobenzene	ND		ug/kg	200	--
1,2,4-Trichlorobenzene	ND		ug/kg	200	--
1,3,5-Trimethylbenzene	ND		ug/kg	200	--
1,2,4-Trimethylbenzene	ND		ug/kg	200	--
Diethyl ether	ND		ug/kg	250	--
Diisopropyl Ether	ND		ug/kg	200	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	200	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	200	--
1,4-Dioxane	ND		ug/kg	5000	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	103		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,09 Batch: WG835837-1 WG835837-2								
Methylene chloride	108		111		70-130	3		20
1,1-Dichloroethane	112		117		70-130	4		20
Chloroform	118		121		70-130	3		20
Carbon tetrachloride	129		130		70-130	1		20
1,2-Dichloropropane	115		116		70-130	1		20
Dibromochloromethane	110		114		70-130	4		20
1,1,2-Trichloroethane	102		107		70-130	5		20
Tetrachloroethene	103		108		70-130	5		20
Chlorobenzene	111		113		70-130	2		20
Trichlorofluoromethane	114		119		70-130	4		20
1,2-Dichloroethane	118		119		70-130	1		20
1,1,1-Trichloroethane	123		124		70-130	1		20
Bromodichloromethane	120		123		70-130	2		20
trans-1,3-Dichloropropene	113		116		70-130	3		20
cis-1,3-Dichloropropene	120		122		70-130	2		20
1,1-Dichloropropene	110		115		70-130	4		20
Bromoform	102		103		70-130	1		20
1,1,2,2-Tetrachloroethane	95		96		70-130	1		20
Benzene	113		115		70-130	2		20
Toluene	109		113		70-130	4		20
Ethylbenzene	109		114		70-130	4		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,09 Batch: WG835837-1 WG835837-2								
Chloromethane	110		113		70-130	3		20
Bromomethane	96		96		70-130	0		20
Vinyl chloride	86		90		70-130	5		20
Chloroethane	88		92		70-130	4		20
1,1-Dichloroethene	100		104		70-130	4		20
trans-1,2-Dichloroethene	106		111		70-130	5		20
Trichloroethene	114		115		70-130	1		20
1,2-Dichlorobenzene	107		107		70-130	0		20
1,3-Dichlorobenzene	110		110		70-130	0		20
1,4-Dichlorobenzene	109		111		70-130	2		20
Methyl tert butyl ether	118		122		70-130	3		20
p/m-Xylene	110		114		70-130	4		20
o-Xylene	112		116		70-130	4		20
cis-1,2-Dichloroethene	110		113		70-130	3		20
Dibromomethane	112		113		70-130	1		20
1,2,3-Trichloropropane	101		96		70-130	5		20
Styrene	115		118		70-130	3		20
Dichlorodifluoromethane	90		97		70-130	7		20
Acetone	89		84		70-130	6		20
Carbon disulfide	134	Q	146	Q	70-130	9		20
Methyl ethyl ketone	89		94		70-130	5		20



