NOTICE OF INTENT FOR DISCHARGE PURSUANT TO MASSACHUSETTS REMEDIATION GENERAL PERMIT MAG9100000

10 FAN PIER BOULEVARD

BOSTON, MASSACHUSETTS

JUNE 3, 2019

Prepared For:

U.S. EPA
Office of Ecosystem Protection
5 Post Office Square – Suite 100
Mail Code OEP06-01
Boston, MA 02109-3912

On Behalf Of:

10 Fan Pier Boulevard LLC

&

Turner Construction Company

PROJECT NO. 4426

2269 Massachusetts Avenue
Cambridge, MA 02140
www.mcphailgeo.com
(617) 868-1420

U.S. EPA
June 3, 2019

U.S. EPA
Dewatering GP Processing
Industrial Permit Unit (OEP 06-4)
5 Post Office Square – Suite 100
Mail Code OEP06-01
Boston, MA 02109-3912

Attention: To Whom It May Concern

Reference: Fan Pier Parcel E, 10 Fan Pier Boulevard; South Boston, Massachusetts
Notice of Intent for Dewatering Discharge Under
Massachusetts Remediation General Permit MAG910000

Ladies and Gentlemen:

On behalf of the 10 Fan Pier Development LLC, McPhail Associates, LLC (McPhail) has prepared the attached Notice of Intent (NOI) for coverage under the Remediation General Permit (RGP) MAG910000 that has been prepared for the Commonwealth of Massachusetts for the discharge of temporary dewatering effluent into the Boston Inner Harbor via a private storm drainage system. The temporary discharge is located at Fan Pier Parcel E, 10 Fan Pier Boulevard; South Boston, Massachusetts (subject site). Refer to **Figure 1** entitled: "Project Location Plan" for the general site locus.

These services were performed and this permit application was prepared at the authorization of Fan Pier Development LLC. These services are subject to the limitations contained in **Appendix A**.

The required Notice of Intent Form contained in the RGP permit is included in **Appendix B** and supporting information is included in **Appendix C**.

Applicant/Operator

The applicant for the Notice of Intent-Dewatering General Permit is:

Turner Construction Company
Address: Two Seaport Lane, Suite 200,
Boston MA, 02210

Attention: AJ Millson
Phone: (617) 719-6248
Email: amillson@tcco.com

Owner

10 Fan Pier Development LLC
Address: One Marina Park Drive,
Boston, MA 02210

Attention: James Heighton
Phone: (617) 737 4100
Email: jheighton@falloncompany.com

Site Location and Existing Conditions

Parcel E occupies an approximate 30,600 square-foot rectangular plan area which is bounded by Bond Drive to the south, Fan Pier Boulevard to the west, Liberty Drive to the north, and Boston Harbor to the east. The site is currently utilized as a construction staging area. Existing ground surface across the site is relatively level, varying from about Elevation +16 to +17 shown in **Figure 2**.

Proposed Development

It is understood that the proposed development of Parcel E includes the construction of a 17-story building with three levels of below-grade parking. The below-grade garage will occupy the entire footprint of Parcel E, the lowest level slab of which is proposed to be located at Elevation -15.5. In order to facilitate construction of the proposed below grade parking garage, excavation of soil at Parcel E will be completed within a sheet piling cofferdam that will provide a groundwater cutoff. The excavation will extend below the surface of groundwater which will be dewatered as necessary.

Site Environmental Setting and Surrounding Historical Places

Based on an on-line edition of the Massachusetts Geographic Information Systems DEP Priority Resources Map (GIS Map) viewed on April 25, 2019, the subject site is not located within the boundaries of a Sole Source Aquifer, Potentially Productive Aquifer or within a Zone II, Interim Wellhead Protection Area as defined by the Massachusetts Department of Environmental Protection. Further, there are no public drinking water supply wells, no Areas of Critical Environmental Concern, no fish habitats, no habitats of Species of Special Concern or Threatened or Endangered Species within specified distances of the subject site.

A review of information provided by the U.S. Fish and Wildlife Service in an Information for Planning and Conservation (IPaC) Trust Resource Report for the subject site identified that there are no endangered species at or in the vicinity of the discharge location and/or

discharge outfall. Based upon the above, the site is considered a Criterion A pursuant to Appendix IV of the RGP. A copy of the IPaC Trust Resource Report and correspondence are included in **Appendix C**.

The GIS Map indicates that there are no water bodies or wetland areas on the subject site, but Boston Inner Harbor is located approximately 50 feet from the subject site. The map indicates that there are no known Protected Open Space within 0.5 miles of the subject site. A copy of the Massachusetts GIS Priority Resources Map is included in **Appendix C**.

A review of the online Massachusetts Cultural Resource Information System (MACRIS) and the National Register of Historical Places for Suffolk County in Boston, Massachusetts did not identify records or addresses of historic places that exist in the immediate vicinity of the subject site and/or outfall location. A copy of the MACRIS Report is included in **Appendix C**.

MCP Regulatory Status

Based upon the results of soil pre-characterization chemical testing that was completed in 1999, the subject site and surrounding 21-acre Fan Pier parcel were listed as an MCP site under Release Tracking Number (RTN) 3-19647 on June 14, 2000. The results of chemical testing identified Reportable Concentrations of total petroleum hydrocarbons (TPH), lead, PCBs, and polycyclic aromatic hydrocarbons (PAHs) in historical urban fill and underlying organic soils at the site. The Massachusetts Department of Environmental Protection (DEP) was notified of the 120 day release condition on June 14, 2000. Subsequently, response actions were completed at the site in 2000 which included the excavation and off-site removal of the contaminated soil. As a result of the response actions, a Class A-2 Release Action Outcome (RAO) was filed with the DEP on June 14, 2004 for RTN 3-19647.

On October 5, 2018 the DEP was notified of an additional release associated with the presence of arsenic, barium, and vanadium in the soil above the applicable RCS-1 reporting standards. Subsequently, the MADEP assigned RTN 3-35368 to this release. It is anticipated that excavation of contaminated soils will be completed under a Release Abatement Measure (RAM) Plan during the redevelopment of Parcel E. The analytical results of the aqueous sample from monitor well E-15(OW) collected on May 14, 2019 indicate groundwater at the subject site does not contain detectable levels of arsenic or vanadium, however barium was detected at a concentration of 0.000131 ug/l which is above the laboratory detection limit of 0.000010 ug/l. The results of this laboratory testing is summarized in **Table 1** and the laboratory report is included in **Appendix D**.

Summary of Groundwater Analysis

On April 17, 2019, an influent groundwater sample was collected from monitor well E-15(OW) and submitted for laboratory analysis for the field parameters of general chemistry, total metals, polychlorinated biphenals (PCBs), semi volatile organic compounds (SVOCs), volatile organic compounds (VOCs), and specific fuel parameters required by the RGP

Authorization MAG9100000. The results of this laboratory testing is summarized in **Table 1** and the laboratory report is included in **Appendix D**. In conjunction with the NPDES RGP, a sample of water from the Boston Inner Harbor was obtained and analyzed for recoverable metals, ammonia, pH, and salinity, the results of which are summarized in **Table 2** and the laboratory data report is included in **Appendix E**.

In summary, ammonia, dissolved barium, cyanide, arsenic, iron, anthracene, bis(2-ethylhexyl)phthalate, fluoranthene, fluorene, naphthalene, and phenanthrene were detected in the influent sample above laboratory detection limits. These detected concentrations were utilized in Appendix V of the 2017 RGP, to determine if Water Quality-Based Effluent Limitations (WQBELs) for specific inorganics and SVOCs apply. The relatively low barium concentration detected is below the Human Health Water Quality criteria established by the EPA and is likely attributable to naturally occurring levels in soil and thus is not considered to be a contaminant in our discharge. For discharging to saltwater with a dilution factor of 0, WQBELs apply for total residual chlorine (TRC). The Appendix V calculations indicate Technology-Based Effluent Limitations (TBELs) apply for all Inorganics except TRC. However, it is noted that the WQBEL for TRC is not applicable because groundwater at the subject site has not, nor will not be treated with chlorine in accordance with the development or previous environmental activities. A copy of the TBEL and WQBEL calculations is attached in **Appendix C**.

Temporary Construction Dewatering

It is anticipated that excavation within the proposed footprint of the common foundation will extend approximately 26 feet below the observed groundwater level. In order to facilitate construction of the below grade levels, to provide support of the excavation, and to provide an effective groundwater cut-off during construction, a sheet piling wall (cofferdam) will be installed as the perimeter wall of the common foundation. Given that the area of the common foundation occupies a majority of the subject site, temporary on-site collection and recharge of groundwater is not feasible. As a result, construction dewatering will require the discharge of collected groundwater into a dedicated storm drain system under the requested Remediation General Permit.

It is anticipated that the rate of construction dewatering to facilitate excavation of the fill material will be on the order of 75 to 100 gallons per minute (gpm). However, as the excavation extends into the underlying relatively impervious clay and organic deposit, it is anticipated that rate of construction dewatering will decrease to approximately 25 to 50 gallons per minute. These estimates do not include surface run-off which will be removed from the excavation during periods of precipitation.

A review of available subgrade sanitary and storm sewer system plans accessed from the BWSC indicates the presence of a private dedicated stormwater drain system located on the subject site. Records supplied by BWSC indicate a single discharge flow path adjacent to the site flow to a primary discharge outfall location into the Boston Inner Harbor. The

primary discharge location is an outfall pipe listed SDO15 according to the BWSC shown on **Figure 3.**

Groundwater Treatment

Based upon the anticipated rates of construction dewatering in conjunction with the results of the above referenced groundwater analyses, it is our opinion that one 10,000-gallon capacity settling tank, bag filters, and ion resin media vessel in series will be necessary to settle out and remove particulate matter and SVOCs in the effluent to meet the limits established by the US EPA prior to the discharge of the effluent. A schematic of the treatment system is shown on **Figure 4**.

Summary and Conclusions

The purpose of this report is to assess site environmental conditions and groundwater data to support a Notice of Intent to discharge construction dewatering under the Massachusetts Remediation General Permit during redevelopment of Parcel E located at 10 Fan Pier Boulevard in South Boston, Massachusetts

Based on the results of the above referenced groundwater analyses, treatment of construction dewatering will be necessary to meet the effluent limits established by the US EPA prior to off-site discharge. The proposed effluent treatment system consists of one 10,000 gallon settling tank, bag filters and ion resin media vessel in series. However, should the effluent monitoring results identify concentrations of contaminants that are in excess of the limits established by the RGP, additional measures will be implemented to meet the allowable discharge limits.

We trust that the above satisfies your present requirements. Should you have any questions or comments concerning the above, please do not hesitate to contact us.

Sincerely,

McPHAIL ASSOCIATES, LLC

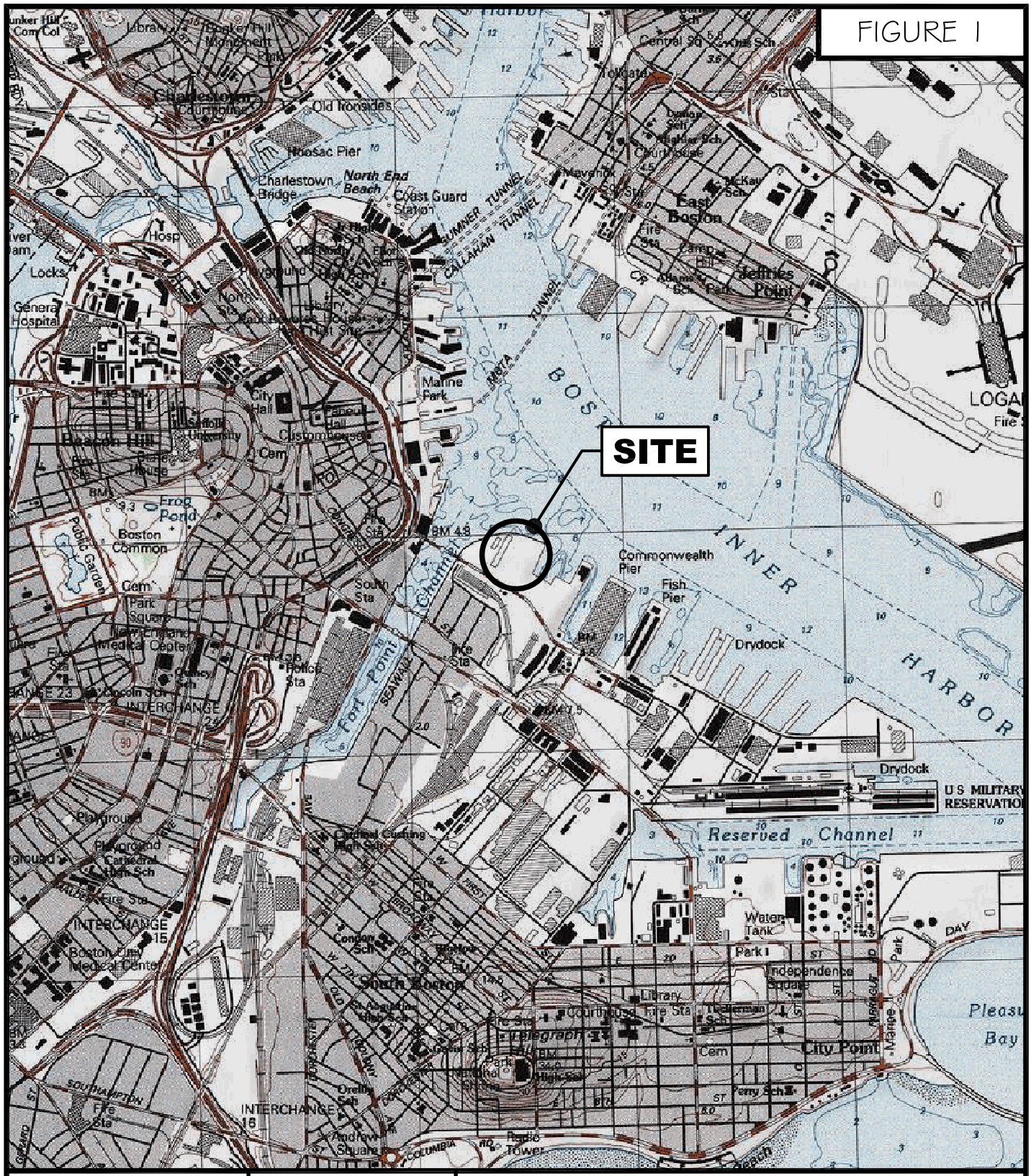
Joseph S. Wold

William J. Burns, L.S.P.

