



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 1

5 Post Office Square, Suite 100
BOSTON, MA 02109-3912

CERTIFIED MAIL RETURN RECEIPT REQUESTED

JAN 28 2014

James Heighton
Senior Project Manager
One Marina Park Drive
Boston, MA 02210

Re: Authorization to discharge under the Remediation General Permit (RGP) –
MAG910000. Fan Pier Parcels H and I site located at 88-110 Northern Avenue, Boston,
MA 02210, Suffolk County; Authorization # MAG910606

Dear Mr. Heighton:

Based on the review of a Notice of Intent (NOI) submitted by McPhail Associates, LLC, on behalf of Two Harbor Shore LLC, for the site referenced above, the U.S. Environmental Protection Agency (EPA) hereby authorizes you, as the named Owner and Operator, to discharge in accordance with the provisions of the RGP at that site. Your authorization number is listed above.

The checklist enclosed with this RGP authorization indicates the pollutants which you are required to monitor. Also indicated on the checklist are the effluent limits, test methods and minimum levels (MLs) for each pollutant. Please note that the checklist does not represent the complete requirements of the RGP. Operators must comply with all of the applicable requirements of this permit, including influent and effluent monitoring, narrative water quality standards, record keeping, and reporting requirements, found in Parts I and II, and Appendices I – VIII of the RGP. See EPA's website for the complete RGP and other information at: <http://www.epa.gov/region1/npdes/mass.html#dgp>.

Please note the enclosed checklist includes parameters that exceeded Appendix III limits. The checklist also includes other parameters based on the history of pollution at the site.

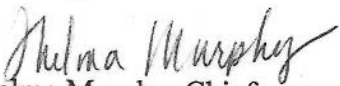
Also, please note that the metals included on the checklist are dilution dependent pollutants and subject to limitations based on selected dilution ranges and technology-based ceiling limitations. With the absence of dilution of freshwater into tidal water, EPA determined that the Dilution Factor Range (DFR) for each parameter for this site is in the one and five (1-5) range. (See the RGP Appendix IV for Massachusetts facilities). Therefore, the limits for arsenic of 36 ug/L, trivalent chromium of 100 ug/L, copper of 3.7 ug/L, lead of 8.5 ug/L, nickel of 8.2 ug/L, zinc of 85.6 ug/L and iron of 1,000 ug/L, are required to achieve permit compliance at your site.

Finally, please note the checklist of pollutants attached to this authorization is subject to a recertification if the operations at the site result in a discharge lasting longer than six months. A recertification can be submitted to EPA within six (6) to twelve (12) months of operations in accordance with the 2010 RGP regulations.

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on September 1, 2015. You are required to submit a Notice of Termination (NOT) to the attention of the contact person indicated below within 30 days of project completion.

Thank you in advance for your cooperation in this matter. Please contact Victor Alvarez at 617-918-1572 or Alvarez.Victor@epa.gov, if you have any questions.

Sincerely,


Thelma Murphy, Chief
Storm Water and Construction
Permits Section

Enclosure

cc: Robert Kubit, MassDEP
Paul Canavan, Boston, BWSC

**2010 Remediation General Permit
Summary of Monitoring Parameters^[1]**

NPDES Authorization Number:		MAG910606
Authorization Issued:	January, 2014	
Facility/Site Name:	Fan Pierce Parcels H and I	
Facility/Site Address:	88-110 Northern Ave. Boston, MA 02210, Suffolk County	
	Email address of owner: jheighton@falloncompany.com	
Legal Name of Operator:	Two Harbor Shore LLC	
Operator contact name, title, and Address:	James Heighton, Senior Project Manager Address same as Owner Email: Same as the Owner	
Estimated date of the Site's work completion:	September 1, 2015	
Category and Sub-Category:	Category III- Contaminated Construction Dewatering. Subcategory B. Known Contaminated Sites	
RGP Termination Date:	September 10, 2015	
Receiving Water:	Boston Harbor	

Monitoring & Limits are applicable if checked. All samples are to be collected as grab samples