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,09 Batch: WG835837-1 WG835837-2								
Methyl isobutyl ketone	101		100		70-130	1		20
2-Hexanone	78		80		70-130	3		20
Bromochloromethane	110		111		70-130	1		20
Tetrahydrofuran	90		93		70-130	3		20
2,2-Dichloropropane	125		127		70-130	2		20
1,2-Dibromoethane	100		103		70-130	3		20
1,3-Dichloropropane	106		110		70-130	4		20
1,1,1,2-Tetrachloroethane	116		120		70-130	3		20
Bromobenzene	106		108		70-130	2		20
n-Butylbenzene	115		115		70-130	0		20
sec-Butylbenzene	108		110		70-130	2		20
tert-Butylbenzene	108		109		70-130	1		20
o-Chlorotoluene	108		109		70-130	1		20
p-Chlorotoluene	117		118		70-130	1		20
1,2-Dibromo-3-chloropropane	89		91		70-130	2		20
Hexachlorobutadiene	119		124		70-130	4		20
Isopropylbenzene	106		108		70-130	2		20
p-Isopropyltoluene	110		112		70-130	2		20
Naphthalene	96		99		70-130	3		20
n-Propylbenzene	109		109		70-130	0		20
1,2,3-Trichlorobenzene	111		115		70-130	4		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01,09 Batch: WG835837-1 WG835837-2								
1,2,4-Trichlorobenzene	114		119		70-130	4		20
1,3,5-Trimethylbenzene	115		116		70-130	1		20
1,2,4-Trimethylbenzene	115		117		70-130	2		20
Diethyl ether	92		95		70-130	3		20
Diisopropyl Ether	106		110		70-130	4		20
Ethyl-Tert-Butyl-Ether	114		118		70-130	3		20
Tertiary-Amyl Methyl Ether	113		117		70-130	3		20
1,4-Dioxane	117		115		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		104		70-130
Toluene-d8	99		102		70-130
4-Bromofluorobenzene	104		103		70-130
Dibromofluoromethane	103		103		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 07,11 Batch: WG835860-1 WG835860-2								
Methylene chloride	109		108		70-130	1		20
1,1-Dichloroethane	120		115		70-130	4		20
Chloroform	120		117		70-130	3		20
Carbon tetrachloride	138	Q	126		70-130	9		20
1,2-Dichloropropane	118		116		70-130	2		20
Dibromochloromethane	115		115		70-130	0		20
1,1,2-Trichloroethane	108		107		70-130	1		20
Tetrachloroethene	113		101		70-130	11		20
Chlorobenzene	114		110		70-130	4		20
Trichlorofluoromethane	125		113		70-130	10		20
1,2-Dichloroethane	122		123		70-130	1		20
1,1,1-Trichloroethane	130		120		70-130	8		20
Bromodichloromethane	122		120		70-130	2		20
trans-1,3-Dichloropropene	118		117		70-130	1		20
cis-1,3-Dichloropropene	120		121		70-130	1		20
1,1-Dichloropropene	117		110		70-130	6		20
Bromoform	102		104		70-130	2		20
1,1,2,2-Tetrachloroethane	96		99		70-130	3		20
Benzene	117		112		70-130	4		20
Toluene	113		108		70-130	5		20
Ethylbenzene	115		109		70-130	5		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 07,11 Batch: WG835860-1 WG835860-2								
Chloromethane	116		109		70-130	6		20
Bromomethane	93		90		70-130	3		20
Vinyl chloride	94		84		70-130	11		20
Chloroethane	92		86		70-130	7		20
1,1-Dichloroethene	108		98		70-130	10		20
trans-1,2-Dichloroethene	111		102		70-130	8		20
Trichloroethene	118		110		70-130	7		20
1,2-Dichlorobenzene	107		105		70-130	2		20
1,3-Dichlorobenzene	112		107		70-130	5		20
1,4-Dichlorobenzene	110		108		70-130	2		20
Methyl tert butyl ether	119		123		70-130	3		20
p/m-Xylene	116		109		70-130	6		20
o-Xylene	117		112		70-130	4		20
cis-1,2-Dichloroethene	112		110		70-130	2		20
Dibromomethane	112		114		70-130	2		20
1,2,3-Trichloropropane	103		105		70-130	2		20
Styrene	120		116		70-130	3		20
Dichlorodifluoromethane	106		89		70-130	17		20
Acetone	94		100		70-130	6		20
Carbon disulfide	113		103		70-130	9		20
Methyl ethyl ketone	97		103		70-130	6		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 07,11 Batch: WG835860-1 WG835860-2								
Methyl isobutyl ketone	101		110		70-130	9		20
2-Hexanone	83		90		70-130	8		20
Bromochloromethane	109		110		70-130	1		20
Tetrahydrofuran	94		104		70-130	10		20
2,2-Dichloropropane	130		122		70-130	6		20
1,2-Dibromoethane	102		103		70-130	1		20
1,3-Dichloropropane	109		111		70-130	2		20
1,1,1,2-Tetrachloroethane	120		119		70-130	1		20
Bromobenzene	107		104		70-130	3		20
n-Butylbenzene	118		109		70-130	8		20
sec-Butylbenzene	112		103		70-130	8		20
tert-Butylbenzene	111		103		70-130	7		20
o-Chlorotoluene	110		114		70-130	4		20
p-Chlorotoluene	117		112		70-130	4		20
1,2-Dibromo-3-chloropropane	95		96		70-130	1		20
Hexachlorobutadiene	123		115		70-130	7		20
Isopropylbenzene	109		100		70-130	9		20
p-Isopropyltoluene	113		105		70-130	7		20
Naphthalene	101		104		70-130	3		20
n-Propylbenzene	112		103		70-130	8		20
1,2,3-Trichlorobenzene	117		114		70-130	3		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 07,11 Batch: WG835860-1 WG835860-2								
1,2,4-Trichlorobenzene	116		114		70-130	2		20
1,3,5-Trimethylbenzene	116		109		70-130	6		20
1,2,4-Trimethylbenzene	117		111		70-130	5		20
Diethyl ether	92		104		70-130	12		20
Diisopropyl Ether	109		108		70-130	1		20
Ethyl-Tert-Butyl-Ether	116		117		70-130	1		20
Tertiary-Amyl Methyl Ether	115		117		70-130	2		20
1,4-Dioxane	127		142	Q	70-130	11		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108		109		70-130
Toluene-d8	102		101		70-130
4-Bromofluorobenzene	104		102		70-130
Dibromofluoromethane	107		106		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG835862-1 WG835862-2								
Methylene chloride	109		108		70-130	1		20
1,1-Dichloroethane	120		115		70-130	4		20
Chloroform	120		117		70-130	3		20
Carbon tetrachloride	138	Q	126		70-130	9		20
1,2-Dichloropropane	118		116		70-130	2		20
Dibromochloromethane	115		115		70-130	0		20
1,1,2-Trichloroethane	108		107		70-130	1		20
Tetrachloroethene	113		101		70-130	11		20
Chlorobenzene	114		110		70-130	4		20
Trichlorofluoromethane	125		113		70-130	10		20
1,2-Dichloroethane	122		123		70-130	1		20
1,1,1-Trichloroethane	130		120		70-130	8		20
Bromodichloromethane	122		120		70-130	2		20
trans-1,3-Dichloropropene	118		117		70-130	1		20
cis-1,3-Dichloropropene	120		121		70-130	1		20
1,1-Dichloropropene	117		110		70-130	6		20
Bromoform	102		104		70-130	2		20
1,1,2,2-Tetrachloroethane	96		99		70-130	3		20
Benzene	117		112		70-130	4		20
Toluene	113		108		70-130	5		20
Ethylbenzene	115		109		70-130	5		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG835862-1 WG835862-2								
Chloromethane	116		109		70-130	6		20
Bromomethane	93		90		70-130	3		20
Vinyl chloride	94		84		70-130	11		20
Chloroethane	92		86		70-130	7		20
1,1-Dichloroethene	108		98		70-130	10		20
trans-1,2-Dichloroethene	111		102		70-130	8		20
Trichloroethene	118		110		70-130	7		20
1,2-Dichlorobenzene	107		105		70-130	2		20
1,3-Dichlorobenzene	112		107		70-130	5		20
1,4-Dichlorobenzene	110		108		70-130	2		20
Methyl tert butyl ether	119		123		70-130	3		20
p/m-Xylene	116		109		70-130	6		20
o-Xylene	117		112		70-130	4		20
cis-1,2-Dichloroethene	112		110		70-130	2		20
Dibromomethane	112		114		70-130	2		20
1,2,3-Trichloropropane	103		105		70-130	2		20
Styrene	120		116		70-130	3		20
Dichlorodifluoromethane	106		89		70-130	17		20
Acetone	94		100		70-130	6		20
Carbon disulfide	113		103		70-130	9		20
Methyl ethyl ketone	97		103		70-130	6		20