N:\Working Documents\Reports\4426 Parcel E_RGP_051219 Rev 1docx.docx

JSW/bed/wjb

FIGURE 1



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N

SCALE 1:25,000

PROJECT LOCATION PLAN

FAN PIER

BOSTON MASSACHUSETTS

FIGURE 2

NORTH

PARCEL D

PARCEL B

PARCEL F

APPROXIMATE LIMITS OF SUBJECT SITE

APPROXIMATE LOCATION OF DISCHARGE

E-1 E-2 E-2A E-2B E-2C E-2D E-3 E-4 E-5 E-6 (OW) E-7 E-8 E-9 E-10 E-11 E-12 E-13 E-14 E-15 (OW) E-16

LIMIT OF 100 YEAR FLOOD PLAIN ZONE AE ELEVATION=9.00(NAVD88)

(10) EXPOSED 4"ø PVC DUCTS; WIRES CUT

R=15.62 FULL/WATER NPV A I=10.5 B I=10.6

R=15.03 I=11.7

INV=11.73 10"PVC

INV=12.75 4"PVC

INV=12 10"PVC

HISTORIC MARKER (CONCRETE)

BITUMINOUS CONCRETE PAVEMENT

GRAVEL

GRASS

STONE

GRANITE SEAWALL

CONCRETE PAVERS

S58°06'49"E 160.00'

LEGEND

⊕ — APPROXIMATE LOCATION OF BORING PERFORMED BY CARR-DEE CORP. DURING THE PERIOD OF JULY 23 THROUGH AUGUST 15, 2018 FOR McPHAIL ASSOCIATES, LLC

(OW) — INDICATES OBSERVATION WELL INSTALLED WITHIN COMPLETED BOREHOLE

REFERENCE: THIS PLAN WAS PREPARED FROM A 20-SCALE DRAWING ENTITLED, "TOPOGRAPHIC PLAN OF LAND" DATED JANUARY 17, 2007 BY NITSCH ENGINEERING, A 50-SCALE DRAWING ENTITLED, "ELEVATION CONTOURS OF TOP NATURAL INORGANIC SOIL" DATED MARCH 1, 2004 PREPARED BY HALEY AND ALDRICH, INC. AND SCHEMATIC DRAWINGS DATED JULY 3, 2018 PREPARED BY ELKUS MANFREDI ARCHITECTS

GRAPHIC SCALE

30 0 30 60

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10 FAN PIER BOULEBAR PARCEL E

BOSTON MASSACHUSETTS

DISCHARGE LOCATION PLAN

FOR

TURNER CONSTRUCTION COMPANY & 10 FAN PIER BOULEVARD LLC

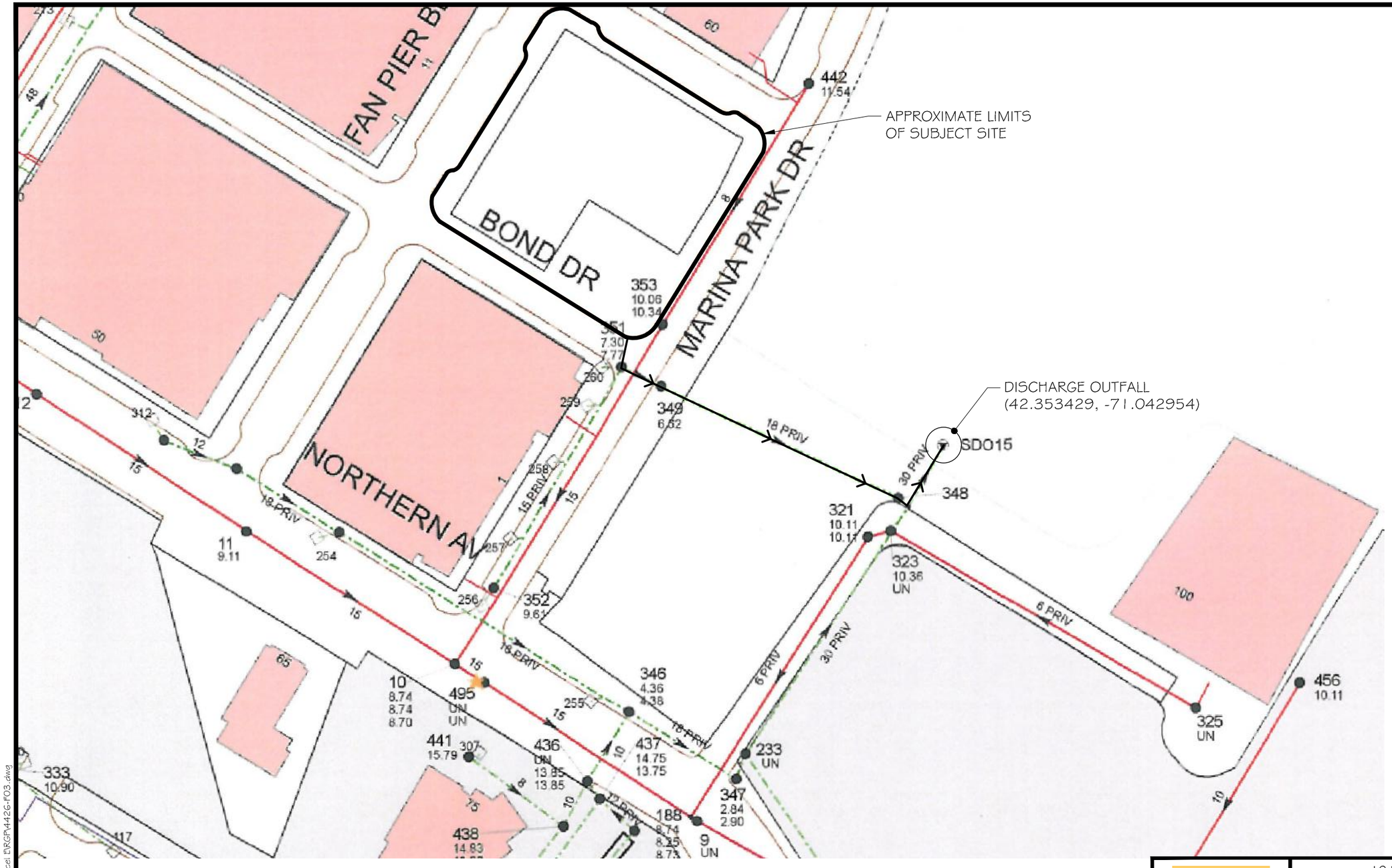
BY

McPHAIL ASSOCIATES, LLC

Date: MAY 2019	Dwn: F.G.P.	Chkd: J.S.W.	Scale: 1" = 30'
Project No: 4426			

FILE NAME: N:\Acad\JOBS\4426\Parcel E\RGP\4426-F02.dwg

FIGURE 3



REFERENCE: THIS PLAN WAS PREPARED FROM A 1"=80' SCALE DRAWING GENERATED FROM THE BOSTON WATER AND SEWER DATABASE ON MAY 24, 2017

GRAPHIC SCALE

80 0 80 160

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10 FAN PIER BOULEBAR PARCEL E
BOSTON MASSACHUSETTS

DISCHARGE LOCATION PLAN

FOR

TURNER CONSTRUCTION COMPANY & 10 FAN PIER BOULEVARD LLC

BY

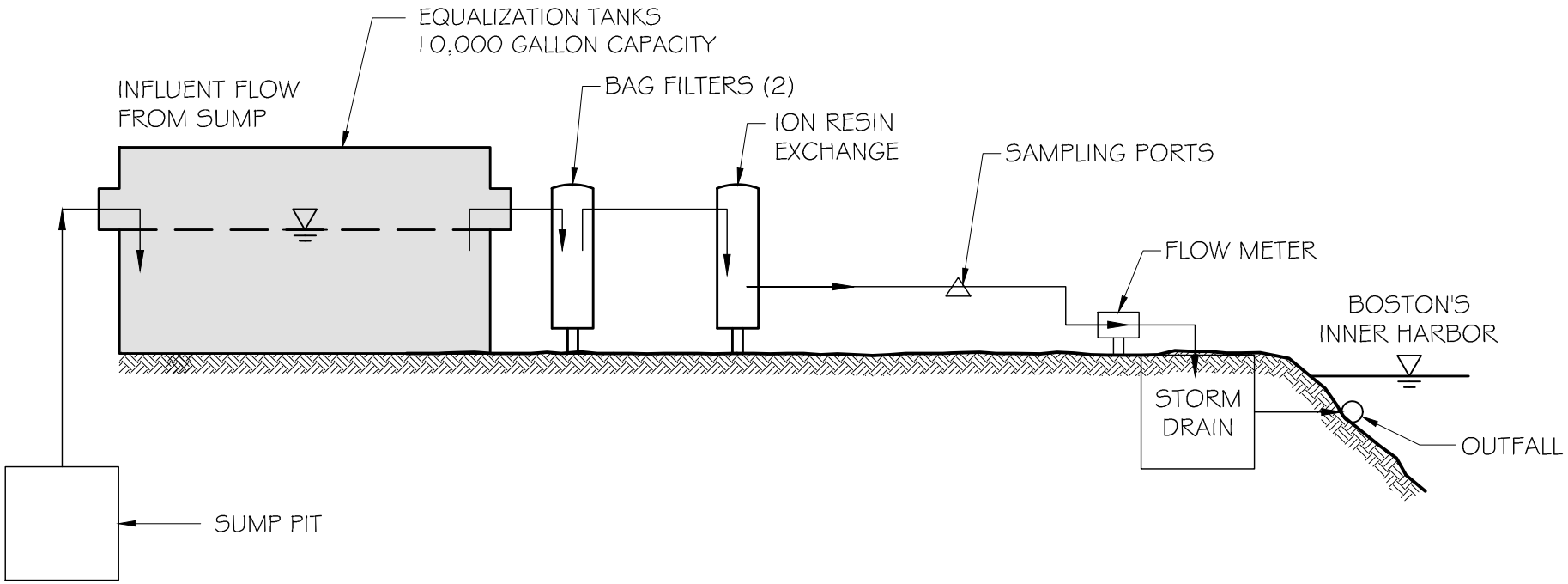
McPHAIL ASSOCIATES, LLC

Date: JUNE 2019	Dwn: F.G.P.	Chkd: J.S.W.	Scale: 1" = 80'
Project No: 4426			

FILE NAME: N:\Acad\OBS\4426\Parcel E\RGP4426-F03.dwg

FILE NAME: N:\Acad\JOBS\4426\Parcel E\RGP\4426-F04.dwg

FIGURE 4



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10 FAN PIER BOULEBAR PARCEL E

BOSTON MASSACHUSETTS

SCHEMATIC OF TREATMENT SYSTEM

FOR

TURNER CONSTRUCTION COMPANY & 10 FAN PIER BOULEVARD LLC

BY

McPHAIL ASSOCIATES, LLC

CONSULTING GEOTECHNICAL ENGINEERS

Date: MAY 2019	Dwn: F.G.P.	Chkd: J.S.W.	Scale: N.T.S.
Project No: 4426			

Table 1
Labratory Analytical Results - Groundwater
E-15 (OW)

10 Fan Pier Boulevard - Parcel E
Boston, MA
Project No.4426

LOCATION	EPA - Saltwater Aquatic Life Chronic Criteria	Parcel E RGP Sample E-15 (OW)
SAMPLING DATE		4/17/2019
LAB SAMPLE ID		L1915805-01
SAMPLE TYPE		WATER
General Chemistry (ug/l)		
Chlorine, Total Residual		ND(20)
Chromium, Hexavalent	50	ND(10)
Chromium, Trivalent		ND(10)
Cyanide, Total	1	**6**
Nitrogen, Ammonia		4520
pH (SU)		7.9
Phenolics, Total		ND(30)
Solids, Total Suspended		ND(6000)
TPH, SGT-HEM		ND(4000)
Salinity		2.60
Chloride	230000	**1250000**
Total Metals (ug/l)		
Antimony, Total		ND(4)
Arsenic, Total	150	2.54
Cadmium, Total	0.25	ND(0.2)
Chromium, Total		ND(1)
Copper, Total		ND(1)
Iron, Total	1000	311
Lead, Total	2.5	ND(1)
Mercury, Total	0.77	ND(0.2)
Nickel, Total	52	ND(2)
Selenium, Total	5	ND(5)
Silver, Total		ND(0.4)
Zinc, Total	120	ND(10)
Disolved Metals (ug/l)		
Arsenic, Dissolved		ND(5)
Barium, Dissolved		131
Vanadium, Dissolved		ND(10)
Polychlorinated Biphenyls (ug/l)		
SUM		ND(1)
Semivolatile Organics (ug/l)		
Anthracene		0.49
Bis(2-ethylhexyl)phthalate		4
Fluoranthene		0.68
Fluorene		1.2
Naphthalene		0.24
Phenanthrene		0.64
Volatile Organics (ug/l)		
SUM		ND

ND - Not detected in excess of the detection limit
(#) - Detection limit
Bold - signifies exceedance levels
Tested compounds not shown do not exceed labratory method detection limits

McPhail Associates, LLC

Table 2
Labratory Analytical Results - Surface Water
Boston Inner Harbor

10 Fan Pier Boulevard - Parcel E
Boston, MA
Project No.4426

LOCATION	EPA - Saltwater Aquatic Life Chronic Criteria	Inner Harbor	Inner Harbor
SAMPLING DATE		4/17/2019	4/30/2019
LAB SAMPLE ID		L1915805-02	L1917806-01
SAMPLE TYPE		WATER	WATER
General Chemistry (ug/l)			
Cyanide, Total	5.2	-	-
Nitrogen, Ammonia		-	180
pH (SU)		7.9	-
Salinity		23	-
Hardness		76900	-
Total Metals (ug/l)			
Antimony, Total		ND(20)	-
Arsenic, Total	36	ND(5)	-
Cadmium, Total	8.8	ND(1)	-
Chromium, Total		ND(5)	-
Copper, Total	3.1	ND(5)	-
Iron, Total		136	-
Lead, Total	8.1	ND(5)	-
Mercury, Total	0.94	ND(0.2)	-
Nickel, Total	8.2	ND(10)	-
Selenium, Total	71	ND(25)	-
Silver, Total		ND(2)	-
Zinc, Total	81	ND(50)	-

ND - Not detected in excess of the detection limit
(#) - Detection limit
Bold - signifies exceedance levels
Tested compounds not shown do not exceed labratory method detection limits

McPhail Assocaites, LLC

APPENDIX A:

LIMITATIONS

LIMITATIONS

The purpose of this report is to present a summary of environmental conditions, including the results of testing of groundwater samples obtained from a monitoring well located on the property located at 10 Fan Pier Boulevard in Boston, Massachusetts in support of an application for approval of permanent discharge of groundwater into surface waters of the Commonwealth of Massachusetts under EPA's Massachusetts Remediation General Permit MAG910000.