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
✓	1. Total Suspended Solids (TSS)	30 milligrams/liter (mg/L) **, 50 mg/L for hydrostatic testing ** Me#160.2/ML5ug/L
	2. Total Residual Chlorine (TRC) ¹	Freshwater = 11 ug/L ** Saltwater = .5 ug/L **/ Me#330.5/ML 20ug/L
✓	3. Total Petroleum Hydrocarbons (TPH)	5.0 mg/L/ Me# 1664A/ML 5.0mg/L
	4. Cyanide (CN) ^{2, 3}	Freshwater = 5.2 ug/l ** Saltwater = 1.0 ug/L **/ Me#335.4/ML 10ug/L
	5. Benzene (B)	5ug/L /50.0 ug/L for hydrostatic testing only/ Me#8260C/ML 2 ug/L
	6. Toluene (T)	(limited as ug/L total BTEX)/ Me#8260C/ML 2ug/L
	7. Ethylbenzene (E)	(limited as ug/L total BTEX) Me#8260C/ML 2ug/L
	8. (m,p,o) Xylenes (X)	(limited as ug/L total BTEX) Me#8260C/ML 2ug/L

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	9. Total Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX) ⁴	100 ug/L/ Me#8260C/ ML 2ug/L
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L
	11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l/Me#8260C/ML 10ug/L
	12.tert-Butyl Alcohol (TBA) (TertiaryButanol)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	13. tert-Amyl Methyl Ether (TAME)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
✓	14. Naphthalene ⁵	20 ug/L /Me#8260C/ML 2ug/L
	15. Carbon Tetrachloride	4.4 ug/L /Me#8260C/ ML 5ug/L
	16. 1,2 Dichlorobenzene (o-DCB)	600 ug/L /Me#8260C/ ML 5ug/L
	17. 1,3 Dichlorobenzene (m-DCB)	320 ug/L /Me#8260C/ ML 5ug/L
	18. 1,4 Dichlorobenzene (p-DCB)	5.0 ug/L /Me#8260C/ ML 5ug/L
	18a. Total dichlorobenzene	763 ug/L - NH only /Me#8260C/ ML 5ug/L
	19. 1,1 Dichloroethane (DCA)	70 ug/L /Me#8260C/ ML 5ug/L
	20. 1,2 Dichloroethane (DCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	21. 1,1 Dichloroethene (DCE)	3.2 ug/L/Me#8260C/ ML 5ug/L
	22. cis-1,2 Dichloroethene (DCE)	70 ug/L/Me#8260C/ ML 5ug/L
	23. Methylene Chloride	4.6 ug/L/Me#8260C/ ML 5ug/L
	24. Tetrachloroethene (PCE)	5.0 ug/L/Me#8260C/ ML 5ug/L
	25. 1,1,1 Trichloro-ethane (TCA)	200 ug/L/Me#8260C/ ML 5ug/L
	26. 1,1,2 Trichloro-ethane (TCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	27. Trichloroethene (TCE)	5.0 ug/L /Me#8260C/ ML 5ug/L
	28. Vinyl Chloride (Chloroethene)	2.0 ug/L /Me#8260C/ ML 5ug/L
	29. Acetone	Monitor Only(ug/L)/Me#8260C/ML 50ug/L
	30. 1,4 Dioxane	Monitor Only /Me#1624C/ML 50ug/L
	31. Total Phenols	300 ug/L Me#420.1&420.2/ML 2 ug/L/ Me# 420.4 /ML 50ug/L
	32. Pentachlorophenol (PCP)	1.0 ug/L /Me#8270D/ML 5ug/L, Me#604 & 625/ML 10ug/L
	33. Total Phthalates (Phthalate esters) ⁶	3.0 ug/L ** /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L & Me#625/ML 5ug/L
	34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	6.0 ug/L /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L & Me#625/ML 5ug/L

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/L
✓	a. Benzo(a) Anthracene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
✓	b. Benzo(a) Pyrene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
✓	c. Benzo(b)Fluoranthene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
✓	d. Benzo(k)Fluoranthene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
✓	e. Chrysene ⁷	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
✓	f. Dibenzo(a,h)anthracene ⁷	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
✓	g. Indeno(1,2,3-cd) Pyrene ⁷	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	100 ug/L
	h. Acenaphthene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	i. Acenaphthylene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	j. Anthracene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	k. Benzo(ghi) Perylene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	l. Fluoranthene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	m. Fluorene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	n. Naphthalene ⁵	20 ug/L / Me#8270/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	o. Phenanthrene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	p. Pyrene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
✓	37. Total Polychlorinated Biphenyls (PCBs) ^{8, 9}	0.000064 ug/L/Me# 608/ ML 0.5 ug/L
✓	38. Chloride	Monitor only/Me# 300.0/ ML 100 ug/L