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG835862-1 WG835862-2								
Methyl isobutyl ketone	101		110		70-130	9		20
2-Hexanone	83		90		70-130	8		20
Bromochloromethane	109		110		70-130	1		20
Tetrahydrofuran	94		104		70-130	10		20
2,2-Dichloropropane	130		122		70-130	6		20
1,2-Dibromoethane	102		103		70-130	1		20
1,3-Dichloropropane	109		111		70-130	2		20
1,1,1,2-Tetrachloroethane	120		119		70-130	1		20
Bromobenzene	107		104		70-130	3		20
n-Butylbenzene	118		109		70-130	8		20
sec-Butylbenzene	112		103		70-130	8		20
tert-Butylbenzene	111		103		70-130	7		20
o-Chlorotoluene	110		114		70-130	4		20
p-Chlorotoluene	117		112		70-130	4		20
1,2-Dibromo-3-chloropropane	95		96		70-130	1		20
Hexachlorobutadiene	123		115		70-130	7		20
Isopropylbenzene	109		100		70-130	9		20
p-Isopropyltoluene	113		105		70-130	7		20
Naphthalene	101		104		70-130	3		20
n-Propylbenzene	112		103		70-130	8		20
1,2,3-Trichlorobenzene	117		114		70-130	3		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG835862-1 WG835862-2								
1,2,4-Trichlorobenzene	116		114		70-130	2		20
1,3,5-Trimethylbenzene	116		109		70-130	6		20
1,2,4-Trimethylbenzene	117		111		70-130	5		20
Diethyl ether	92		104		70-130	12		20
Diisopropyl Ether	109		108		70-130	1		20
Ethyl-Tert-Butyl-Ether	116		117		70-130	1		20
Tertiary-Amyl Methyl Ether	115		117		70-130	2		20
1,4-Dioxane	127		142	Q	70-130	11		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108		109		70-130
Toluene-d8	102		101		70-130
4-Bromofluorobenzene	104		102		70-130
Dibromofluoromethane	107		106		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 05 Batch: WG836208-1 WG836208-2								
Methylene chloride	108		111		70-130	3		20
1,1-Dichloroethane	112		117		70-130	4		20
Chloroform	118		121		70-130	3		20
Carbon tetrachloride	129		130		70-130	1		20
1,2-Dichloropropane	115		116		70-130	1		20
Dibromochloromethane	110		114		70-130	4		20
1,1,2-Trichloroethane	102		107		70-130	5		20
Tetrachloroethene	103		108		70-130	5		20
Chlorobenzene	111		113		70-130	2		20
Trichlorofluoromethane	114		119		70-130	4		20
1,2-Dichloroethane	118		119		70-130	1		20
1,1,1-Trichloroethane	123		124		70-130	1		20
Bromodichloromethane	120		123		70-130	2		20
trans-1,3-Dichloropropene	113		116		70-130	3		20
cis-1,3-Dichloropropene	120		122		70-130	2		20
1,1-Dichloropropene	110		115		70-130	4		20
Bromoform	102		103		70-130	1		20
1,1,2,2-Tetrachloroethane	95		96		70-130	1		20
Benzene	113		115		70-130	2		20
Toluene	109		113		70-130	4		20
Ethylbenzene	109		114		70-130	4		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 05 Batch: WG836208-1 WG836208-2								
Chloromethane	110		113		70-130	3		20
Bromomethane	96		96		70-130	0		20
Vinyl chloride	86		90		70-130	5		20
Chloroethane	88		92		70-130	4		20
1,1-Dichloroethene	100		104		70-130	4		20
trans-1,2-Dichloroethene	106		111		70-130	5		20
Trichloroethene	114		115		70-130	1		20
1,2-Dichlorobenzene	107		107		70-130	0		20
1,3-Dichlorobenzene	110		110		70-130	0		20
1,4-Dichlorobenzene	109		111		70-130	2		20
Methyl tert butyl ether	118		122		70-130	3		20
p/m-Xylene	110		114		70-130	4		20
o-Xylene	112		116		70-130	4		20
cis-1,2-Dichloroethene	110		113		70-130	3		20
Dibromomethane	112		113		70-130	1		20
1,2,3-Trichloropropane	101		96		70-130	5		20
Styrene	115		118		70-130	3		20
Dichlorodifluoromethane	90		97		70-130	7		20
Acetone	89		84		70-130	6		20
Carbon disulfide	134	Q	146	Q	70-130	9		20
Methyl ethyl ketone	89		94		70-130	5		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 05 Batch: WG836208-1 WG836208-2								
Methyl isobutyl ketone	101		100		70-130	1		20
2-Hexanone	78		80		70-130	3		20
Bromochloromethane	110		111		70-130	1		20
Tetrahydrofuran	90		93		70-130	3		20
2,2-Dichloropropane	125		127		70-130	2		20
1,2-Dibromoethane	100		103		70-130	3		20
1,3-Dichloropropane	106		110		70-130	4		20
1,1,1,2-Tetrachloroethane	116		120		70-130	3		20
Bromobenzene	106		108		70-130	2		20
n-Butylbenzene	115		115		70-130	0		20
sec-Butylbenzene	108		110		70-130	2		20
tert-Butylbenzene	108		109		70-130	1		20
o-Chlorotoluene	108		109		70-130	1		20
p-Chlorotoluene	117		118		70-130	1		20
1,2-Dibromo-3-chloropropane	89		91		70-130	2		20
Hexachlorobutadiene	119		124		70-130	4		20
Isopropylbenzene	106		108		70-130	2		20
p-Isopropyltoluene	110		112		70-130	2		20
Naphthalene	96		99		70-130	3		20
n-Propylbenzene	109		109		70-130	0		20
1,2,3-Trichlorobenzene	111		115		70-130	4		20

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 05 Batch: WG836208-1 WG836208-2								
1,2,4-Trichlorobenzene	114		119		70-130	4		20
1,3,5-Trimethylbenzene	115		116		70-130	1		20
1,2,4-Trimethylbenzene	115		117		70-130	2		20
Diethyl ether	92		95		70-130	3		20
Diisopropyl Ether	106		110		70-130	4		20
Ethyl-Tert-Butyl-Ether	114		118		70-130	3		20
Tertiary-Amyl Methyl Ether	113		117		70-130	3		20
1,4-Dioxane	117		115		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		104		70-130
Toluene-d8	99		102		70-130
4-Bromofluorobenzene	104		103		70-130
Dibromofluoromethane	102		103		70-130

# SEMIVOLATILES

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**SAMPLE RESULTS**

Lab ID: L1527487-04  
 Client ID: D-13 6'-12' FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 10/30/15 14:22  
 Analyst: PS  
 Percent Solids: 85%

Date Collected: 10/27/15 10:15  
 Date Received: 10/27/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/28/15 15:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	150	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	--	1
Hexachlorobenzene	ND		ug/kg	110	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	--	1
2-Chloronaphthalene	ND		ug/kg	190	--	1
1,2-Dichlorobenzene	ND		ug/kg	190	--	1
1,3-Dichlorobenzene	ND		ug/kg	190	--	1
1,4-Dichlorobenzene	ND		ug/kg	190	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	--	1
2,4-Dinitrotoluene	ND		ug/kg	190	--	1
2,6-Dinitrotoluene	ND		ug/kg	190	--	1
Azobenzene	ND		ug/kg	190	--	1
Fluoranthene	110		ug/kg	110	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	--	1
Hexachlorobutadiene	ND		ug/kg	190	--	1
Hexachloroethane	ND		ug/kg	150	--	1
Isophorone	ND		ug/kg	170	--	1
Naphthalene	ND		ug/kg	190	--	1
Nitrobenzene	ND		ug/kg	170	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	190	--	1
Butyl benzyl phthalate	ND		ug/kg	190	--	1
Di-n-butylphthalate	ND		ug/kg	190	--	1
Di-n-octylphthalate	ND		ug/kg	190	--	1
Diethyl phthalate	ND		ug/kg	190	--	1
Dimethyl phthalate	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**SAMPLE RESULTS**