The observations were made under the conditions stated in this report. The conclusions presented above were based on these observations. If variations in the nature and extent of subsurface conditions between the spaced subsurface explorations become evident in the future, it will be necessary to re-evaluate the conclusions presented herein after performing on-site observations and noting the characteristics of any variations.

The conclusions submitted in this report are based in part upon analytical data obtained from analysis of groundwater samples, and are contingent upon their validity. The data have been reviewed, and interpretations have been made in the text. It should also be noted that fluctuations in the types and levels of contaminants and variations in their flow paths may occur due to changes in seasonal water table, past practices used in disposal and other factors.

Laboratory analyses have been performed for specific constituents during the course of this assessment, as described in the text. However, it should be noted that additional constituents not searched for during the current study may be present in soil and/or groundwater at the site.

This report and application have been prepared on behalf of and for the exclusive use of 10 Fan Pier Development LLC. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, other than the submission to relevant governmental agencies, nor used in whole or in part by any other party without prior written consent of McPhail Associates, LLC.

APPENDIX B:

NOTICE OF INTENT - NPDES REMEDIATION GENERAL PERMIT

II. Suggested Format for the Remediation General Permit Notice of Intent (NOI)

A. General site information:

<table>
<tr><td rowspan="2">1. Name of site:
10 Fan Pier Boulevard</td><td colspan="3">Site address: 10 Fan Pier Boulevard
Street:</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02210</td></tr>
<tr><td rowspan="4">2. Site owner
10 Fan Pier Boulevard LLC

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: James Heighton</td></tr>
<tr><td colspan="2">Telephone: (617) 737 4100</td><td>Email: jheighton@falloncompany.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: One Marina Park Drive</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02210</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner

Turner Construction Company</td><td colspan="3">Contact Person: AJ Millson</td></tr>
<tr><td colspan="2">Telephone: 617-719-6248</td><td>Email: amillson@tcco.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: Two Seaport Lane, Suite 200</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02210</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:

NPDES permit is (check all that apply: ■ RGP ☐ DGP ☐ CGP
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s): 3-19647 & 3-35368
☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:
☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Boston Inner Harbor	MA70-02	SB

Receiving water is (check any that apply): ☐ Outstanding Resource Water ☐ Ocean Sanctuary ☐ territorial sea ☐ Wild and Scenic River

2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): ■ Yes ☐ No

Are sensitive receptors present near the site? (check one): ☐ Yes ☐ No
If yes, specify:

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP.

Boston Inner Harbor MA70-02 - See Appendix C for further information

4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.	0
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.	0

6. Has the operator received confirmation from the appropriate State for the 7Q10and dilution factor indicated? (check one): ■ Yes ☐ No
If yes, indicate date confirmation received: 0

7. Has the operator attached a summary of receiving water sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ■ Yes ☐ No

C. Source water information:

1. Source water(s) is (check any that apply):

■ Contaminated groundwater Has the operator attached a summary of influent sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ■ Yes ☐ No	☐ Contaminated surface water Has the operator attached a summary of influent sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ☐ Yes ☐ No	☐ The receiving water ☐ A surface water other than the receiving water; if so, indicate waterbody:	☐ Potable water; if so, indicate municipality or origin: ☐ Other; if so, specify:

2. Source water contaminants: ammonia, barium, cyanide, arsenic, iron, anthracene, bis(2-ethylhexyl)phthalate, fluoranthene, fluorene, naphthalene	
a. For source waters that are contaminated groundwater or contaminated surface water, indicate are any contaminants present that are not included in the RGP? (check one): ☐ Yes ■ No If yes, indicate the contaminant(s) and the maximum concentration present in accordance with the instructions in Appendix VIII.	b. For a source water that is a surface water other than the receiving water, potable water or other, indicate any contaminants present at the maximum concentration in accordance with the instructions in Appendix VIII? (check one): ☐ Yes ☐ No
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): ☐ Yes ■ No	

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ☐ Existing discharge ■ New discharge ☐ New source	
Outfall(s): SDO 15	Outfall location(s): (Latitude, Longitude) 42.353429, -71.042954
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Discharge indirectly into Boston Inner Harbor through BWSC system ☐ A private storm sewer system ■ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ■ Yes ☐ No See Appendix B for further information Has the operator has received permission from the owner to use such system for discharges? (check one): ☐ Yes ■ No, if so, explain, with an estimated timeframe for obtaining permission: Upon approval of this NOI Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ■ Yes ☐ No See Appendix B for further information	
Provide the expected start and end dates of discharge(s) (month/year): Temporary Treatment System 06/2019 - 05/2020 Indicate if the discharge is expected to occur over a duration of: ■ less than 12 months ☐ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

<table>
<tr><td>2. Activity Category: (check all that apply)</td><td colspan="2">3. Contamination Type Category: (check all that apply)</td></tr>
<tr><td rowspan="4">☐ I – Petroleum-Related Site Remediation
☐ II – Non-Petroleum-Related Site Remediation
■ III – Contaminated Site Dewatering
☐ IV – Dewatering of Pipelines and Tanks
☐ V – Aquifer Pump Testing
☐ VI – Well Development/Rehabilitation
☐ VII – Collection Structure Dewatering/Remediation
☐ VIII – Dredge-Related Dewatering</td><td colspan="2">a. If Activity Category I or II: (check all that apply)

☐ A. Inorganics
☐ B. Non-Halogenated Volatile Organic Compounds
☐ C. Halogenated Volatile Organic Compounds
☐ D. Non-Halogenated Semi-Volatile Organic Compounds
☐ E. Halogenated Semi-Volatile Organic Compounds
☐ F. Fuels Parameters</td></tr>
<tr><td colspan="2">b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)</td></tr>
<tr><td>■ G. Sites with Known Contamination</td><td>☐ H. Sites with Unknown Contamination</td></tr>
<tr><td>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)

■ A. Inorganics
☐ B. Non-Halogenated Volatile Organic Compounds
☐ C. Halogenated Volatile Organic Compounds
■ D. Non-Halogenated Semi-Volatile Organic Compounds
☐ E. Halogenated Semi-Volatile Organic Compounds
☐ F. Fuels Parameters</td><td>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</td></tr>
</table>

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✔	1	121,4500	75	4.52	4.52	Report mg/L	---
Chloride		✔	1	443000	500	1250000	1250000	Report µg/l	---
Total Residual Chlorine	✔		1	121,4500C	20	<DL	<DL	0.2 mg/L	
Total Suspended Solids	✔		1	1212540D	5000	<DL	<DL	30 mg/L	
Antimony	✔		1	1,6020A	4	<DL	<DL	206 µg/L	
Arsenic		✔	1	1,6020A	0.5	2.54	2.54	104 µg/L	
Cadmium	✔		1	1,6020A	2	<DL	<DL	10.2 µg/L	
Chromium III	✔		1	1,6020A	1	<DL	<DL	323 µg/L	
Chromium VI	✔		1	1,6020A	1	<DL	<DL	323 µg/L	
Copper	✔		1	1,6020A	1	<DL	<DL	242 µg/L	
Iron		✔	1	19200.7	500	311	311	5,000 µg/L	
Lead	✔		1	1,6020A	0.5	<DL	<DL	160 µg/L	
Mercury	✔		1	3,245.1	0.2	<DL	<DL	0.739 µg/L	
Nickel	✔		1	1,6020A	0.5	<DL	<DL	1,450 µg/L	
Selenium	✔		1	1,6020A	5	<DL	<DL	235.8 µg/L	
Silver	✔		1	1,6020A	0.4	<DL	<DL	35.1 µg/L	
Zinc	✔		1	1,6020A	10	<DL	<DL	420 µg/L	
Cyanide		✔	1	121,4500C	5	6	6	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✔		1	128,624.1	1.0	<DL	<DL	100 µg/L	---
Benzene	✔		1	128,624.1	1.0	<DL	<DL	5.0 µg/L	---
1,4 Dioxane	✔		1	128,624.1	50	<DL	<DL	200 µg/L	---
Acetone	✔		1	128,624.1	10	<DL	<DL	7.97 mg/L	---
Phenol	✔		1	128,624.1	2.0	<DL	<DL	1,080 µg/L	

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✔		0					4.4 µg/L	
1,2 Dichlorobenzene	✔		0					600 µg/L	---
1,3 Dichlorobenzene	✔		0					320 µg/L	---
1,4 Dichlorobenzene	✔		0					5.0 µg/L	---
Total dichlorobenzene	✔		0					763 µg/L in NH	---
1,1 Dichloroethane	✔		0					70 µg/L	---
1,2 Dichloroethane	✔		0					5.0 µg/L	---
1,1 Dichloroethylene	✔		0					3.2 µg/L	---
Ethylene Dibromide	✔		0					0.05 µg/L	---
Methylene Chloride	✔		0					4.6 µg/L	---
1,1,1 Trichloroethane	✔		0					200 µg/L	---
1,1,2 Trichloroethane	✔		0					5.0 µg/L	---
Trichloroethylene	✔		0					5.0 µg/L	---
Tetrachloroethylene	✔		0					5.0 µg/L	
cis-1,2 Dichloroethylene	✔		0					70 µg/L	---
Vinyl Chloride	✔		0					2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	18270D-SI	5.0	<DL	<DL	190 µg/L	
Diethylhexyl phthalate	✔		1	18270D-SI	5.0	<DL	<DL	101 µg/L	
Total Group I PAHs	✔		1	18270D-SI	0.10	<DL	<DL	1.0 µg/L	---
Benzo(a)anthracene	✔		1	18270D-SI	0.10	<DL	<DL	As Total PAHs	
Benzo(a)pyrene	✔		1	18270D-SI	0.10	<DL	<DL		
Benzo(b)fluoranthene	✔		1	18270D-SI	0.10	<DL	<DL		
Benzo(k)fluoranthene	✔		1	18270D-SI	0.10	<DL	<DL		
Chrysene	✔		1	18270D-SI	0.10	<DL	<DL		
Dibenzo(a,h)anthracene	✔		1	18270D-SI	0.10	<DL	<DL		
Indeno(1,2,3-cd)pyrene	✔		1	18270D-SI	0.10	<DL	<DL		

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs		✔	1	18270D-SI	0.10	7.1	7.1	100 µg/L	---
Naphthalene		✔	1	129,625.1	2.5	0.24	0.24	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	127,608.3	0.250	<DL	<DL	0.000064 µg/L	---
Pentachlorophenol	✔		1	18270D-SI	0.80	<DL	<DL	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	74,1664A	400	<DL	<DL	5.0 mg/L	---
Ethanol	✔		0					Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	1,8260C	1.0	<DL	<DL	70 µg/L	
tert-Butyl Alcohol	✔		1	1,8260C	10	<DL	<DL	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	1,8260C	2.0	<DL	<DL	90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
pH - Influent		✔	1	121,4500H		7.9			
Salinity - Influent		✔	1		660	2.6	2.6		
Temp - Influent		✔	1			12.84 C			
pH - Receiving Water		✔	1	121,4500H		8.4			
Salinity - Receiving Water		✔	1			20			
Temp - Receiving Water		✔	1			11.68 C			
Arsenic, Dissolved	✔		1	97,6010D	.000005	<DL	<DL		
Barium, Dissolved		✔	1	97,6010D	.000010	.000131	.000131		
Vanadium Dissolved	✔		1	97,6010D	.000010	<DL	<DL		

E. Treatment system information

1. Indicate the type(s) of treatment that will be applied to effluent prior to discharge: (check all that apply)

☐ Adsorption/Absorption ☐ Advanced Oxidation Processes ☐ Air Stripping ☐ Granulated Activated Carbon ("GAC")/Liquid Phase Carbon Adsorption
■ Ion Exchange ☐ Precipitation/Coagulation/Flocculation ■ Separation/Filtration ☐ Other; if so, specify:

2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.
Settling tank and bag filters, and granulated activated carbon filter

Identify each major treatment component (check any that apply):
■ Fractionation tanks☐ Equalization tank ☐ Oil/water separator ☐ Mechanical filter ☐ Media filter
☐ Chemical feed tank ☐ Air stripping unit ■ Bag filter ■ Other; if so, specify: ion resin media vessels

Indicate if either of the following will occur (check any that apply):
☐ Chlorination ☐ De-chlorination

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: Frac Tank Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	100
Provide the proposed maximum effluent flow in gpm.	100
Provide the average effluent flow in gpm.	50
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

4. Has the operator attached a schematic of flow in accordance with the instructions in E, above? (check one): ■ Yes ☐ No

F. Chemical and additive information

1. Indicate the type(s) of chemical or additive that will be applied to effluent prior to discharge or that may otherwise be present in the discharge(s): (check all that apply)

☐ Algaecides/biocides ☐ Antifoams ☐ Coagulants ☐ Corrosion/scale inhibitors ☐ Disinfectants ☐ Flocculants ☐ Neutralizing agents ☐ Oxidants ☐ Oxygen ☐ scavengers ☐ pH conditioners ☐ Bioremedial agents, including microbes ☐ Chlorine or chemicals containing chlorine ☐ Other; if so, specify:
n/a

2. Provide the following information for each chemical/additive, using attachments, if necessary:

a. Product name, chemical formula, and manufacturer of the chemical/additive;
b. Purpose or use of the chemical/additive or remedial agent;
c. Material Safety Data Sheet (MSDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive;
d. The frequency (hourly, daily, etc.), duration (hours, days), quantity (maximum and average), and method of application for the chemical/additive;
e. Any material compatibility risks for storage and/or use including the control measures used to minimize such risks; and
f. If available, the vendor's reported aquatic toxicity (NOAEL and/or LC50 in percent for aquatic organism(s)).