<u>Metal Parameters</u>	<u>Total Recoverable MA/Metal Limit</u> <u>H ¹⁰ = 50 mg/l CaCO₃, Units = ug/l ^(11/12)</u>	<u>Minimum level=ML</u>
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		Saltwater Limits		
	39. Antimony	5.6	ML	10
✓	40. Arsenic **	36	ML	20
	41. Cadmium **	8.9	ML	10
✓	42. Chromium III (trivalent) **	100	ML	15
	43. Chromium VI (hexavalent) **	50.3	ML	10
✓	44. Copper **	3.7	ML	15
✓	45. Lead **	8.5	ML	20
	46. Mercury **	1.1	ML	02
✓	47. Nickel **	8.2	ML	20
	48. Selenium **	71	ML	20
	49. Silver	2.2	ML	10
✓	50. Zinc **	85.6	ML	15
✓	51. Iron	1,000	ML	20

	Other Parameters	Limit
✓	52. Instantaneous Flow	Site specific in CFS
✓	53. Total Flow	Site specific in CFS
	54. pH Range for Class A & Class B Waters in MA	6.5-8.3; 1/Month/Grab ¹³
✓	55. pH Range for Class SA & Class SB Waters in MA	6.5-8.3; 1/Month/Grab ¹³
	56. pH Range for Class B Waters in NH	6.5-8; 1/Month/Grab ¹³
	57. Daily maximum temperature - Warm water fisheries	83°F; 1/Month/Grab ¹⁴
	58. Daily maximum temperature - Cold water fisheries	68°F; 1/Month/Grab ¹⁴
	59. Maximum Change in Temperature in MA - Any Class A water body	1.5°F; 1/Month/Grab ¹⁴
	60. Maximum Change in Temperature in MA - Any Class B water body- Warm Water	5°F; 1/Month/Grab ¹⁴
	61. Maximum Change in Temperature in MA - Any Class B water body - Cold water and Lakes/Ponds	3°F; 1/Month/Grab ¹⁴
	62. Maximum Change in Temperature in MA - Any Class SA water body - Coastal	1.5°F; 1/Month/Grab ¹⁴
	63. Maximum Change in Temperature in MA - Any Class SB water body - July to September	1.5°F; 1/Month/Grab ¹⁴
	64. Maximum Change in Temperature in MA -Any Class SB water body - October to June	4°F; 1/Month/Grab ¹⁴

Footnotes:

¹ Although the maximum values for TRC are 11ug/l and 7.5 ug/l for freshwater, and saltwater respectively, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., Method 330.5, 20 ug/l).

² Limits for cyanide are based on EPA's water quality criteria expressed as micrograms per liter. There is currently no EPA approved test method for free cyanide. Therefore, total cyanide must be reported.

³ Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l).

⁴ BTEX = sum of Benzene, Toluene, Ethylbenzene, and total Xylenes.

⁵ Naphthalene can be reported as both a purgeable (VOC) and extractable (SVOC) organic compound. If both VOC and SVOC are analyzed, the highest value must be used unless the QC criteria for one of the analyses is not met. In such cases, the value from the analysis meeting the QC criteria must be used.

⁶ The sum of individual phthalate compounds (not including the #34, Bis (2-Ethylhexyl) Phthalate). The compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.

Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measurement of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.

⁷ Although the maximum value for the individual PAH compounds is 0.0038 ug/l, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.

⁸ In the November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as total PCBs is the sum of all homologue, all isomer, all congener, or all "Oroclor analyses." *Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measure of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.*

⁹ Although the maximum value for total PCBs is 0.000064 ug/l, the compliance limit is equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 0.5 ug/l for Method 608 or 0.00005 ug/l when Method 1668a is approved).

¹⁰ Hardness. Cadmium, Chromium III, Copper, Lead, Nickel, Silver, and Zinc are Hardness Dependent.