**Lab ID:** L1527487-04  
**Client ID:** D-13 6'-12' FILL  
**Sample Location:** BOSTON, MA

**Date Collected:** 10/27/15 10:15  
**Date Received:** 10/27/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
Aniline	ND		ug/kg	230	--	1
4-Chloroaniline	ND		ug/kg	190	--	1
Dibenzofuran	ND		ug/kg	190	--	1
2-Methylnaphthalene	ND		ug/kg	230	--	1
Acetophenone	ND		ug/kg	190	--	1
2,4,6-Trichlorophenol	ND		ug/kg	110	--	1
2-Chlorophenol	ND		ug/kg	190	--	1
2,4-Dichlorophenol	ND		ug/kg	170	--	1
2,4-Dimethylphenol	ND		ug/kg	190	--	1
2-Nitrophenol	ND		ug/kg	410	--	1
4-Nitrophenol	ND		ug/kg	270	--	1
2,4-Dinitrophenol	ND		ug/kg	910	--	1
Pentachlorophenol	ND		ug/kg	380	--	1
Phenol	ND		ug/kg	190	--	1
2-Methylphenol	ND		ug/kg	190	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	--	1
2,4,5-Trichlorophenol	ND		ug/kg	190	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		30-130
Phenol-d6	75		30-130
Nitrobenzene-d5	74		30-130
2-Fluorobiphenyl	70		30-130
2,4,6-Tribromophenol	85		30-130
4-Terphenyl-d14	58		30-130

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 10/29/15 12:28  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 10/28/15 15:40

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG835085-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	99	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	99	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 97,8270D  
**Analytical Date:** 10/29/15 12:28  
**Analyst:** PS

**Extraction Method:** EPA 3546  
**Extraction Date:** 10/28/15 15:40

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG835085-1					
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	99	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	99	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	360	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	790	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 10/29/15 12:28  
Analyst: PS

Extraction Method: EPA 3546  
Extraction Date: 10/28/15 15:40

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG835085-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	70		30-130
Phenol-d6	69		30-130
Nitrobenzene-d5	62		30-130
2-Fluorobiphenyl	71		30-130
2,4,6-Tribromophenol	84		30-130
4-Terphenyl-d14	79		30-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG835085-2 WG835085-3								
Acenaphthene	66		65		40-140	2		30
1,2,4-Trichlorobenzene	68		68		40-140	0		30
Hexachlorobenzene	73		73		40-140	0		30
Bis(2-chloroethyl)ether	56		57		40-140	2		30
2-Chloronaphthalene	70		69		40-140	1		30
1,2-Dichlorobenzene	65		66		40-140	2		30
1,3-Dichlorobenzene	64		65		40-140	2		30
1,4-Dichlorobenzene	64		65		40-140	2		30
3,3'-Dichlorobenzidine	57		60		40-140	5		30
2,4-Dinitrotoluene	70		70		40-140	0		30
2,6-Dinitrotoluene	72		71		40-140	1		30
Azobenzene	58		58		40-140	0		30
Fluoranthene	72		71		40-140	1		30
4-Bromophenyl phenyl ether	76		76		40-140	0		30
Bis(2-chloroisopropyl)ether	51		53		40-140	4		30
Bis(2-chloroethoxy)methane	60		60		40-140	0		30
Hexachlorobutadiene	72		73		40-140	1		30
Hexachloroethane	61		62		40-140	2		30
Isophorone	60		60		40-140	0		30
Naphthalene	64		63		40-140	2		30
Nitrobenzene	55		56		40-140	2		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG835085-2 WG835085-3								
Bis(2-Ethylhexyl)phthalate	66		65		40-140	2		30
Butyl benzyl phthalate	69		70		40-140	1		30
Di-n-butylphthalate	67		66		40-140	2		30
Di-n-octylphthalate	68		67		40-140	1		30
Diethyl phthalate	68		67		40-140	1		30
Dimethyl phthalate	69		68		40-140	1		30
Benzo(a)anthracene	71		70		40-140	1		30
Benzo(a)pyrene	72		72		40-140	0		30
Benzo(b)fluoranthene	70		70		40-140	0		30
Benzo(k)fluoranthene	69		70		40-140	1		30
Chrysene	69		68		40-140	1		30
Acenaphthylene	70		69		40-140	1		30
Anthracene	68		67		40-140	1		30
Benzo(ghi)perylene	76		74		40-140	3		30
Fluorene	69		68		40-140	1		30
Phenanthrene	68		66		40-140	3		30
Dibenzo(a,h)anthracene	75		75		40-140	0		30
Indeno(1,2,3-cd)Pyrene	77		75		40-140	3		30
Pyrene	72		70		40-140	3		30
Aniline	48		50		40-140	4		30
4-Chloroaniline	68		69		40-140	1		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG835085-2 WG835085-3								
Dibenzofuran	68		67		40-140	1		30
2-Methylnaphthalene	68		68		40-140	0		30
Acetophenone	74		76		40-140	3		30
2,4,6-Trichlorophenol	75		74		30-130	1		30
2-Chlorophenol	67		69		30-130	3		30
2,4-Dichlorophenol	72		71		30-130	1		30
2,4-Dimethylphenol	70		71		30-130	1		30
2-Nitrophenol	68		69		30-130	1		30
4-Nitrophenol	66		65		30-130	2		30
2,4-Dinitrophenol	46		39		30-130	16		30
Pentachlorophenol	69		66		30-130	4		30
Phenol	57		57		30-130	0		30
2-Methylphenol	66		67		30-130	2		30
3-Methylphenol/4-Methylphenol	64		65		30-130	2		30
2,4,5-Trichlorophenol	75		74		30-130	1		30

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG835085-2 WG835085-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>
2-Fluorophenol	66		67		30-130
Phenol-d6	65		65		30-130
Nitrobenzene-d5	61		62		30-130
2-Fluorobiphenyl	73		71		30-130
2,4,6-Tribromophenol	82		79		30-130
4-Terphenyl-d14	74		72		30-130



# PETROLEUM HYDROCARBONS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**SAMPLE RESULTS**

Lab ID: L1527487-04  
 Client ID: D-13 6'-12' FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 10/30/15 09:36  
 Analyst: MW  
 Percent Solids: 85%

Date Collected: 10/27/15 10:15  
 Date Received: 10/27/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/29/15 04:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Petroleum Hydrocarbon Quantitation - Westborough Lab						
--	--	--	--	--	--	--

TPH	ND		ug/kg	38600	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	81		40-140

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8015C(M)  
**Analytical Date:** 10/29/15 09:43  
**Analyst:** MW

**Extraction Method:** EPA 3546  
**Extraction Date:** 10/29/15 02:14

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG835228-1					
TPH	ND		ug/kg	32100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	88		40-140

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG835228-2								
TPH	86		-		40-140	-		40

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
o-Terphenyl	76				40-140

# PCBS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**SAMPLE RESULTS**

Lab ID: L1527487-04  
 Client ID: D-13 6'-12' FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 10/30/15 01:59  
 Analyst: KB  
 Percent Solids: 85%