3. Has the operator attached an explanation which demonstrates that the addition of such chemicals/additives may be authorized under this general permit in accordance with the instructions in F, above? (check one): ☐ Yes ☐ No; if no, has the operator attached data that demonstrates each of the 126 priority pollutants in CWA Section 307(a) and 40 CFR Part 423.15(j)(1) are non-detect in discharges with the addition of the proposed chemical/additive? (check one): ☐ Yes ☐ No

G. Endangered Species Act eligibility determination

1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:

■ **FWS Criterion A**: No endangered or threatened species or critical habitat are in proximity to the discharges or related activities or come in contact with the "action area".

☐ **FWS Criterion B**: Formal or informal consultation with the FWS under section 7 of the ESA resulted in either a no jeopardy opinion (formal consultation) or a written concurrence by FWS on a finding that the discharges and related activities are "not likely to adversely affect" listed species or critical habitat (informal consultation). Has the operator completed consultation with FWS? (check one): ☐ Yes ☐ No; if no, is consultation underway? (check one): ☐ Yes ☐ No

☐ **FWS Criterion C**: Using the best scientific and commercial data available, the effect of the discharges and related activities on listed species and critical habitat have been evaluated. Based on those evaluations, a determination is made by EPA, or by the operator and affirmed by EPA, that the discharges and related activities will have "no effect" on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the FWS. This determination was made by: (check one) ☐ the operator ☐ EPA ☐ Other; if so, specify:

NMFS Supplemental Information
•The discharge will be to the marine waters of Boston Harbor in Massachusetts and will not likely impact the following watersheds/rivers; Connecticut, Merrimack, Taunton or Piscataqua.
•Online and historical data indicates the possible presence of the following Marine Mammals and Reptiles at varying life stages in the Boston Harbor; Loggerhead Sea Turtle, Kemp's Ridley Sea Turtle, Leatherback Sea Turtle, Green Sea Turtle, Hawksbill Sea Turtle, North Atlantic Right Whale, and/or Fin Whale .
•No formal or informal consultation with NMFS has been made at this time, however it is not believed that permitted discharge into Boston Harbor would adversely affect the local marine fauna listed above.

■ **NMFS Criterion**: A determination made by EPA is affirmed by the operator that the discharges and related activities will have "no effect" or are "not likely to adversely affect" any federally threatened or endangered listed species or critical habitat under the jurisdiction of NMFS and will not result in any take of listed species. Has the operator previously completed consultation with NMFS? (check one): ■ Yes ☐ No

2. Has the operator attached supporting documentation of ESA eligibility in accordance with the instructions in Appendix I, and G, above? (check one): ■ Yes ☐ No

Does the supporting documentation include any written concurrence or finding provided by the Services? (check one): ■ Yes ☐ No; if yes, attach.

H. National Historic Preservation Act eligibility determination

1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:

■ **Criterion A**: No historic properties are present. The discharges and discharge-related activities (e.g., BMPs) do not have the potential to cause effects on historic properties.

☐ **Criterion B**: Historic properties are present. Discharges and discharge related activities do not have the potential to cause effects on historic properties.

☐ **Criterion C**: Historic properties are present. The discharges and discharge-related activities have the potential to have an effect or will have an adverse effect on historic properties.

2. Has the operator attached supporting documentation of NHPA eligibility in accordance with the instructions in H, above? (check one): ■ Yes ☐ No

Does the supporting documentation include any written agreement with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (TPHO), or other tribal representative that outlines measures the operator will carry out to mitigate or prevent any adverse effects on historic properties? (check one): ☐ Yes ☐ No

I. Supplemental information

Describe any supplemental information being provided with the NOI. Include attachments if required or otherwise necessary.

NMFS Supporting Information

Has the operator attached data, including any laboratory case narrative and chain of custody used to support the application? (check one): ■ Yes ☐ No

Has the operator attached the certification requirement for the Best Management Practices Plan (BMPP)? (check one): ■ Yes ☐ No

8. Certification Requirement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

BMPP certification statement: A BMPP Statement has been implemented in accordance with good engineering practices following Part 2.5 of the RGP.

Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ☐ No ■ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ■ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ■ NA ☐

Signature: AJ Millson Date: 5/29/19

Print Name and Title: AJ Millson, Project Executive

APPENDIX C:

DEP PRIORITY RESOURCES MAP

DILUTION FACTOR AND WQBEL CALCULATIONS

ADDITIONAL NOI SUPPORT INFORMATION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To:
Consultation Code: 05E1NE00-2019-SLI-1533
Event Code: 05E1NE00-2019-E-03709
Project Name: Fan Pier Parcel E

April 25, 2019

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2019-SLI-1533

Event Code: 05E1NE00-2019-E-03709

Project Name: Fan Pier Parcel E

Project Type: DEVELOPMENT

Project Description: Larger than an acre

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.35377107947581N71.04478277712056W

Counties: Suffolk, MA

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

MassDEP - Bureau of Waste Site Cleanup

Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

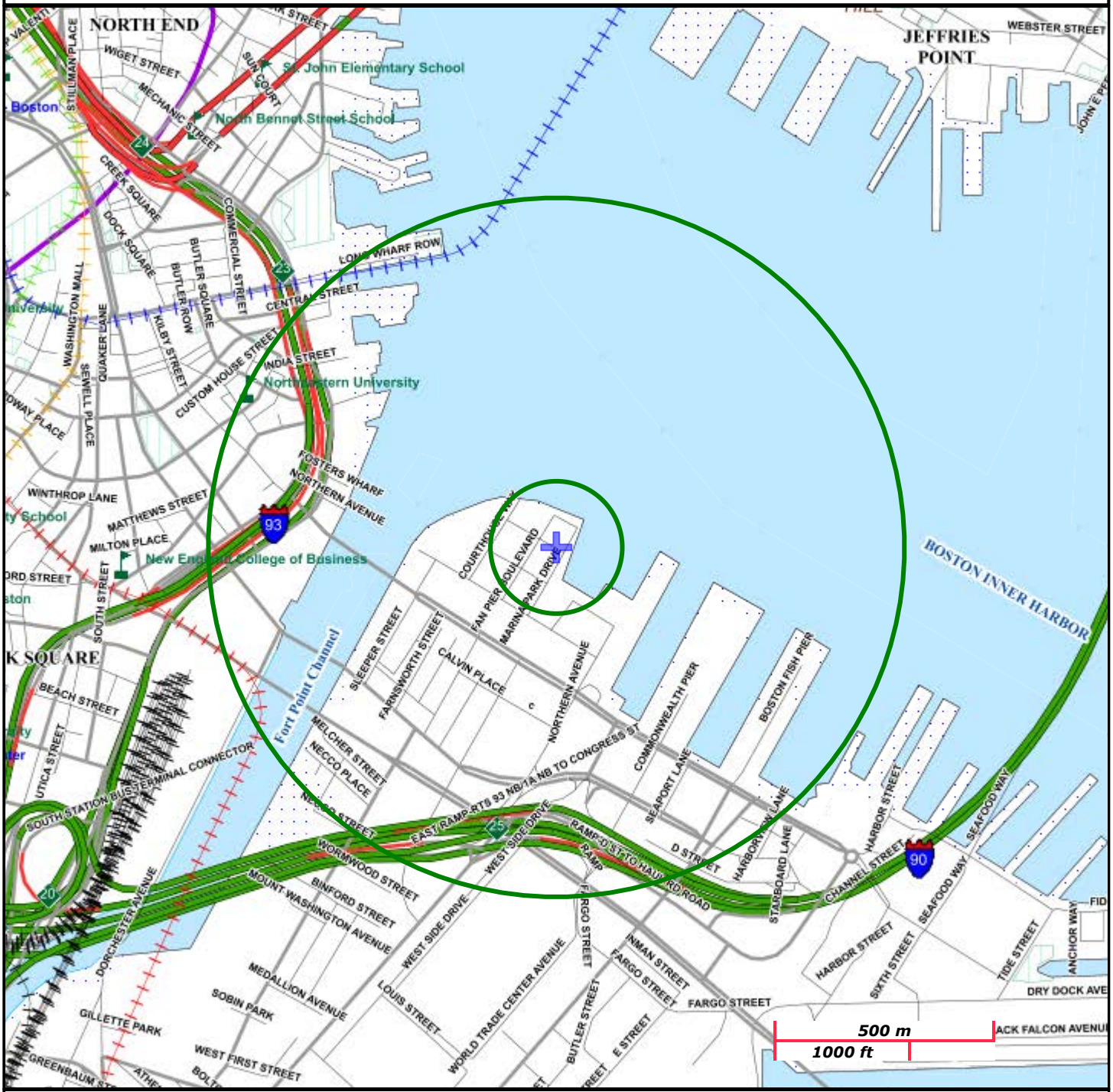
Site Information:

10 FAN PIER BLVD BOSTON, MA

NAD83 UTM Meters:
4691116mN , 331619mE (Zone: 19)
May 23, 2019

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: http://www.mass.gov/mgis/.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail

Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct

Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam

Aquifers: Medium Yield, High Yield, EPA Sole Source

Non Potential Drinking Water Source Area: Medium, High (Yield)

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential

Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: South Boston East; Street No: 10; Street Name: Fan Pier Blvd; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

APPENDIX D:

LABORATORY ANALYTIC DATA - GROUNDWATER

JOB: L1915805 REPORT STYLE: Data Usability Report
0010: Alpha Analytical Report Cover Page - OK
0015: Sample Cross Reference Summary - OK
0060: Case Narrative - OK
0100: Volatiles Cover Page - OK
0110: Volatiles Sample Results - OK
0120: Volatiles Method Blank Report - OK
0130: Volatiles LCS Report - OK
0180: Semivolatiles Cover Page - OK
0190: Semivolatiles Sample Results - OK
0200: Semivolatiles Method Blank Report - OK
0210: Semivolatiles LCS Report - OK
0700: PCBs Cover Page - OK
0710: PCBs Sample Results - OK
0720: PCBs Method Blank Report - OK
0730: PCBs LCS Report - OK
1005: Metals Sample Results - OK
1010: Metals Method Blank Report - OK
1020: Metals LCS Report - OK
1040: Metals Matrix Spike Report - OK
1050: Metals Duplicate Report - OK
1180: Inorganics Cover Page - OK
1200: Wet Chemistry Sample Results - OK
1210: Wet Chemistry Method Blank Report - OK
1220: Wet Chemistry LCS Report - OK
1240: Wet Chemistry Matrix Spike Report - OK
1250: Wet Chemistry Duplicate Report - OK
5100: Sample Receipt & Container Information Report - OK
5200: Glossary - OK
5400: References - OK

ANALYTICAL REPORT

Lab Number:	L1915805
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL E
Project Number:	4426.9.E3
Report Date:	04/25/19

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

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1915805-01	E-15	WATER	BOSTON, MA	04/17/19 11:30	04/17/19
L1915805-02	INNER HARBOR	WATER	BOSTON, MA	04/17/19 11:15	04/17/19

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1915805
Project Number:	4426.9.E3	**Report Date:**	04/25/19

Case Narrative

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

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

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

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

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

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

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3
Lab Number: L1915805
Report Date: 04/25/19

Case Narrative (continued)

Report Submission

April 25, 2019: This is a preliminary report.

Semivolatile Organics by SIM

L1915805-01: The sample has elevated detection limits due to the dilution required by the sample matrix.

Total Metals

L1915805-02: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by the high concentrations of non-target elements.

The WG1228370-3 MS recovery for antimony (131%), performed on L1915805-02, recovered outside the 70-130% acceptance criteria. The result for this analyte is considered suspect due to either the heterogeneous nature of the sample or matrix interference.

Solids, Total Suspended

L1915805-01: The sample has elevated detection limits due to limited sample volume available for analysis.

Chlorine, Total Residual

WG1227717: A Matrix Spike and Laboratory Duplicate could not be performed due to insufficient sample volume available for analysis.

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

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 04/25/19

ORGANICS

VOLATILES

Project Name: FAN PIER PARCEL E
Lab Number: L1915805
Project Number: 4426.9.E3
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-01
Client ID: E-15
Sample Location: BOSTON, MA

Date Collected: 04/17/19 11:30
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 04/23/19 11:59
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	1.0	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
Acetone	ND		ug/l	10	--	1
Methyl tert butyl Ether	ND		ug/l	10	--	1
Tert-Butyl Alcohol	ND		ug/l	100	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	100		60-140
Fluorobenzene	107		60-140
4-Bromofluorobenzene	109		60-140

Project Name: FAN PIER PARCEL E
Lab Number: L1915805
Project Number: 4426.9.E3
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-01
Client ID: E-15
Sample Location: BOSTON, MA

Date Collected: 04/17/19 11:30
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 04/23/19 11:59
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	102		60-140
4-Bromofluorobenzene	99		60-140

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3
Lab Number: L1915805
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 04/23/19 11:21
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1228997-12					
Benzene	ND		ug/l	1.0	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
Acetone	ND		ug/l	10	--
Methyl tert butyl Ether	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	100	--
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	99		60-140
Fluorobenzene	107		60-140
4-Bromofluorobenzene	108		60-140

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM
Analytical Date: 04/23/19 11:21
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1229408-4					
1,4-Dioxane	ND		ug/l	50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	102		60-140
4-Bromofluorobenzene	100		60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1228997-11								
Benzene	125		-		65-135	-		61
Toluene	115		-		70-130	-		41
Ethylbenzene	130		-		60-140	-		63
p/m-Xylene	120		-		60-140	-		30
o-xylene	115		-		60-140	-		30
Acetone	70		-		40-160	-		30
Methyl tert butyl Ether	80		-		60-140	-		30
Tert-Butyl Alcohol	65		-		60-140	-		30
Tertiary-Amyl Methyl Ether	85		-		60-140	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	103				60-140
Fluorobenzene	109				60-140
4-Bromofluorobenzene	111				60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1229408-3								
1,4-Dioxane	110		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	102				60-140
4-Bromofluorobenzene	101				60-140

SEMIVOLATILES

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-01
Client ID: E-15
Sample Location: BOSTON, MA

Date Collected: 04/17/19 11:30
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 04/20/19 15:48
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 04/19/19 15:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	4.0		ug/l	2.2	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		42-122
2-Fluorobiphenyl	78		46-121
4-Terphenyl-d14	94		47-138

Project Name: FAN PIER PARCEL E
Lab Number: L1915805
Project Number: 4426.9.E3
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-01 D
Client ID: E-15
Sample Location: BOSTON, MA