¹¹ For a Dilution Factor (DF) from 1 to 5, metals limits are calculated using DF times the base limit for the metal. See Appendix IV. For example, iron limits are calculated using $DF \times 1,000 \text{ ug/L}$ (the iron base limit). Therefore DF is 1.5, the iron limit will be 1,500 ug/L; DF 2, then iron limit = $1,000 \times 2 = 2,000 \text{ ug/L}$, etc. not to exceed the DF=5.

¹² Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B).

¹³ pH sampling for compliance with permit limits may be performed using field methods as provided for in EPA test Method 150.1.

¹⁴ Temperature sampling per Method 170.1



**NOTICE OF INTENT FOR DISCHARGE
UNDER MASSACHUSETTS REMEDIAL
GENERAL PERMIT MAG910000**

FAN PIER - PARCELS H AND I

BOSTON MASSACHUSETTS

to

U.S. Environmental Protection Agency

January 8, 2014

Project No. 4426.9.2H



January 8, 2014

U.S Environmental Protection Agency
RGP-NOC Processing Municipal Assistance Unit (CMU)
1 Congress Street, Suite 1100
Boston, MA 02114-2023

Attention: RGP-NOC Processing

Reference: Fan Pier Parcels H and I; Boston, Massachusetts
Notice of Intent for Construction Dewatering Discharge Under Massachusetts
Remedial General Permit MAG910000

Ladies and Gentlemen:

The purpose of this letter report is to provide a summary of the site and groundwater quality information in support of an application for approval from the U.S. Environmental Protection Agency (EPA) for the temporary discharge of groundwater into Boston's Inner Harbor during construction activities at the above referenced site. Refer to **Figure 1**, Project Location Plan, for the general site locus.

These services were performed and this report was prepared in accordance with the authorization of Two Harbor Shore LLC. These services are subject to the limitations contained in **Appendix A**.

The Fan Pier development site is comprised of nine (9) individual parcels designated as A through I which occupy an approximate 21-acre site bounded by Boston Inner Harbor to the north, the John Joseph Moakley Federal Courthouse and Courthouse Way to the west, Northern Avenue to the south, and a surface parking area to the east. Fan Pier is currently occupied by multi-story structures on Parcels A and B, the Louis Boston retail building on Parcel D, the One Marina Park Drive building on Parcel F and a public green on Parcel G. The building on Parcel C is currently under construction.

Parcels H and I occupy an approximate 67,400 square-foot rectangular plan area bounded by Parcel G to the west, parking lots to the east, Fan Pier Cove and the Institute of Contemporary Art (ICA) to the north, and Northern Avenue and existing parking areas to the south. Currently, the site is utilized as a surface parking lot. Existing ground surface across the site is relatively level, varying from about Elevation +16 to +17. Existing site conditions are shown on the attached **Subsurface Exploration Plan, Figure 2**.

It is understood that the proposed development of Parcels H and I includes construction of three levels of below-grade parking and the construction of two above-grade structures. The below-grade garage will occupy an approximate 65,300 square-foot rectangular plan area, which equates to the majority of the Parcel H and I footprint. The lowest level slab within the garage is proposed to be at about Elevation - 14.7.

It is understood that the proposed superstructure of Parcel I will include a 17-story building with one mechanical penthouse. The design of the superstructure of Parcel H has not been finalized yet. However, it is anticipated to consist of an 16-story above grade structure occupying the majority of the Parcel H footprint.

Subsurface explorations performed at the site indicate that Parcels H and I are underlain by successive deposits of granular and dredged fill material that extend to depths of 17 to 39 feet below ground surface. The fill material was generally underlain by successive deposits of organic soil and marine sand. The



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organic deposit was observed to range from about 1 to 6 feet in thickness and the marine sand deposit was observed to range from 2 to 13 feet in thickness.

An extensive deposit of marine clay, known locally as Boston Blue Clay, underlies the fill, organic and/or marine sand deposits and extends to a depth of about 140 feet below the existing ground surface. The marine clay is underlain by subsequent deposits of glacial till and bedrock. Observation wells installed at the site indicate that the groundwater level ranges from about Elevation +8.1 and Elevation +10.7.