Date Collected: 10/27/15 10:15  
 Date Received: 10/27/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 10/29/15 02:52  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 10/29/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 10/29/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	38.6	--	1	A
Aroclor 1221	ND		ug/kg	38.6	--	1	A
Aroclor 1232	ND		ug/kg	38.6	--	1	A
Aroclor 1242	ND		ug/kg	38.6	--	1	A
Aroclor 1248	ND		ug/kg	38.6	--	1	A
Aroclor 1254	ND		ug/kg	38.6	--	1	B
Aroclor 1260	ND		ug/kg	38.6	--	1	A
Aroclor 1262	ND		ug/kg	38.6	--	1	A
Aroclor 1268	ND		ug/kg	38.6	--	1	A
PCBs, Total	ND		ug/kg	38.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	45		30-150	A
Decachlorobiphenyl	25	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	50		30-150	B
Decachlorobiphenyl	48		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis  
Batch Quality Control**

**Analytical Method:** 97,8082A  
**Analytical Date:** 10/29/15 23:52  
**Analyst:** KB

**Extraction Method:** EPA 3546  
**Extraction Date:** 10/29/15 02:52  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 10/29/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 10/29/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 02,04,08 Batch: WG835237-1						
Aroclor 1016	ND		ug/kg	31.7	--	A
Aroclor 1221	ND		ug/kg	31.7	--	A
Aroclor 1232	ND		ug/kg	31.7	--	A
Aroclor 1242	ND		ug/kg	31.7	--	A
Aroclor 1248	ND		ug/kg	31.7	--	A
Aroclor 1254	ND		ug/kg	31.7	--	A
Aroclor 1260	ND		ug/kg	31.7	--	A
Aroclor 1262	ND		ug/kg	31.7	--	A
Aroclor 1268	ND		ug/kg	31.7	--	A
PCBs, Total	ND		ug/kg	31.7	--	A

Surrogate	%Recovery	Qualifier	Acceptance	Column
			Criteria	
2,4,5,6-Tetrachloro-m-xylene	76		30-150	A
Decachlorobiphenyl	56		30-150	A
2,4,5,6-Tetrachloro-m-xylene	82		30-150	B
Decachlorobiphenyl	83		30-150	B

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Method Blank Analysis  
 Batch Quality Control**

**Analytical Method:** 97,8082A  
**Analytical Date:** 10/31/15 17:56  
**Analyst:** TQ

**Extraction Method:** EPA 3546  
**Extraction Date:** 10/30/15 22:25  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 10/31/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 10/31/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 06,10,12 Batch: WG836080-1						
Aroclor 1016	ND		ug/kg	32.6	--	A
Aroclor 1221	ND		ug/kg	32.6	--	A
Aroclor 1232	ND		ug/kg	32.6	--	A
Aroclor 1242	ND		ug/kg	32.6	--	A
Aroclor 1248	ND		ug/kg	32.6	--	A
Aroclor 1254	ND		ug/kg	32.6	--	A
Aroclor 1260	ND		ug/kg	32.6	--	A
Aroclor 1262	ND		ug/kg	32.6	--	A
Aroclor 1268	ND		ug/kg	32.6	--	A
PCBs, Total	ND		ug/kg	32.6	--	A

Surrogate	%Recovery	Qualifier	Acceptance	Column
			Criteria	
2,4,5,6-Tetrachloro-m-xylene	70		30-150	A
Decachlorobiphenyl	72		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	105		30-150	B





## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02,04,08 Batch: WG835237-2 WG835237-3									
Aroclor 1016	73		66		40-140	10		30	A
Aroclor 1260	62		56		40-140	10		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		71		30-150	A
Decachlorobiphenyl	61		55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	87		76		30-150	B
Decachlorobiphenyl	89		79		30-150	B

## Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 06,10,12 Batch: WG836080-2 WG836080-3									
Aroclor 1016	85		91		40-140	7		30	A
Aroclor 1260	89		92		40-140	3		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		77		30-150	A
Decachlorobiphenyl	79		82		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		70		30-150	B
Decachlorobiphenyl	103		106		30-150	B

## METALS

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**SAMPLE RESULTS**

Lab ID: L1527487-04  
 Client ID: D-13 6'-12' FILL  
 Sample Location: BOSTON, MA  
 Matrix: Soil  
 Percent Solids: 85%

Date Collected: 10/27/15 10:15  
 Date Received: 10/27/15  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Westborough Lab</b>											
Antimony, Total	ND		mg/kg	2.3	--	1	10/28/15 02:57	10/28/15 12:16	EPA 3050B	97,6010C	JH
Arsenic, Total	3.1		mg/kg	0.46	--	1	10/28/15 02:57	10/28/15 12:16	EPA 3050B	97,6010C	JH
Barium, Total	37		mg/kg	0.46	--	1	10/28/15 02:57	10/28/15 12:16	EPA 3050B	97,6010C	JH
Beryllium, Total	0.31		mg/kg	0.23	--	1	10/28/15 02:57	10/28/15 12:16	EPA 3050B	97,6010C	JH
Cadmium, Total	ND		mg/kg	0.46	--	1	10/28/15 02:57	10/28/15 12:16	EPA 3050B	97,6010C	JH
Chromium, Total	20		mg/kg	0.46	--	1	10/28/15 02:57	10/28/15 12:16	EPA 3050B	97,6010C	JH
Lead, Total	6.6		mg/kg	2.3	--	1	10/28/15 02:57	10/28/15 12:16	EPA 3050B	97,6010C	JH
Mercury, Total	ND		mg/kg	0.077	--	1	10/28/15 07:45	10/28/15 14:56	EPA 7471B	97,7471B	DB
Nickel, Total	14		mg/kg	1.2	--	1	10/28/15 02:57	10/28/15 12:16	EPA 3050B	97,6010C	JH
Selenium, Total	ND		mg/kg	2.3	--	1	10/28/15 02:57	10/28/15 12:16	EPA 3050B	97,6010C	JH
Silver, Total	ND		mg/kg	0.46	--	1	10/28/15 02:57	10/28/15 12:16	EPA 3050B	97,6010C	JH
Thallium, Total	ND		mg/kg	2.3	--	1	10/28/15 02:57	10/28/15 12:16	EPA 3050B	97,6010C	JH
Vanadium, Total	25		mg/kg	0.46	--	1	10/28/15 02:57	10/28/15 12:16	EPA 3050B	97,6010C	JH
Zinc, Total	38		mg/kg	2.3	--	1	10/28/15 02:57	10/28/15 12:16	EPA 3050B	97,6010C	JH