Date Collected: 04/17/19 11:30
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 04/24/19 18:30
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 04/19/19 15:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	6.3		ug/l	0.20	--	2
Fluoranthene	0.68		ug/l	0.20	--	2
Naphthalene	0.24		ug/l	0.20	--	2
Benzo(a)anthracene	ND		ug/l	0.20	--	2
Benzo(a)pyrene	ND		ug/l	0.20	--	2
Benzo(b)fluoranthene	ND		ug/l	0.20	--	2
Benzo(k)fluoranthene	ND		ug/l	0.20	--	2
Chrysene	ND		ug/l	0.20	--	2
Acenaphthylene	ND		ug/l	0.20	--	2
Anthracene	0.49		ug/l	0.20	--	2
Benzo(ghi)perylene	ND		ug/l	0.20	--	2
Fluorene	1.2		ug/l	0.20	--	2
Phenanthrene	0.64		ug/l	0.20	--	2
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--	2
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.20	--	2
Pyrene	0.58		ug/l	0.20	--	2
Pentachlorophenol	ND		ug/l	2.0	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	56		25-87
Phenol-d6	44		16-65
Nitrobenzene-d5	103		42-122
2-Fluorobiphenyl	107		46-121
2,4,6-Tribromophenol	96		45-128
4-Terphenyl-d14	74		47-138

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 04/20/19 12:57
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 04/19/19 15:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1228318-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.2	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	51		42-122
2-Fluorobiphenyl	59		46-121
4-Terphenyl-d14	81		47-138

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1-SIM
Analytical Date: 04/22/19 12:33
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 04/19/19 15:45

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1228320-1					
Acenaphthene	ND		ug/l	0.10	--
Fluoranthene	ND		ug/l	0.10	--
Naphthalene	ND		ug/l	0.10	--
Benzo(a)anthracene	ND		ug/l	0.10	--
Benzo(a)pyrene	ND		ug/l	0.10	--
Benzo(b)fluoranthene	ND		ug/l	0.10	--
Benzo(k)fluoranthene	ND		ug/l	0.10	--
Chrysene	ND		ug/l	0.10	--
Acenaphthylene	ND		ug/l	0.10	--
Anthracene	ND		ug/l	0.10	--
Benzo(ghi)perylene	ND		ug/l	0.10	--
Fluorene	ND		ug/l	0.10	--
Phenanthrene	ND		ug/l	0.10	--
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--
Pyrene	ND		ug/l	0.10	--
Pentachlorophenol	ND		ug/l	1.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	31		25-87
Phenol-d6	26		16-65
Nitrobenzene-d5	60		42-122
2-Fluorobiphenyl	54		46-121
2,4,6-Tribromophenol	48		45-128
4-Terphenyl-d14	85		47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1228318-2								
Bis(2-ethylhexyl)phthalate	86		-		29-137	-		30
Butyl benzyl phthalate	96		-		1-140	-		30
Di-n-butylphthalate	89		-		8-120	-		30
Di-n-octylphthalate	94		-		19-132	-		30
Diethyl phthalate	85		-		1-120	-		30
Dimethyl phthalate	89		-		1-120	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	82				42-122
2-Fluorobiphenyl	80				46-121
4-Terphenyl-d14	80				47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1228320-2								
Acenaphthene	66		-		60-132	-		30
Fluoranthene	74		-		43-121	-		30
Naphthalene	60		-		36-120	-		30
Benzo(a)anthracene	69		-		42-133	-		30
Benzo(a)pyrene	67		-		32-148	-		30
Benzo(b)fluoranthene	66		-		42-140	-		30
Benzo(k)fluoranthene	68		-		25-146	-		30
Chrysene	68		-		44-140	-		30
Acenaphthylene	66		-		54-126	-		30
Anthracene	73		-		43-120	-		30
Benzo(ghi)perylene	70		-		1-195	-		30
Fluorene	70		-		70-120	-		30
Phenanthrene	72		-		65-120	-		30
Dibenzo(a,h)anthracene	73		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	70		-		1-151	-		30
Pyrene	82		-		70-120	-		30
Pentachlorophenol	50		-		38-152	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1228320-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	44				25-87
Phenol-d6	36				16-65
Nitrobenzene-d5	81				42-122
2-Fluorobiphenyl	69				46-121
2,4,6-Tribromophenol	61				45-128
4-Terphenyl-d14	91				47-138

PCBS

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-01
Client ID: E-15
Sample Location: BOSTON, MA

Date Collected: 04/17/19 11:30
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 04/23/19 09:38
Analyst: JW

Extraction Method: EPA 608.3
Extraction Date: 04/20/19 23:54
Cleanup Method: EPA 3665A
Cleanup Date: 04/21/19
Cleanup Method: EPA 3660B
Cleanup Date: 04/21/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		37-123	B
Decachlorobiphenyl	79		38-114	B
2,4,5,6-Tetrachloro-m-xylene	69		37-123	A
Decachlorobiphenyl	73		38-114	A

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 04/23/19 08:36
Analyst: WR

Extraction Method: EPA 608.3
Extraction Date: 04/20/19 23:54
Cleanup Method: EPA 3665A
Cleanup Date: 04/21/19
Cleanup Method: EPA 3660B
Cleanup Date: 04/21/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1228634-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	86		37-123	B
Decachlorobiphenyl	94		38-114	B
2,4,5,6-Tetrachloro-m-xylene	82		37-123	A
Decachlorobiphenyl	95		38-114	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1228634-2									
Aroclor 1016	78		-		50-140	-		36	A
Aroclor 1260	77		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81				37-123	B
Decachlorobiphenyl	87				38-114	B
2,4,5,6-Tetrachloro-m-xylene	78				37-123	A
Decachlorobiphenyl	89				38-114	A

METALS

Project Name: FAN PIER PARCEL E
Lab Number: L1915805
Project Number: 4426.9.E3
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-01
Client ID: E-15
Sample Location: BOSTON, MA
Date Collected: 04/17/19 11:30
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00254		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Iron, Total	0.311		mg/l	0.050	--	1	04/19/19 17:55	04/22/19 14:40	EPA 3005A	19,200.7	LC
Lead, Total	ND		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	04/19/19 15:58	04/22/19 20:36	EPA 245.1	3,245.1	EA
Nickel, Total	ND		mg/l	0.00200	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		04/22/19 14:17	NA	107,-	

Project Name: FAN PIER PARCEL E
Lab Number: L1915805
Project Number: 4426.9.E3
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-02
Client ID: INNER HARBOR
Sample Location: BOSTON, MA
Date Collected: 04/17/19 11:15
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.02000	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00500	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00100	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00500	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.00500	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Iron, Total	0.136		mg/l	0.050	--	1	04/19/19 17:55	04/22/19 14:15	EPA 3005A	19,200.7	LC
Lead, Total	ND		mg/l	0.00500	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	04/19/19 15:58	04/22/19 20:42	EPA 245.1	3,245.1	EA
Nickel, Total	ND		mg/l	0.01000	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.02500	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00200	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.05000	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3
Lab Number: L1915805
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1228286-1										
Iron, Total	ND		mg/l	0.050	--	1	04/19/19 17:55	04/22/19 10:15	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1228310-1										
Mercury, Total	ND		mg/l	0.00020	--	1	04/19/19 15:58	04/22/19 20:32	3,245.1	EA

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1228370-1										
Antimony, Total	ND		mg/l	0.00400	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL E

Project Number: 4426.9.E3

Lab Number: L1915805

Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1228286-2								
Iron, Total	101		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1228310-2								
Mercury, Total	108		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1228370-2								
Antimony, Total	101		-		85-115	-		
Arsenic, Total	102		-		85-115	-		
Cadmium, Total	105		-		85-115	-		
Chromium, Total	98		-		85-115	-		
Copper, Total	95		-		85-115	-		
Lead, Total	107		-		85-115	-		
Nickel, Total	98		-		85-115	-		
Selenium, Total	106		-		85-115	-		
Silver, Total	104		-		85-115	-		
Zinc, Total	108		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1228286-3 QC Sample: L1915805-02 Client ID: INNER HARBOR												
Iron, Total	0.136	1	1.10	96		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1228286-7 QC Sample: L1916009-01 Client ID: MS Sample												
Iron, Total	0.118	1	1.26	114		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1228310-3 QC Sample: L1915805-01 Client ID: E-15												
Mercury, Total	ND	0.005	0.00483	97		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1228370-3 QC Sample: L1915805-02 Client ID: INNER HARBOR												
Antimony, Total	ND	0.5	0.6560	**131**	Q	-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1358	113		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05096	100		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.2169	108		-	-		70-130	-		20
Copper, Total	ND	0.25	0.2484	99		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5923	116		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.5070	101		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1293	108		-	-		70-130	-		20
Silver, Total	ND	0.05	0.03804	76		-	-		70-130	-		20
Zinc, Total	ND	0.5	0.4613	92		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1228286-4 QC Sample: L1915805-02 Client ID: INNER HARBOR						
Iron, Total	0.136	0.141	mg/l	4		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1228310-4 QC Sample: L1915805-01 Client ID: E-15						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1228370-4 QC Sample: L1915805-02 Client ID: INNER HARBOR						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	ND	ND	mg/l	NC		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-01
Client ID: E-15
Sample Location: BOSTON, MA

Date Collected: 04/17/19 11:30
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
SALINITY	2.6		SU	2.0	--	1	-	04/18/19 05:30	121,2520B	MA
Solids, Total Suspended	ND		mg/l	6.0	NA	1.2	-	04/18/19 13:45	121,2540D	DR
Cyanide, Total	0.006		mg/l	0.005	--	1	04/18/19 10:50	04/18/19 13:48	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	04/18/19 04:10	121,4500CL-D	MA
pH (H)	7.9		SU	-	NA	1	-	04/18/19 06:50	121,4500H+-B	KF
Nitrogen, Ammonia	4.52		mg/l	0.075	--	1	04/18/19 03:00	04/18/19 21:34	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	04/18/19 15:30	04/18/19 21:30	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	04/19/19 03:30	04/19/19 06:48	4,420.1	GD
Chromium, Hexavalent	ND		mg/l	0.010	--	1	04/18/19 05:30	04/18/19 06:02	1,7196A	MA
Anions by Ion Chromatography - Westborough Lab										
Chloride	1250		mg/l	250	--	500	-	04/19/19 18:07	44,300.0	AU

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-02
Client ID: INNER HARBOR
Sample Location: BOSTON, MA

Date Collected: 04/17/19 11:15
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
SALINITY	23		SU	2.0	--	1	-	04/18/19 05:30	121,2520B	MA
pH (H)	7.9		SU	-	NA	1	-	04/18/19 06:50	121,4500H+-B	KF

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3
Lab Number: L1915805
Report Date: 04/25/19

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: WG1227565-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	04/18/19 03:00	04/18/19 21:12	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1227624-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	04/18/19 05:30	04/18/19 05:58	1,7196A	MA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1227688-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	04/18/19 13:45	121,2540D	DR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1227717-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	04/18/19 04:10	121,4500CL-D	MA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1227738-1										
Cyanide, Total	ND		mg/l	0.005	--	1	04/18/19 10:50	04/18/19 13:33	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1227864-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	04/18/19 15:30	04/18/19 21:30	74,1664A	ML
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1228062-1										
Phenolics, Total	ND		mg/l	0.030	--	1	04/19/19 03:30	04/19/19 06:43	4,420.1	GD
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1228420-1										
Chloride	ND		mg/l	0.500	--	1	-	04/19/19 16:55	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL E

Project Number: 4426.9.E3

Lab Number: L1915805

Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1227565-2								
Nitrogen, Ammonia	89		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1227624-2								
Chromium, Hexavalent	95		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1227703-1								
SALINITY	101		-			-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1227706-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1227717-2								
Chlorine, Total Residual	96		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1227738-2								
Cyanide, Total	93		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1227864-2								
TPH	91		-		64-132	-		34

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL E

Project Number: 4426.9.E3

Lab Number: L1915805

Report Date: 04/25/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1228062-2					
Phenolics, Total	103	-	70-130	-	
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1228420-2					
Chloride	103	-	90-110	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227565-4 QC Sample: L1915805-01 Client ID: E-15												
Nitrogen, Ammonia	4.52	4	8.67	104		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227624-4 QC Sample: L1915805-01 Client ID: E-15												
Chromium, Hexavalent	ND	0.1	0.095	95		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227738-4 QC Sample: L1915612-02 Client ID: MS Sample												
Cyanide, Total	0.005	0.2	0.190	92		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227864-4 QC Sample: L1915412-01 Client ID: MS Sample												
TPH	ND	22.2	18.6	84		-	-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1228062-4 QC Sample: L1915929-01 Client ID: MS Sample												
Phenolics, Total	ND	0.4	0.36	89		-	-		70-130	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1228420-3 QC Sample: L1916161-01 Client ID: MS Sample												
Chloride	354	40	376	**56**	Q	-	-		90-110	-		18

Lab Duplicate Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227565-3 QC Sample: L1915805-01 Client ID: E-15						
Nitrogen, Ammonia	4.52	4.66	mg/l	3		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227624-3 QC Sample: L1915805-01 Client ID: E-15						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227688-2 QC Sample: L1915734-01 Client ID: DUP Sample						
Solids, Total Suspended	5200	4800	mg/l	8		29
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1227703-2 QC Sample: L1915805-02 Client ID: INNER HARBOR						
SALINITY	23	23	SU	0		
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1227706-2 QC Sample: L1915805-02 Client ID: INNER HARBOR						
pH (H)	7.9	7.8	SU	1		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227738-3 QC Sample: L1915612-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227864-3 QC Sample: L1915412-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1228062-3 QC Sample: L1915929-01 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1228420-4 QC Sample: L1916161-01 Client ID: DUP Sample						
Chloride	354	348	mg/l	2		18

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1915805-01A	Vial HCl preserved	A	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L1915805-01B	Vial HCl preserved	A	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L1915805-01C	Vial HCl preserved	A	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L1915805-01D	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		HOLD-504/8011(14)
L1915805-01E	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		HOLD-504/8011(14)
L1915805-01F	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		HOLD-504/8011(14)
L1915805-01G	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1915805-01H	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1915805-01I	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1915805-01J	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1915805-01K	Amber 1000ml HCl preserved	A	NA		2.8	Y	Absent		TPH-1664(28)
L1915805-01L	Amber 1000ml HCl preserved	A	NA		2.8	Y	Absent		TPH-1664(28)
L1915805-01M	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		PCB-608.3(7)
L1915805-01N	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		PCB-608.3(7)
L1915805-01O	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1915805-01P	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1915805-01Q	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1915805-01R	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1915805-01S	Plastic 250ml NaOH preserved	A	>12	>12	2.8	Y	Absent		TCN-4500(14)
L1915805-01T	Plastic 500ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		NH3-4500(28)
L1915805-01U	Plastic 950ml unpreserved	A	7	7	2.8	Y	Absent		TSS-2540(7)

*Values in parentheses indicate holding time in days

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1915805-01V	Plastic 250ml unpreserved	A	7	7	2.8	Y	Absent		CL-300(28),HEXCR-7196(1),SALINITY(28),TRC-4500(1),PH-4500(.01)
L1915805-01X	Amber 950ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		TPHENOL-420(28)
L1915805-02A	Plastic 950ml unpreserved	A	7	7	2.8	Y	Absent		SALINITY(28),PH-4500(.01)
L1915805-02B	Plastic 250ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		ARCHIVE()
L1915805-02C	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)

*Values in parentheses indicate holding time in days

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1915805
Project Number:	4426.9.E3	**Report Date:**	04/25/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1915805
Project Number:	4426.9.E3	**Report Date:**	04/25/19

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.

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

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

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

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

A - Spectra identified as "Aldol 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.

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

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

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

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

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

ND - Not detected at the reporting limit (RL) for the sample.

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

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1915805
Project Number:	4426.9.E3	**Report Date:**	04/25/19

REFERENCES

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

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

74 Method 1664,Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.

107 Alpha Analytical - In-house calculation method.

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

127 Method 608.3: Organochlorine Pesticides and PCBs by GC/HSD, EPA 821-R-16-009, December 2016.

128 Method 624.1: Purgeables by GC/MS, EPA 821-R-16-008, December 2016.

129 Method 625.1: Base/Neutrals and Acids by GC/MS, EPA 821-R-16-007, December 2016.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 4/17/19

ALPHA Job #: L1915805

Project Information

Project Name: Fan Pier Parcel E

Project Location: Boston, MA

Project #: 4426.9.E3

Project Manager: BED

ALPHA Quote #:

Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: (617) 868-1420

Fax:

Email: bdowning@mcphailgeo.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: NPDES RGP

Criteria:

Other Project Specific Requirements/Comments/Detection Limits:

Circle the following if required:

(SALINITY) HARDNESS (PH)

pH + salinity for Both Samples

Sect- A Inorganics: Ammonia, Chloride, TRC,TSS,CrVI,CrIII, Tot-CN, RGP Metals

B- Non-Hal- VOC- 8260, 8260-SIM, Tot. Phenol Sect C- VOC- 8260 & 504

D- 8270/8270-SIM E- PCB's, PCP(8270/8270-SIM) F-TPH, 8260, Sub-Ethanol

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	RGP Metals (200.8) (A)	TSS- (A)	Ammonia (4500 (A))	TCN (A)	HexCr (7196), TRC, Cl- (A)	8260 (B, E, F)/8260SIM (B)	Tphenol-420 (B)	504-EDB (C)	8270/8270SIM- (D, E)	PCB-608- (E)	TPH-1664-(F)	SUB-ETHANOL (F)	Sample Specific Comments	TOTAL # BOTTLES
15805-01	E-15	4/17	11:30		KJM	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☒	☒		20
		4/17				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
-02	Inner Harbor	4/17	11:15		KJM	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		3
Container Type						P	P	P	P	P	V	A	V	A	A	A	V		
Preservative						C/D/A	A	D	E	A	B	D	H	A	H	B	B		

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	4/17/19 2:15PM	[signature] AAL	4/17/19 16:35
[signature] AAL	4/17/19 18:30	[signature] AAL	4/17/19 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. 5-JAN-12)

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Test America (Nashville)
2960 Foster Creighton Drive
Nashville, TN 37204

Alpha Job Number
L1915805

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 603.319.5010 Email: mgulli@alphalab.com	Project Location: MA Project Manager: Melissa Gulli **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L1915805

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	E-15	04-17-19 11:30	WATER	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	Chris Tedeau	4/18/19		
Form No: AL_subcoc				

ANALYTICAL REPORT

Lab Number:	L1920177
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL E
Project Number:	4426.9.E7
Report Date:	05/20/19

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

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

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E7

Lab Number: L1920177
Report Date: 05/20/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1920177-01	E-15 (OW)	GROUNDWATER	BOSTON, MA	05/14/19 10:00	05/14/19

Project Name: FAN PIER PARCEL E **Lab Number:** L1920177

Project Number: 4426.9.E7 **Report Date:** 05/20/19

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.

An affirmative response to questions A through F is 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
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

A response to questions G, H and I is required for "Presumptive Certainty" status		
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)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1920177
Project Number:	4426.9.E7	**Report Date:**	05/20/19

Case Narrative

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

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

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

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

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

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

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E7

Lab Number: L1920177
Report Date: 05/20/19

Case Narrative (continued)

MCP Related Narratives

Dissolved Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

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: Amita Naik

Title: Technical Director/Representative Date: 05/20/19

QC OUTLIER SUMMARY REPORT

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E7

Lab Number: L1920177
Report Date: 05/20/19

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment

There are no QC Outliers associated with this report.

METALS

Project Name: FAN PIER PARCEL E
Lab Number: L1920177
Project Number: 4426.9.E7
Report Date: 05/20/19

SAMPLE RESULTS

Lab ID: L1920177-01
Client ID: E-15 (OW)
Sample Location: BOSTON, MA
Date Collected: 05/14/19 10:00
Date Received: 05/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab											
Arsenic, Dissolved	ND		mg/l	0.005	--	1	05/18/19 10:55	05/20/19 13:00	EPA 3005A	97,6010D	LC
Barium, Dissolved	0.131		mg/l	0.010	--	1	05/18/19 10:55	05/20/19 13:00	EPA 3005A	97,6010D	LC
Vanadium, Dissolved	ND		mg/l	0.010	--	1	05/18/19 10:55	05/20/19 13:00	EPA 3005A	97,6010D	LC

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E7
Lab Number: L1920177
Report Date: 05/20/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG1238653-1										
Arsenic, Dissolved	ND		mg/l	0.005	--	1	05/18/19 10:55	05/20/19 12:23	97,6010D	LC
Barium, Dissolved	ND		mg/l	0.010	--	1	05/18/19 10:55	05/20/19 12:23	97,6010D	LC
Vanadium, Dissolved	ND		mg/l	0.010	--	1	05/18/19 10:55	05/20/19 12:23	97,6010D	LC

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL E

Project Number: 4426.9.E7

Lab Number: L1920177

Report Date: 05/20/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1238653-2 WG1238653-3								
Arsenic, Dissolved	106		108		80-120	2		20
Barium, Dissolved	102		104		80-120	2		20
Vanadium, Dissolved	102		104		80-120	2		20

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E7

Lab Number: L1920177
Report Date: 05/20/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1920177-01A	Plastic 950ml unpreserved	A	7	7	3.4	Y	Absent		-
L1920177-01X	Plastic 120ml HNO3 preserved Filtrates	A	N/A	N/A	3.4	Y	Absent		MCP-AS-6010S-10(180),MCP-BA-6010S-10(180),MCP-V-6010S-10(180)

*Values in parentheses indicate holding time in days

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1920177
Project Number:	4426.9.E7	**Report Date:**	05/20/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1920177
Project Number:	4426.9.E7	**Report Date:**	05/20/19

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.

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

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

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

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

A - Spectra identified as "Aldol 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.

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

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

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

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

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

ND - Not detected at the reporting limit (RL) for the sample.

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

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

REFERENCES

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 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

8 Walkup Drive, Westboro, MA 01581, Tel. 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel. 508-822-9300

Date Rec'd in Lab: 5/14/19

ALPHA Job #: L1920177

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue
Cambridge, MA 02140
Phone: (617) 868-1420
Email: bbowring@McPhailgeo.com

Additional Project Information:

☐ Run TCLP (if triggered)

Project Information

Project Name: Fan Pier Parcel E
Project Location: Boston, MA
Project #: 4426.91E7
Project Manager: BEB
ALPHA Quote #:

Turn-Around Time

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

Report Information - Data Deliverables

☒ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Sample "Sample ID" Nomenclature: B-100, S-1

ALPHA Lab ID (Lab Use Only)	Sample ID	Sample Depth	Sample Matrix	Collection Date	Collection Time	Sampler Initials	Soil Assessment Package IV (less VOC)	VOC: ☐ 8260	Total Solids	SVOC: ☐ PAH	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	TOTAL METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	DISSOLVED METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	METALS: Total Sb,Be,Ni,Tl,V,Zn	☐ PCBs ☐ Pesticides	RGP Section A Inorganics	☒ Dissolved As, Ba, V			SAMPLE INFO Filtration ☐ Field ☒ Lab to do Preservation ☒ Lab to do Sample Comments	TOTAL # BOTTLES
L1920177-01	E-15(ow)		GW	5/14/19	10:00	JM												X				1

Container Type
A=Amber glass
B=Bacteria cup
C=Cube
D=BOD bottle
E=Encore
G=Glass
O=Other
P=Plastic
V=Vial

Sample Material
F=Fill S=Sand
O=Organics C=Clay
N=Natural T=Till
GM=Glaciomarine
GW=Groundwater

Preservative
A=None
B=HCl
C=HNO_3
D=H_2SO_4
E=NaOH
F=MeOH
G=$NaHSO_4$
H=$Na_2S_2O_3$
I=Ascorbix Acid
J=NH_4Cl
K=Zn Acetate
O=Other

RGP Section A Inorganics: Ammonia, Chloride, TRC, TSS, CrVI, CrIII, Total Cyanide, Total RGP Metals

	Container Type												P			
	Preservative												A			

Relinquished By:	Date/Time	Received By:	Date/Time
John Miller	5/14/19 2:30	McPhail Associates secure sample storage for laboratory pick-up	5/14/19 2:30
McPhail Associates secure sample storage for laboratory pick-up	5-14-19 1600	TRC AA	5-14-19 1600
TRC	5-14-19 1805	[illegible]	5/14/19 19:2[illegible]

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

DOC ID: 25188 Rev 0 (11/26/2017)

APPENDIX E:

LABORATORY ANALYTICAL DATA – SURFACE WATER

JOB: L1915805 REPORT STYLE: Data Usability Report
0010: Alpha Analytical Report Cover Page - OK
0015: Sample Cross Reference Summary - OK
0060: Case Narrative - OK
0100: Volatiles Cover Page - OK
0110: Volatiles Sample Results - OK
0120: Volatiles Method Blank Report - OK
0130: Volatiles LCS Report - OK
0180: Semivolatiles Cover Page - OK
0190: Semivolatiles Sample Results - OK
0200: Semivolatiles Method Blank Report - OK
0210: Semivolatiles LCS Report - OK
0700: PCBs Cover Page - OK
0710: PCBs Sample Results - OK
0720: PCBs Method Blank Report - OK
0730: PCBs LCS Report - OK
1005: Metals Sample Results - OK
1010: Metals Method Blank Report - OK
1020: Metals LCS Report - OK
1040: Metals Matrix Spike Report - OK
1050: Metals Duplicate Report - OK
1180: Inorganics Cover Page - OK
1200: Wet Chemistry Sample Results - OK
1210: Wet Chemistry Method Blank Report - OK
1220: Wet Chemistry LCS Report - OK
1240: Wet Chemistry Matrix Spike Report - OK
1250: Wet Chemistry Duplicate Report - OK
5100: Sample Receipt & Container Information Report - OK
5200: Glossary - OK
5400: References - OK

ANALYTICAL REPORT

Lab Number:	L1915805
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL E
Project Number:	4426.9.E3
Report Date:	04/25/19

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

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1915805-01	E-15	WATER	BOSTON, MA	04/17/19 11:30	04/17/19
L1915805-02	INNER HARBOR	WATER	BOSTON, MA	04/17/19 11:15	04/17/19

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1915805
Project Number:	4426.9.E3	**Report Date:**	04/25/19

Case Narrative

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

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

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

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

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

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

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3
Lab Number: L1915805
Report Date: 04/25/19

Case Narrative (continued)

Report Submission

April 25, 2019: This is a preliminary report.

Semivolatile Organics by SIM

L1915805-01: The sample has elevated detection limits due to the dilution required by the sample matrix.

Total Metals

L1915805-02: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by the high concentrations of non-target elements.

The WG1228370-3 MS recovery for antimony (131%), performed on L1915805-02, recovered outside the 70-130% acceptance criteria. The result for this analyte is considered suspect due to either the heterogeneous nature of the sample or matrix interference.

Solids, Total Suspended

L1915805-01: The sample has elevated detection limits due to limited sample volume available for analysis.

Chlorine, Total Residual

WG1227717: A Matrix Spike and Laboratory Duplicate could not be performed due to insufficient sample volume available for analysis.