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG834823-1									
Antimony, Total	ND	mg/kg	2.0	--	1	10/28/15 02:57	10/28/15 11:29	97,6010C	JH
Arsenic, Total	ND	mg/kg	0.40	--	1	10/28/15 02:57	10/28/15 11:29	97,6010C	JH
Barium, Total	ND	mg/kg	0.40	--	1	10/28/15 02:57	10/28/15 11:29	97,6010C	JH
Beryllium, Total	ND	mg/kg	0.20	--	1	10/28/15 02:57	10/28/15 11:29	97,6010C	JH
Cadmium, Total	ND	mg/kg	0.40	--	1	10/28/15 02:57	10/28/15 11:29	97,6010C	JH
Chromium, Total	ND	mg/kg	0.40	--	1	10/28/15 02:57	10/28/15 11:29	97,6010C	JH
Lead, Total	ND	mg/kg	2.0	--	1	10/28/15 02:57	10/28/15 11:29	97,6010C	JH
Nickel, Total	ND	mg/kg	1.0	--	1	10/28/15 02:57	10/28/15 11:29	97,6010C	JH
Selenium, Total	ND	mg/kg	2.0	--	1	10/28/15 02:57	10/28/15 11:29	97,6010C	JH
Silver, Total	ND	mg/kg	0.40	--	1	10/28/15 02:57	10/28/15 11:29	97,6010C	JH
Thallium, Total	ND	mg/kg	2.0	--	1	10/28/15 02:57	10/28/15 11:29	97,6010C	JH
Vanadium, Total	ND	mg/kg	0.40	--	1	10/28/15 02:57	10/28/15 11:29	97,6010C	JH
Zinc, Total	ND	mg/kg	2.0	--	1	10/28/15 02:57	10/28/15 11:29	97,6010C	JH

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG834831-1									
Mercury, Total	ND	mg/kg	0.083	--	1	10/28/15 07:45	10/28/15 14:47	97,7471B	DB

### Prep Information

Digestion Method: EPA 7471B

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Total Metals - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG834823-2 WG834823-3 SRM Lot Number: D088-540								
Antimony, Total	187		187		1-208	0		30
Arsenic, Total	105		105		79-121	0		30
Barium, Total	110		99		83-117	11		30
Beryllium, Total	104		104		83-117	0		30
Cadmium, Total	107		107		83-117	0		30
Chromium, Total	110		110		80-120	0		30
Lead, Total	98		98		81-117	0		30
Nickel, Total	108		109		83-117	1		30
Selenium, Total	108		108		78-122	0		30
Silver, Total	110		108		75-124	2		30
Thallium, Total	110		105		80-120	5		30
Vanadium, Total	107		107		78-122	0		30
Zinc, Total	106		106		82-118	0		30
MCP Total Metals - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG834831-2 WG834831-3 SRM Lot Number: D088-540								
Mercury, Total	100		103		72-128	3		30

# **INORGANICS & MISCELLANEOUS**

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

### SAMPLE RESULTS

**Lab ID:** L1527487-04  
**Client ID:** D-13 6'-12' FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 10/27/15 10:15  
**Date Received:** 10/27/15  
**Field Prep:** Not Specified

### Test Material Information

**Source of Material:** Unknown  
**Description of Material:** Non-Metallic - Damp Soil  
**Particle Size:** Medium  
**Preliminary Burning Time (sec):** 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	10/28/15 23:51	1,1030	TL





Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

## SAMPLE RESULTS

Lab ID: L1527487-03

Date Collected: 10/27/15 10:15

Client ID: D-13 S6 10-12

Date Received: 10/27/15

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.0		%	0.100	NA	1	-	10/27/15 22:26	30,2540G	RT



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**SAMPLE RESULTS**

**Lab ID:** L1527487-04  
**Client ID:** D-13 6'-12' FILL  
**Sample Location:** BOSTON, MA  
**Matrix:** Soil

**Date Collected:** 10/27/15 10:15  
**Date Received:** 10/27/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance	130		umhos/cm	10	--	1	-	10/27/15 21:54	1,9050A	AS
Solids, Total	85.0		%	0.100	NA	1	-	10/27/15 22:26	30,2540G	RT
pH (H)	8.2		SU	-	NA	1	-	10/27/15 22:29	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	10/28/15 19:20	10/28/15 22:54	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	10/28/15 19:20	10/28/15 22:44	1,7.3	TL



Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG835120-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	10/28/15 19:20	10/28/15 22:51	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 02,04,06,08,10,12 Batch: WG835121-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	10/28/15 19:20	10/28/15 22:41	1,7.3	TL

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1527487

Report Date: 11/02/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG834773-1								
Specific Conductance	100		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG834775-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG835120-2								
Cyanide, Reactive	83		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10,12 Batch: WG835121-2								
Sulfide, Reactive	88		-		60-125	-		40

## Lab Duplicate Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1527487

Report Date: 11/02/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10,12 QC Batch ID: WG834773-2 QC Sample: L1527487-02 Client ID: D-13 0-6 FILL						
Specific Conductance	150	140	umhos/cm	7		20
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG834781-1 QC Sample: L1527487-02 Client ID: D-13 0-6 FILL						
Solids, Total	90.0	90.7	%	1		20

Project Name: FAN PIER PARCEL D

Lab Number: L1527487

Project Number: 4426.9.1D

Report Date: 11/02/15

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 10/27/2015 19:17

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1527487-01A	Vial MeOH preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-01B	Vial water preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-01C	Vial water preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-02A	Glass 250ml/8oz unpreserved	A	N/A	2.2	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),TS(7),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),PH-9045(1),MCP(),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)
L1527487-03A	Vial MeOH preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-03B	Vial water preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-03C	Vial water preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1527487-04A	Glass 250ml/8oz unpreserved	A	N/A	2.2	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),TS(7),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),PH-9045(1),MCP(),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)
L1527487-05A	Vial MeOH preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-05B	Vial water preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-05C	Vial water preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-06A	Glass 250ml/8oz unpreserved	A	N/A	2.2	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),TS(7),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),PH-9045(1),MCP(),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)
L1527487-07A	Vial MeOH preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-07B	Vial water preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-07C	Vial water preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1527487-08A	Glass 250ml/8oz unpreserved	A	N/A	2.2	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),TS(7),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),PH-9045(1),MCP(),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)
L1527487-09A	Vial MeOH preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-09B	Vial water preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-09C	Vial water preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-10A	Glass 250ml/8oz unpreserved	A	N/A	2.2	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),TS(7),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),PH-9045(1),MCP(),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)
L1527487-11A	Vial MeOH preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-11B	Vial water preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)
L1527487-11C	Vial water preserved	A	N/A	2.2	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days





Project Name: FAN PIER PARCEL D

Project Number: 4426.9.1D

Lab Number: L1527487

Report Date: 11/02/15

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1527487-12A	Glass 250ml/8oz unpreserved	A	N/A	2.2	Y	Absent	IGNIT-1030(14),MCP-8082-10(365),MCP-CR-6010T-10(180),REACTS(14),MCP-8270-10(14),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),TS(7),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),PH-9045(1),MCP(),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),REACTCN(14),TPH-DRO-D(14),COND-9050(28),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

## 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.
LCS D	- 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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
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).

**Report Format:** Data Usability Report



**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

#### Data Qualifiers

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- 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.