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

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 04/25/19

ORGANICS

VOLATILES

Project Name: FAN PIER PARCEL E
Lab Number: L1915805
Project Number: 4426.9.E3
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-01
Client ID: E-15
Sample Location: BOSTON, MA

Date Collected: 04/17/19 11:30
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 04/23/19 11:59
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	1.0	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
Acetone	ND		ug/l	10	--	1
Methyl tert butyl Ether	ND		ug/l	10	--	1
Tert-Butyl Alcohol	ND		ug/l	100	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	100		60-140
Fluorobenzene	107		60-140
4-Bromofluorobenzene	109		60-140

Project Name: FAN PIER PARCEL E
Lab Number: L1915805
Project Number: 4426.9.E3
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-01
Client ID: E-15
Sample Location: BOSTON, MA

Date Collected: 04/17/19 11:30
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 04/23/19 11:59
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	102		60-140
4-Bromofluorobenzene	99		60-140

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3
Lab Number: L1915805
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 04/23/19 11:21
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1228997-12					
Benzene	ND		ug/l	1.0	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
Acetone	ND		ug/l	10	--
Methyl tert butyl Ether	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	100	--
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	99		60-140
Fluorobenzene	107		60-140
4-Bromofluorobenzene	108		60-140

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM
Analytical Date: 04/23/19 11:21
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1229408-4					
1,4-Dioxane	ND		ug/l	50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	102		60-140
4-Bromofluorobenzene	100		60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1228997-11								
Benzene	125		-		65-135	-		61
Toluene	115		-		70-130	-		41
Ethylbenzene	130		-		60-140	-		63
p/m-Xylene	120		-		60-140	-		30
o-xylene	115		-		60-140	-		30
Acetone	70		-		40-160	-		30
Methyl tert butyl Ether	80		-		60-140	-		30
Tert-Butyl Alcohol	65		-		60-140	-		30
Tertiary-Amyl Methyl Ether	85		-		60-140	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	103				60-140
Fluorobenzene	109				60-140
4-Bromofluorobenzene	111				60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1229408-3								
1,4-Dioxane	110		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	102				60-140
4-Bromofluorobenzene	101				60-140

SEMIVOLATILES

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-01
Client ID: E-15
Sample Location: BOSTON, MA

Date Collected: 04/17/19 11:30
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 04/20/19 15:48
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 04/19/19 15:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	4.0		ug/l	2.2	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		42-122
2-Fluorobiphenyl	78		46-121
4-Terphenyl-d14	94		47-138

Project Name: FAN PIER PARCEL E
Lab Number: L1915805
Project Number: 4426.9.E3
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-01 D
Client ID: E-15
Sample Location: BOSTON, MA

Date Collected: 04/17/19 11:30
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 04/24/19 18:30
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 04/19/19 15:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	6.3		ug/l	0.20	--	2
Fluoranthene	0.68		ug/l	0.20	--	2
Naphthalene	0.24		ug/l	0.20	--	2
Benzo(a)anthracene	ND		ug/l	0.20	--	2
Benzo(a)pyrene	ND		ug/l	0.20	--	2
Benzo(b)fluoranthene	ND		ug/l	0.20	--	2
Benzo(k)fluoranthene	ND		ug/l	0.20	--	2
Chrysene	ND		ug/l	0.20	--	2
Acenaphthylene	ND		ug/l	0.20	--	2
Anthracene	0.49		ug/l	0.20	--	2
Benzo(ghi)perylene	ND		ug/l	0.20	--	2
Fluorene	1.2		ug/l	0.20	--	2
Phenanthrene	0.64		ug/l	0.20	--	2
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--	2
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.20	--	2
Pyrene	0.58		ug/l	0.20	--	2
Pentachlorophenol	ND		ug/l	2.0	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	56		25-87
Phenol-d6	44		16-65
Nitrobenzene-d5	103		42-122
2-Fluorobiphenyl	107		46-121
2,4,6-Tribromophenol	96		45-128
4-Terphenyl-d14	74		47-138

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 04/20/19 12:57
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 04/19/19 15:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1228318-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.2	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	51		42-122
2-Fluorobiphenyl	59		46-121
4-Terphenyl-d14	81		47-138

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1-SIM
Analytical Date: 04/22/19 12:33
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 04/19/19 15:45

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1228320-1					
Acenaphthene	ND		ug/l	0.10	--
Fluoranthene	ND		ug/l	0.10	--
Naphthalene	ND		ug/l	0.10	--
Benzo(a)anthracene	ND		ug/l	0.10	--
Benzo(a)pyrene	ND		ug/l	0.10	--
Benzo(b)fluoranthene	ND		ug/l	0.10	--
Benzo(k)fluoranthene	ND		ug/l	0.10	--
Chrysene	ND		ug/l	0.10	--
Acenaphthylene	ND		ug/l	0.10	--
Anthracene	ND		ug/l	0.10	--
Benzo(ghi)perylene	ND		ug/l	0.10	--
Fluorene	ND		ug/l	0.10	--
Phenanthrene	ND		ug/l	0.10	--
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--
Pyrene	ND		ug/l	0.10	--
Pentachlorophenol	ND		ug/l	1.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	31		25-87
Phenol-d6	26		16-65
Nitrobenzene-d5	60		42-122
2-Fluorobiphenyl	54		46-121
2,4,6-Tribromophenol	48		45-128
4-Terphenyl-d14	85		47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1228318-2								
Bis(2-ethylhexyl)phthalate	86		-		29-137	-		30
Butyl benzyl phthalate	96		-		1-140	-		30
Di-n-butylphthalate	89		-		8-120	-		30
Di-n-octylphthalate	94		-		19-132	-		30
Diethyl phthalate	85		-		1-120	-		30
Dimethyl phthalate	89		-		1-120	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	82				42-122
2-Fluorobiphenyl	80				46-121
4-Terphenyl-d14	80				47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1228320-2								
Acenaphthene	66		-		60-132	-		30
Fluoranthene	74		-		43-121	-		30
Naphthalene	60		-		36-120	-		30
Benzo(a)anthracene	69		-		42-133	-		30
Benzo(a)pyrene	67		-		32-148	-		30
Benzo(b)fluoranthene	66		-		42-140	-		30
Benzo(k)fluoranthene	68		-		25-146	-		30
Chrysene	68		-		44-140	-		30
Acenaphthylene	66		-		54-126	-		30
Anthracene	73		-		43-120	-		30
Benzo(ghi)perylene	70		-		1-195	-		30
Fluorene	70		-		70-120	-		30
Phenanthrene	72		-		65-120	-		30
Dibenzo(a,h)anthracene	73		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	70		-		1-151	-		30
Pyrene	82		-		70-120	-		30
Pentachlorophenol	50		-		38-152	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1228320-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	44				25-87
Phenol-d6	36				16-65
Nitrobenzene-d5	81				42-122
2-Fluorobiphenyl	69				46-121
2,4,6-Tribromophenol	61				45-128
4-Terphenyl-d14	91				47-138

PCBS

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-01
Client ID: E-15
Sample Location: BOSTON, MA

Date Collected: 04/17/19 11:30
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 04/23/19 09:38
Analyst: JW

Extraction Method: EPA 608.3
Extraction Date: 04/20/19 23:54
Cleanup Method: EPA 3665A
Cleanup Date: 04/21/19
Cleanup Method: EPA 3660B
Cleanup Date: 04/21/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		37-123	B
Decachlorobiphenyl	79		38-114	B
2,4,5,6-Tetrachloro-m-xylene	69		37-123	A
Decachlorobiphenyl	73		38-114	A

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 04/23/19 08:36
Analyst: WR

Extraction Method: EPA 608.3
Extraction Date: 04/20/19 23:54
Cleanup Method: EPA 3665A
Cleanup Date: 04/21/19
Cleanup Method: EPA 3660B
Cleanup Date: 04/21/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1228634-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	86		37-123	B
Decachlorobiphenyl	94		38-114	B
2,4,5,6-Tetrachloro-m-xylene	82		37-123	A
Decachlorobiphenyl	95		38-114	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1228634-2									
Aroclor 1016	78		-		50-140	-		36	A
Aroclor 1260	77		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81				37-123	B
Decachlorobiphenyl	87				38-114	B
2,4,5,6-Tetrachloro-m-xylene	78				37-123	A
Decachlorobiphenyl	89				38-114	A

METALS

Project Name: FAN PIER PARCEL E
Lab Number: L1915805
Project Number: 4426.9.E3
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-01
Client ID: E-15
Sample Location: BOSTON, MA
Date Collected: 04/17/19 11:30
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00254		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Iron, Total	0.311		mg/l	0.050	--	1	04/19/19 17:55	04/22/19 14:40	EPA 3005A	19,200.7	LC
Lead, Total	ND		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	04/19/19 15:58	04/22/19 20:36	EPA 245.1	3,245.1	EA
Nickel, Total	ND		mg/l	0.00200	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	04/19/19 17:55	04/22/19 14:17	EPA 3005A	3,200.8	AM
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		04/22/19 14:17	NA	107,-	

Project Name: FAN PIER PARCEL E
Lab Number: L1915805
Project Number: 4426.9.E3
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-02
Client ID: INNER HARBOR
Sample Location: BOSTON, MA
Date Collected: 04/17/19 11:15
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.02000	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00500	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00100	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00500	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.00500	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Iron, Total	0.136		mg/l	0.050	--	1	04/19/19 17:55	04/22/19 14:15	EPA 3005A	19,200.7	LC
Lead, Total	ND		mg/l	0.00500	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	04/19/19 15:58	04/22/19 20:42	EPA 245.1	3,245.1	EA
Nickel, Total	ND		mg/l	0.01000	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.02500	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00200	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.05000	--	5	04/19/19 17:55	04/22/19 11:25	EPA 3005A	3,200.8	AM

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3
Lab Number: L1915805
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1228286-1										
Iron, Total	ND		mg/l	0.050	--	1	04/19/19 17:55	04/22/19 10:15	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1228310-1										
Mercury, Total	ND		mg/l	0.00020	--	1	04/19/19 15:58	04/22/19 20:32	3,245.1	EA

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1228370-1										
Antimony, Total	ND		mg/l	0.00400	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	04/19/19 17:55	04/22/19 10:06	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL E

Project Number: 4426.9.E3

Lab Number: L1915805

Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1228286-2								
Iron, Total	101		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1228310-2								
Mercury, Total	108		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1228370-2								
Antimony, Total	101		-		85-115	-		
Arsenic, Total	102		-		85-115	-		
Cadmium, Total	105		-		85-115	-		
Chromium, Total	98		-		85-115	-		
Copper, Total	95		-		85-115	-		
Lead, Total	107		-		85-115	-		
Nickel, Total	98		-		85-115	-		
Selenium, Total	106		-		85-115	-		
Silver, Total	104		-		85-115	-		
Zinc, Total	108		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1228286-3 QC Sample: L1915805-02 Client ID: INNER HARBOR												
Iron, Total	0.136	1	1.10	96		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1228286-7 QC Sample: L1916009-01 Client ID: MS Sample												
Iron, Total	0.118	1	1.26	114		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1228310-3 QC Sample: L1915805-01 Client ID: E-15												
Mercury, Total	ND	0.005	0.00483	97		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1228370-3 QC Sample: L1915805-02 Client ID: INNER HARBOR												
Antimony, Total	ND	0.5	0.6560	**131**	Q	-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1358	113		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05096	100		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.2169	108		-	-		70-130	-		20
Copper, Total	ND	0.25	0.2484	99		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5923	116		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.5070	101		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1293	108		-	-		70-130	-		20
Silver, Total	ND	0.05	0.03804	76		-	-		70-130	-		20
Zinc, Total	ND	0.5	0.4613	92		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1228286-4 QC Sample: L1915805-02 Client ID: INNER HARBOR						
Iron, Total	0.136	0.141	mg/l	4		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1228310-4 QC Sample: L1915805-01 Client ID: E-15						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1228370-4 QC Sample: L1915805-02 Client ID: INNER HARBOR						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	ND	ND	mg/l	NC		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-01
Client ID: E-15
Sample Location: BOSTON, MA

Date Collected: 04/17/19 11:30
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
SALINITY	2.6		SU	2.0	--	1	-	04/18/19 05:30	121,2520B	MA
Solids, Total Suspended	ND		mg/l	6.0	NA	1.2	-	04/18/19 13:45	121,2540D	DR
Cyanide, Total	0.006		mg/l	0.005	--	1	04/18/19 10:50	04/18/19 13:48	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	04/18/19 04:10	121,4500CL-D	MA
pH (H)	7.9		SU	-	NA	1	-	04/18/19 06:50	121,4500H+-B	KF
Nitrogen, Ammonia	4.52		mg/l	0.075	--	1	04/18/19 03:00	04/18/19 21:34	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	04/18/19 15:30	04/18/19 21:30	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	04/19/19 03:30	04/19/19 06:48	4,420.1	GD
Chromium, Hexavalent	ND		mg/l	0.010	--	1	04/18/19 05:30	04/18/19 06:02	1,7196A	MA
Anions by Ion Chromatography - Westborough Lab										
Chloride	1250		mg/l	250	--	500	-	04/19/19 18:07	44,300.0	AU

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1915805-02
Client ID: INNER HARBOR
Sample Location: BOSTON, MA

Date Collected: 04/17/19 11:15
Date Received: 04/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
SALINITY	23		SU	2.0	--	1	-	04/18/19 05:30	121,2520B	MA
pH (H)	7.9		SU	-	NA	1	-	04/18/19 06:50	121,4500H+-B	KF

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3
Lab Number: L1915805
Report Date: 04/25/19

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: WG1227565-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	04/18/19 03:00	04/18/19 21:12	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1227624-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	04/18/19 05:30	04/18/19 05:58	1,7196A	MA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1227688-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	04/18/19 13:45	121,2540D	DR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1227717-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	04/18/19 04:10	121,4500CL-D	MA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1227738-1										
Cyanide, Total	ND		mg/l	0.005	--	1	04/18/19 10:50	04/18/19 13:33	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1227864-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	04/18/19 15:30	04/18/19 21:30	74,1664A	ML
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1228062-1										
Phenolics, Total	ND		mg/l	0.030	--	1	04/19/19 03:30	04/19/19 06:43	4,420.1	GD
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1228420-1										
Chloride	ND		mg/l	0.500	--	1	-	04/19/19 16:55	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL E

Project Number: 4426.9.E3

Lab Number: L1915805

Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1227565-2								
Nitrogen, Ammonia	89		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1227624-2								
Chromium, Hexavalent	95		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1227703-1								
SALINITY	101		-			-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1227706-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1227717-2								
Chlorine, Total Residual	96		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1227738-2								
Cyanide, Total	93		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1227864-2								
TPH	91		-		64-132	-		34

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL E

Project Number: 4426.9.E3

Lab Number: L1915805

Report Date: 04/25/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1228062-2					
Phenolics, Total	103	-	70-130	-	
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1228420-2					
Chloride	103	-	90-110	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227565-4 QC Sample: L1915805-01 Client ID: E-15												
Nitrogen, Ammonia	4.52	4	8.67	104		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227624-4 QC Sample: L1915805-01 Client ID: E-15												
Chromium, Hexavalent	ND	0.1	0.095	95		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227738-4 QC Sample: L1915612-02 Client ID: MS Sample												
Cyanide, Total	0.005	0.2	0.190	92		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227864-4 QC Sample: L1915412-01 Client ID: MS Sample												
TPH	ND	22.2	18.6	84		-	-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1228062-4 QC Sample: L1915929-01 Client ID: MS Sample												
Phenolics, Total	ND	0.4	0.36	89		-	-		70-130	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1228420-3 QC Sample: L1916161-01 Client ID: MS Sample												
Chloride	354	40	376	**56**	Q	-	-		90-110	-		18