**Project Name:** FAN PIER PARCEL D  
**Project Number:** 4426.9.1D

**Lab Number:** L1527487  
**Report Date:** 11/02/15

## 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.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## LIMITATION OF LIABILITIES

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

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



## Certification Information

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

### Westborough Facility

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide) (soil), Methyl methacrylate (soil), Azobenzene.

**EPA 8270D:** Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### 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, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**

**EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4,**

**SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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



# CHAIN OF CUSTODY

PAGE 1 OF 2

## Project Information

Project Name: Fan Pier Parcel D

Project Location: Boston, MA

Project #: 4426.9.1D

Project Manager: Ben Downing/Peter DeChaves

ALPHA Quote #: Fan Pier Pricing

## Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Westborough, MA  
 TEL: 508-898-9220  
 FAX: 508-898-9193

Mansfield, MA  
 TEL: 508-822-9300  
 FAX: 508-822-3288

## Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: 6178681420

Fax: 6178681423

Email: bdowning@mcphailgeo.com

These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Standard TAT

\*Denotes obtain total solid sample from composite sample.

\*\*Minus VOCs

Date Rec'd in Lab: 10/27/15

ALPHA Job #: L1527487

## Report Information Data Deliverables

FAX  EMAIL  
 ADEX  Add'l Deliverables

## Billing Information

Same as Client info PO #:

## Regulatory Requirements/Report Limits

State/Fed Program

Criteria

MA

RCS-1

## MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

## ANALYSIS

VOCs (8260)*	Soil Management Package I V**	Total Sb, Be, Ni, Ti, V, and Zn																
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SAMPLE HANDLING  
 Filtration  
 Done  
 Not Needed  
 Lab to do  
 Preservation  
 Lab to do  
 (Please specify below)

TOTAL # BOTTLES

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	VOCs (8260)*	Soil Management Package I V**	Total Sb, Be, Ni, Ti, V, and Zn												
		Date	Time																	
27487-01	D-13 S2 4-4	10/27/15	9:30	S	Tm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
02	D-13 0-6 Fill		9:30	S		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7
03	D-13 5-6 10-12		10:15	S		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
04	D-13 6'-12' Fill		10:15	S		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
05	D-13 5-8 14-16		11:00	S		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
06	D-13 12'-18' Fill		11:00	S		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
07	D-13 5-12 22-24		13:00	S		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
08	D-13 18'-24' Fill		13:00	S		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
09	D-13 5-13 24-26		13:45	S		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
10	D-13 24-30 Fill		13:55	S		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	A	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	F	A	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

IS YOUR PROJECT  
 MA MCP or CT RCP?

FORM NO: 01-01(1)  
 (rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	10/27/15 15:00	<i>[Signature]</i>	10/27/15 15:10
<i>[Signature]</i>	10/27/15 18:00	<i>[Signature]</i>	10/27/15 18:00

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



7A  
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1527487

Instrument ID: Voal00.i      Calibration Date: 30-OCT-2015      Time: 07:28

Lab File ID: 1030A01      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
=====	=====	=====	=====	=====	=====	
dichlorodifluoromethane	.187	.16844	.1	-10	20	
chloromethane	.20766	.22793	.1	10	20	
vinyl chloride	.21396	.1831	.1	-14	20	
bromomethane	.13517	.13045	.1	-3	20	
chloroethane	.12913	.11328	.1	-12	20	
trichlorofluoromethane	.24868	.28246	.1	14	20	
ethyl ether	.12265	.11315	.05	-8	20	
1,1,-dichloroethene	.15676	.15708	.1	0	20	
carbon disulfide	.60511	.80914	.1	34	20	F
methylene chloride	.20702	.22366	.1	8	20	
acetone	100	89.240	.1	-11	20	
trans-1,2-dichloroethene	.18303	.19375	.1	6	20	
methyl tert butyl ether	.59541	.70552	.1	18	20	
Diisopropyl Ether	.66228	.70016	.05	6	20	
1,1-dichloroethane	.37295	.41661	.2	12	20	
Ethyl-Tert-Butyl-Ether	.67262	.76774	.05	14	20	
cis-1,2-dichloroethene	.20399	.22448	.1	10	20	
2,2-dichloropropane	.27701	.34623	.05	25	20	F
bromochloromethane	.09003	.09881	.05	10	20	
chloroform	.35545	.41827	.2	18	20	
carbontetrachloride	.23543	.30303	.1	29	20	F
tetrahydrofuran	.07866	.07075	.05	-10	20	
1,1,1-trichloroethane	.28145	.34669	.1	23	20	F
2-butanone	.11217	.09962	.1	-11	20	
1,1-dichloropropene	.24964	.27371	.05	10	20	
benzene	.78204	.88485	.5	13	20	
Tertiary-Amyl Methyl Ether	.58171	.65624	.05	13	20	
1,2-dichloroethane	.29909	.35282	.1	18	20	
trichloroethene	.19209	.2183	.2	14	20	F
dibromomethane	.12744	.14264	.05	12	20	
1,2-dichloropropane	.20856	.2406	.1	15	20	
bromodichloromethane	.27983	.33604	.2	20	20	F
1,4-dioxane	.00226	.00265	.05	17	20	F
cis-1,3-dichloropropene	.32828	.39534	.2	20	20	F
toluene	.70265	.76505	.4	9	20	
4-methyl-2-pentanone	.09341	.09445	.1	1	20	F
tetrachloroethene	.24354	.25071	.2	3	20	
trans-1,3-dichloropropene	.44951	.50621	.1	13	20	