Lab Duplicate Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227565-3 QC Sample: L1915805-01 Client ID: E-15						
Nitrogen, Ammonia	4.52	4.66	mg/l	3		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227624-3 QC Sample: L1915805-01 Client ID: E-15						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227688-2 QC Sample: L1915734-01 Client ID: DUP Sample						
Solids, Total Suspended	5200	4800	mg/l	8		29
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1227703-2 QC Sample: L1915805-02 Client ID: INNER HARBOR						
SALINITY	23	23	SU	0		
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1227706-2 QC Sample: L1915805-02 Client ID: INNER HARBOR						
pH (H)	7.9	7.8	SU	1		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227738-3 QC Sample: L1915612-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227864-3 QC Sample: L1915412-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1228062-3 QC Sample: L1915929-01 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1228420-4 QC Sample: L1916161-01 Client ID: DUP Sample						
Chloride	354	348	mg/l	2		18

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1915805-01A	Vial HCl preserved	A	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L1915805-01B	Vial HCl preserved	A	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L1915805-01C	Vial HCl preserved	A	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L1915805-01D	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		HOLD-504/8011(14)
L1915805-01E	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		HOLD-504/8011(14)
L1915805-01F	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		HOLD-504/8011(14)
L1915805-01G	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1915805-01H	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1915805-01I	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1915805-01J	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1915805-01K	Amber 1000ml HCl preserved	A	NA		2.8	Y	Absent		TPH-1664(28)
L1915805-01L	Amber 1000ml HCl preserved	A	NA		2.8	Y	Absent		TPH-1664(28)
L1915805-01M	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		PCB-608.3(7)
L1915805-01N	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		PCB-608.3(7)
L1915805-01O	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1915805-01P	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1915805-01Q	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1915805-01R	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1915805-01S	Plastic 250ml NaOH preserved	A	>12	>12	2.8	Y	Absent		TCN-4500(14)
L1915805-01T	Plastic 500ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		NH3-4500(28)
L1915805-01U	Plastic 950ml unpreserved	A	7	7	2.8	Y	Absent		TSS-2540(7)

*Values in parentheses indicate holding time in days

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1915805
Report Date: 04/25/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1915805-01V	Plastic 250ml unpreserved	A	7	7	2.8	Y	Absent		CL-300(28),HEXCR-7196(1),SALINITY(28),TRC-4500(1),PH-4500(.01)
L1915805-01X	Amber 950ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		TPHENOL-420(28)
L1915805-02A	Plastic 950ml unpreserved	A	7	7	2.8	Y	Absent		SALINITY(28),PH-4500(.01)
L1915805-02B	Plastic 250ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		ARCHIVE()
L1915805-02C	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)

*Values in parentheses indicate holding time in days

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1915805
Project Number:	4426.9.E3	**Report Date:**	04/25/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1915805
Project Number:	4426.9.E3	**Report Date:**	04/25/19

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.

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

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

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

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

A - Spectra identified as "Aldol 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.

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

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

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

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

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

ND - Not detected at the reporting limit (RL) for the sample.

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

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1915805
Project Number:	4426.9.E3	**Report Date:**	04/25/19

REFERENCES

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

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

74 Method 1664,Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.

107 Alpha Analytical - In-house calculation method.

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

127 Method 608.3: Organochlorine Pesticides and PCBs by GC/HSD, EPA 821-R-16-009, December 2016.

128 Method 624.1: Purgeables by GC/MS, EPA 821-R-16-008, December 2016.

129 Method 625.1: Base/Neutrals and Acids by GC/MS, EPA 821-R-16-007, December 2016.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 4/17/19
ALPHA Job #: L1915805

Project Information

Project Name: Fan Pier Parcel E
Project Location: Boston, MA
Project #: 4426.9.E3
Project Manager: BED
ALPHA Quote #:

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue
Cambridge, MA 02140
Phone: (617) 868-1420
Fax:
Email: bdowning@mcphailgeo.com
☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: NPDES RGP
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
Circle the following if required: SALINITY HARDNESS PH
Sect. A Inorganics: Ammonia, Chloride, TRC,TSS,CrVI,CrIII, Tot-CN, RGP Metals
B- Non-Hal- VOC- 8260, 8260-SIM, Tot. Phenol Sect C- VOC- 8260 & 504
D- 8270/8270-SIM E- PCB's, PCP(8270/8270-SIM) F-TPH, 8260, Sub-Ethanol

pH + salinity for Both Samples

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	RGP Metals (200.8) (A)	TSS- (A)	Ammonia (4500 (A))	TCN (A)	HexCr (7196), TRC, Cl- (A)	8260 (B, E, F)/8260SIM (B)	Tphenol-420 (B)	504-EDB (C)	8270/8270SIM- (D, E)	PCB-608- (E)	TPH-1664-(F)	SUB-ETHANOL (F)	Sample Specific Comments	TOTAL # BOTTLES
15805-01	E-15	4/17	11:30		KJM	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒	☒	☒		20
-02	Inner Harbor	4/17	11:15		KJM	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		3

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

	RGP Metals	TSS	Ammonia	TCN	HexCr	8260	Tphenol	504-EDB	8270	PCB	TPH	SUB-ETHANOL
Container Type	P	P	P	P	P	V	A	V	A	A	A	V
Preservative	C/D/A	A	D	E	A	B	D	H	A	H	B	B

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	4/17/19 2:15PM	[signature] AAL	4/17/19 16:35
[signature] AAL	4/17/19 18:30	[signature] AAL	4/17/19 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. 5-JAN-12)

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Test America (Nashville)
2960 Foster Creighton Drive
Nashville, TN 37204

Alpha Job Number
L1915805

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 603.319.5010 Email: mgulli@alphalab.com	Project Location: MA Project Manager: Melissa Gulli **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L1915805

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	E-15	04-17-19 11:30	WATER	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	Chris Tedeau	4/18/19		
Form No: AL_subcoc				

ANALYTICAL REPORT

Lab Number:	L1917806
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCEL E
Project Number:	4426.9.E3
Report Date:	05/03/19

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

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

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1917806
Report Date: 05/03/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1917806-01	HARBOR SAMPLE	WATER	BOSTON, MA	04/30/19 14:40	04/30/19

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1917806
Project Number:	4426.9.E3	**Report Date:**	05/03/19

Case Narrative

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

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

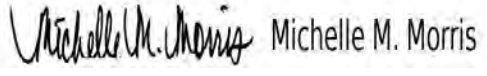
When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded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

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

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

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

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: 05/03/19

INORGANICS
&
MISCELLANEOUS

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1917806
Report Date: 05/03/19

SAMPLE RESULTS

Lab ID: L1917806-01
Client ID: HARBOR SAMPLE
Sample Location: BOSTON, MA

Sample Depth:
Matrix: Water

Date Collected: 04/30/19 14:40
Date Received: 04/30/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Ammonia	0.180		mg/l	0.075	--	1	05/01/19 02:00	05/01/19 20:30	121,4500NH3-BH	AT

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3
Lab Number: L1917806
Report Date: 05/03/19

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: WG1232166-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	05/01/19 02:00	05/01/19 20:27	121,4500NH3-BH	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL E

Project Number: 4426.9.E3

Lab Number: L1917806

Report Date: 05/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1232166-2								
Nitrogen, Ammonia	97		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1917806
Report Date: 05/03/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232166-4 QC Sample: L1900005-07 Client ID: MS Sample												
Nitrogen, Ammonia	22.8	4	25.3	**62**	Q	-	-		80-120	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FAN PIER PARCEL E

Project Number: 4426.9.E3

Lab Number: L1917806

Report Date: 05/03/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232166-3 QC Sample: L1900005-07 Client ID: DUP Sample						
Nitrogen, Ammonia	22.8	23.1	mg/l	1		20

Project Name: FAN PIER PARCEL E
Project Number: 4426.9.E3

Lab Number: L1917806
Report Date: 05/03/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1917806-01A	Plastic 250ml H2SO4 preserved	A	<2	<2	3.6	Y	Absent		NH3-4500(28)

*Values in parentheses indicate holding time in days

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1917806
Project Number:	4426.9.E3	**Report Date:**	05/03/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1917806
Project Number:	4426.9.E3	**Report Date:**	05/03/19

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.

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

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

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

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

A - Spectra identified as "Aldol 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.

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

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

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

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

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

ND - Not detected at the reporting limit (RL) for the sample.

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

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	FAN PIER PARCEL E	**Lab Number:**	L1917806
Project Number:	4426.9.E3	**Report Date:**	05/03/19

REFERENCES

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL — World Class Chemistry

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 4/30/19

ALPHA Job #: L1917806

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue
Cambridge, MA 02140
Phone: (617) 868-1420
Fax:
Email: kseaman@mcphailgeo.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Fan Pier Parcel E
Project Location: Boston, MA
Project #: 4426.9.E3
Project Manager: KWS
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☐ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program: NPDES RGP
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:

Circle the following if required;
Sect. A inorganics: Ammonia, Chloride, TRC,TSS,CrVI,CrIII, Tot-CN, RGP Metals
B- Non-Hal- VOC- 8260, 8260-SIM, Tot. Phenol Sect C- VOC- 8260 & 504
D: 8270/8270-SIM: E- PCB's, PCP(8270/8270-SIM): F-TPH, 8260, Sub-Ethanol

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Ammonia (4500 (A))	Sample Specific Comments	TOTAL # BOTTLES
17806-01	Harbor sample	4/30	2:40	SW	KJM	☒		1
						☐		
						☐		
						☐		
						☐		
						☐		
						☐		
						☐		
						☐		
						☐		
						☐		
Container Type						P		
Preservative						D		

Relinquished By:	Date/Time	Received By:	Date/Time
	4/30 2:40PM		4/30/19 1630
	4/30/19 1750		

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. 9-JAN-12)

APPENDIX F:

BEST MANAGEMENT PRACTICE PLAN

A Notice of Intent for a Remediation General Permit (RGP) under the National Pollutant Discharge Elimination System (NPDES) has been submitted to the US Environmental Protection Agency (EPA) in anticipation of temporary construction dewatering that will occur during redevelopment of 10 Fan Pier Boulevard, South Boston, Massachusetts. This Best Management Practices Plan (BMPP) has been prepared as an Appendix to the RGP and will be posted at the site during the time period that temporary construction dewatering is occurring at the site.

Water Treatment and Management

During construction of the proposed building foundation, dewatering effluent is anticipated to be pumped from localized sumps and trenches within the excavation directly into a settling tank. A review of available subgrade sanitary and storm sewer system plans accessed from the BWSC indicates the presence of a dedicated private stormwater drain system located beneath Marine Park Drive. The discharge flow, indicated by BWSC plans, goes east across the harbor to discharge outfall SDO15 as seen in (Figure 3). Dewatering effluent treatment will consist of a settling tank and bag filters to remove suspended soil particulates, and an ion resin media vessel prior to off-site discharge. pH adjustment will be conducted, if necessary, through the addition of hydrochloric acid, caustic soda and carbon dioxide.

Discharge Monitoring and Compliance

Regular sampling and testing will be conducted at the influent to the system and the treated effluent as required by the RGP. During the first week of discharge, the operator must sample the untreated influent and treated effluent two times: one (1) sample of untreated influent and one (1) sample of treated effluent be collected on the first day of discharge, and one (1) sample of untreated influent and one (1) sample of treated effluent must be collected on one additional non-consecutive day within the first week of discharge. Samples must be analyzed in accordance with 40 CFR §136 unless otherwise specified by the RGP, with a maximum 5-day turnaround time and results must be reviewed no more than 48 hours from receipt of the results of each sampling event. After the first week, samples may be analyzed with up to a ten (10)-day turnaround time and results must be reviewed no

more than 72 hours from receipt of the results. If the treatment system is operating as designed and achieving the effluent limitations outlined in the RGP, on-going sampling shall be conducted weekly for three (3) additional weeks beginning no earlier than 24 hours following initial sampling, and monthly as described below. Any adjustments/reductions in monitoring frequency must be approved by EPA in writing.

In accordance with Part 4.1 of the RGP, the operator must perform routine monthly monitoring for both influent and effluent beginning no more than 30 days following the completion of the sampling requirements for new discharges or discharges that have been interrupted. The routine monthly monitoring is to be conducted through the end of the scheduled discharge. The routine monthly monitoring must continue for five (5) consecutive months prior to submission of any request for modification of monitoring frequency.

Dewatering activity for the Site is classified as Category III-G: Sites with Known Contamination. Monitoring shall include analysis of influent and effluent samples dictated by the EPA.

Monitoring will include checking the condition of the treatment system, assessing the need for treatment system adjustments based on monitoring data, observing, and recording daily flow rates and discharge quantities, and verifying the flow path of the discharged effluent.

The total monthly flow will be monitored by checking and documenting the flow through the flow meter to be installed on the system. Flow will be maintained below the "system design flow" by regularly monitoring flow and adjusting the amount of construction dewatering as needed. Monthly monitoring reports will be compiled and maintained at the site.

System Maintenance

A number of methods will be used to minimize the potential for violations during the term of this permit discharge. Scheduled regular maintenance and periodic cleaning of the treatment system will be conducted to verify proper operation and shall be conducted in accordance with Section 1.11 of the project earthwork specifications. Regular maintenance will include checking the condition of the treatment system equipment such as the settling tanks, bag filters, hoses, pumps, and flow meters. Equipment will be monitored daily for potential issues and unscheduled maintenance requirements.

Employees who have direct or indirect responsibility for ensuring compliance with the RGP will be trained by the Contractor.

Miscellaneous Items

It is anticipated that the erosion control measures and the nature of the site will minimize potential runoff to or from the site. The project specifications also include requirements for erosion control. Site security for the treatment system will be addressed within the overall site security plan.

No adverse effects on designated uses of surrounding surface water bodies is anticipated. The closest body of water is the Boston Inner Harbor located approximately 50 feet to the east of the subject site. Dewatering effluent will be pumped into a settling tank. Water within the settling tank will pumped through bag filters and, as necessary, and ion exchange chambers prior to discharge into the storm drains.

Management of Treatment System Materials

Dewatering effluent will be pumped directly into the treatment system from the excavation with use of hoses and localized sumps to minimize handling. The Contractor will establish staging areas for equipment or materials storage that may be possible sources of pollution away from any dewatering activities, to the extent practicable.

Sediment from the tank used in the treatment system will be characterized and removed from the site to an appropriate receiving facility, in accordance with applicable laws and regulations. Bag and GAC filters will be replaced/disposed of as necessary.