FORM VII MCP-8260HLW-10



7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1527487

Instrument ID: Voal00.i      Calibration Date: 30-OCT-2015      Time: 07:28

Lab File ID: 1030A01      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.22462	.22891	.1	2	20
chlorodibromomethane	.27986	.30756	.1	10	20
1,3-dichloropropane	.4689	.49826	.05	6	20
1,2-dibromoethane	.25199	.25065	.1	-1	20
2-hexanone	.25182	.19589	.1	-22	20
chlorobenzene	.72245	.80129	.5	11	20
ethyl benzene	1.321	1.4457	.1	9	20
1,1,1,2-tetrachloroethane	.25141	.29309	.05	17	20
p/m xylene	.4784	.52875	.1	11	20
o xylene	.4574	.5148	.3	13	20
styrene	.80709	.93019	.3	15	20
bromoform	.39095	.39814	.1	2	20
isopropylbenzene	2.5014	2.6428	.1	6	20
bromobenzene	.58801	.62239	.05	6	20
n-propylbenzene	3.1176	3.4010	.05	9	20
1,1,2,2,-tetrachloroethane	.79665	.75661	.3	-5	20
2-chlorotoluene	1.9997	2.1638	.05	8	20
1,3,5-trimethylbenzene	2.1494	2.4647	.05	15	20
1,2,3-trichloropropane	.6668	.67326	.05	1	20
4-chlorotoluene	1.9179	2.2363	.05	17	20
tert-butylbenzene	1.6411	1.7673	.05	8	20
1,2,4-trimethylbenzene	2.1380	2.4680	.05	15	20
sec-butylbenzene	2.7032	2.9277	.05	8	20
p-isopropyltoluene	2.1196	2.3260	.05	10	20
1,3-dichlorobenzene	1.1313	1.2424	.6	10	20
1,4-dichlorobenzene	1.1563	1.2626	.5	9	20
n-butylbenzene	2.2066	2.5304	.05	15	20
1,2-dichlorobenzene	1.0944	1.1748	.4	7	20
1,2-dibromo-3-chloropropane	.11922	.10567	.05	-11	20
hexachlorobutadiene	.33792	.40079	.05	19	20
1,2,4-trichlorobenzene	.69367	.7939	.2	14	20
naphthalene	2.0354	1.9480	.05	-4	20
1,2,3-trichlorobenzene	.65938	.73464	.05	11	20
dibromofluoromethane	.24097	.24702	.05	3	30
1,2-dichloroethane-d4	.30902	.31645	.05	2	30
toluene-d8	1.3369	1.3293	.05	-1	30
4-bromofluorobenzene	1.0311	1.0737	.05	4	30

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FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1527487

Instrument ID: Voal00.i      Calibration Date: 29-OCT-2015      Time: 09:06

Lab File ID: 1029A03      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
=====	=====	=====	=====	=====	=====	
dichlorodifluoromethane	.187	.19749	.1	6	20	
chloromethane	.20766	.24148	.1	16	20	
vinyl chloride	.21396	.20183	.1	-6	20	
bromomethane	.13517	.12594	.1	-7	20	
chloroethane	.12913	.11858	.1	-8	20	
trichlorofluoromethane	.24868	.31204	.1	25	20	F
ethyl ether	.12265	.11322	.05	-8	20	
1,1,-dichloroethene	.15676	.16921	.1	8	20	
carbon disulfide	.60511	.68284	.1	13	20	
methylene chloride	.20702	.22493	.1	9	20	
acetone	100	93.571	.1	-6	20	
trans-1,2-dichloroethene	.18303	.20265	.1	11	20	
methyl tert butyl ether	.59541	.70877	.1	19	20	
Diisopropyl Ether	.66228	.72384	.05	9	20	
1,1-dichloroethane	.37295	.44816	.2	20	20	F
Ethyl-Tert-Butyl-Ether	.67262	.78186	.05	16	20	
cis-1,2-dichloroethene	.20399	.22755	.1	12	20	
2,2-dichloropropane	.27701	.36164	.05	31	20	F
bromochloromethane	.09003	.09828	.05	9	20	
chloroform	.35545	.42684	.2	20	20	F
carbontetrachloride	.23543	.32482	.1	38	20	F
tetrahydrofuran	.07866	.07425	.05	-6	20	
1,1,1-trichloroethane	.28145	.36562	.1	30	20	F
2-butanone	.11217	.10863	.1	-3	20	
1,1-dichloropropene	.24964	.29299	.05	17	20	
benzene	.78204	.91522	.5	17	20	
Tertiary-Amyl Methyl Ether	.58171	.67066	.05	15	20	
1,2-dichloroethane	.29909	.36601	.1	22	20	F
trichloroethene	.19209	.22572	.2	18	20	F
dibromomethane	.12744	.14281	.05	12	20	
1,2-dichloropropane	.20856	.24677	.1	18	20	
bromodichloromethane	.27983	.34281	.2	23	20	F
1,4-dioxane	.00226	.00288	.05	27	20	F
cis-1,3-dichloropropene	.32828	.39432	.2	20	20	F
toluene	.70265	.79319	.4	13	20	
4-methyl-2-pentanone	.09341	.09453	.1	1	20	F
tetrachloroethene	.24354	.27539	.2	13	20	
trans-1,3-dichloropropene	.44951	.53261	.1	18	20	

FORM VII MCP-8260HLW-10

7A  
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1527487

Instrument ID: Voal00.i      Calibration Date: 29-OCT-2015      Time: 09:06

Lab File ID: 1029A03      Init. Calib. Date(s): 10-AUG-2      19-AUG-2

Sample No: 8260 CCAL      Init. Calib. Times : 12:00      21:11

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.22462	.24344	.1	8	20
chlorodibromomethane	.27986	.32094	.1	15	20
1,3-dichloropropane	.4689	.51058	.05	9	20
1,2-dibromoethane	.25199	.25624	.1	2	20
2-hexanone	.25182	.21016	.1	-17	20
chlorobenzene	.72245	.82465	.5	14	20
ethyl benzene	1.321	1.5197	.1	15	20
1,1,1,2-tetrachloroethane	.25141	.30135	.05	20	20
p/m xylene	.4784	.55547	.1	16	20
o xylene	.4574	.53529	.3	17	20
styrene	.80709	.96714	.3	20	20
bromoform	.39095	.3985	.1	2	20
isopropylbenzene	2.5014	2.7277	.1	9	20
bromobenzene	.58801	.62793	.05	7	20
n-propylbenzene	3.1176	3.5083	.05	13	20
1,1,2,2,-tetrachloroethane	.79665	.76585	.3	-4	20
2-chlorotoluene	1.9997	2.2059	.05	10	20
1,3,5-trimethylbenzene	2.1494	2.5028	.05	16	20
1,2,3-trichloropropane	.6668	.68732	.05	3	20
4-chorotoluene	1.9179	2.2489	.05	17	20
tert-butylbenzene	1.6411	1.8231	.05	11	20
1,2,4-trimethylbenzene	2.1380	2.5003	.05	17	20
sec-butylbenzene	2.7032	3.0233	.05	12	20
p-isopropyltoluene	2.1196	2.4040	.05	13	20
1,3-dichlorobenzene	1.1313	1.2727	.6	12	20
1,4-dichlorobenzene	1.1563	1.2724	.5	10	20
n-butylbenzene	2.2066	2.5981	.05	18	20
1,2-dichlorobenzene	1.0944	1.1729	.4	7	20
1,2-dibromo-3-chloropropane	.11922	.11295	.05	-5	20
hexachlorobutadiene	.33792	.41558	.05	23	20
1,2,4-trichlorobenzene	.69367	.8059	.2	16	20
naphthalene	2.0354	2.0546	.05	1	20
1,2,3-trichlorobenzene	.65938	.76988	.05	17	20
dibromofluoromethane	.24097	.25721	.05	7	30
1,2-dichloroethane-d4	.30902	.33452	.05	8	30
toluene-d8	1.3369	1.3681	.05	2	30
4-bromofluorobenzene	1.0311	1.0775	.05	4	30

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FORM VII MCP-8260HLW-10