Based on preliminary precharacterization completed in 1999, the entire 21-acre Fan Pier property, including Parcels H and I, was listed as an MCP site under Release Tracking Number (RTN) 3-19647 on June 14, 2000. Reportable conditions consisted of the presence of total petroleum hydrocarbons (TPH) and hazardous materials (lead, PCBs and PAHs) in historical urban fill and underlying organic soils at concentrations exceeding RCS-1 reportable concentrations.

In addition, recent subsurface explorations have identified additional releases on Parcels H and I. In October 2013, the DEP assigned RTN 3-31799 to a release of PCBs in the fill material on Parcel H and RTN 3-31818 to releases of PCBs and naphthalene in the fill material and natural soils on Parcel I.

Excavation within the footprint of the proposed below grade space will extend to a depth of approximately 30 feet below the observed groundwater level. In order to permit construction of the below grade parking garage and provide an effective groundwater cut-off during construction, a continuously interlocking steel sheet pile wall will be installed just beyond the perimeter foundation walls of the structure. Hence, construction dewatering will be required within the groundwater cut-off area to allow for the construction of the below-grade portion of the concrete slab and foundations. The majority of the anticipated dewatering will occur during excavation following the installation of the groundwater cut-off. Additional minor dewatering may occur during installation of the lowest elevation concrete slab and footings.

It is estimated that intermittent groundwater discharge required during the initial stage of the excavation phase of construction will be on the order of 50 to 100 gallons per minute (GPM). The quantity of groundwater discharge is based on the relatively pervious nature of the upper portion of existing fill material and the presence of the sheet piling surrounding the excavation, which will act as a groundwater cut-off. A reduction in the rate of discharge is anticipated to occur during excavation of the less permeable silty clay dredged fill deposit. A rate of discharge of 20 to 50 GPM is anticipated during this stage of excavation. These estimates of discharge do not include surface runoff which will be removed from the excavation during a limited duration of a rain storm and shortly thereafter.

Since the footprint of the proposed construction will occupy a majority of the Parcels' area and the groundwater cut-off wall will be installed at the perimeter of the site, temporary on-site collection and recharge of groundwater is not feasible. Therefore, construction dewatering will require the discharge of groundwater directly into Boston's Inner Harbor under the requested U.S. EPA Remediation General Permit (RGP).

The location of the discharge point into Boston Harbor with relation to the project site is indicated on **Figure 2**, which is based on a drawing entitled "Topographic Plan of Land" prepared by Nitsch Engineering, dated January 17, 2007.

Based on the results of groundwater chemical analyses, it is our opinion that a settling tank and bag filters will be required to settle out particulate matter in the water to meet allowable total metals discharge limits



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established by the US EPA prior to discharge. One settling tank, 10,000-gallons in capacity, and two bag filters will be incorporated into the discharge system in series in order to meet allowable discharge limits for TSS and total metals established by the RGP. It is our opinion that the removal of sediment will result in a reduction in total metals to levels below the RGP permit limits. A schematic of the treatment system is shown on **Figure 3**.

Should the results of testing for total metals indicate an exceedance of the RGP limit concentrations, appropriate treatment will be implemented to address the exceedances. In addition, should other contaminants be detected within the discharge water during the construction dewatering phase of the project at levels that exceed the effluent limitations, mitigative measures will be implemented to meet the allowable discharge limits.

In conclusion, it is our opinion that groundwater at the site is acceptable for discharge directly into Boston Harbor under a Remedial General Permit. Sampling and analysis of the effluent will be carried out in accordance with the terms of the Remedial General Permit.

Supplemental information appended to this letter in support of the RGP includes the following;

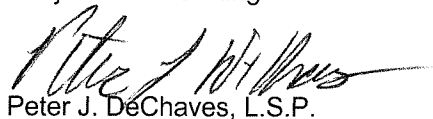
- Notice of Intent Transmittal Form for Permit Application (**Appendix B**);
- A summary of groundwater analysis (**Appendix C, Table 1**);
- A review of Areas of Critical Concern and Endangered and Threatened Species (**Appendix D**);
- A review of National Historic Places (**Attachment E**); and
- Best Management Practice Plan (**Appendix F**).

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.

Very truly yours,

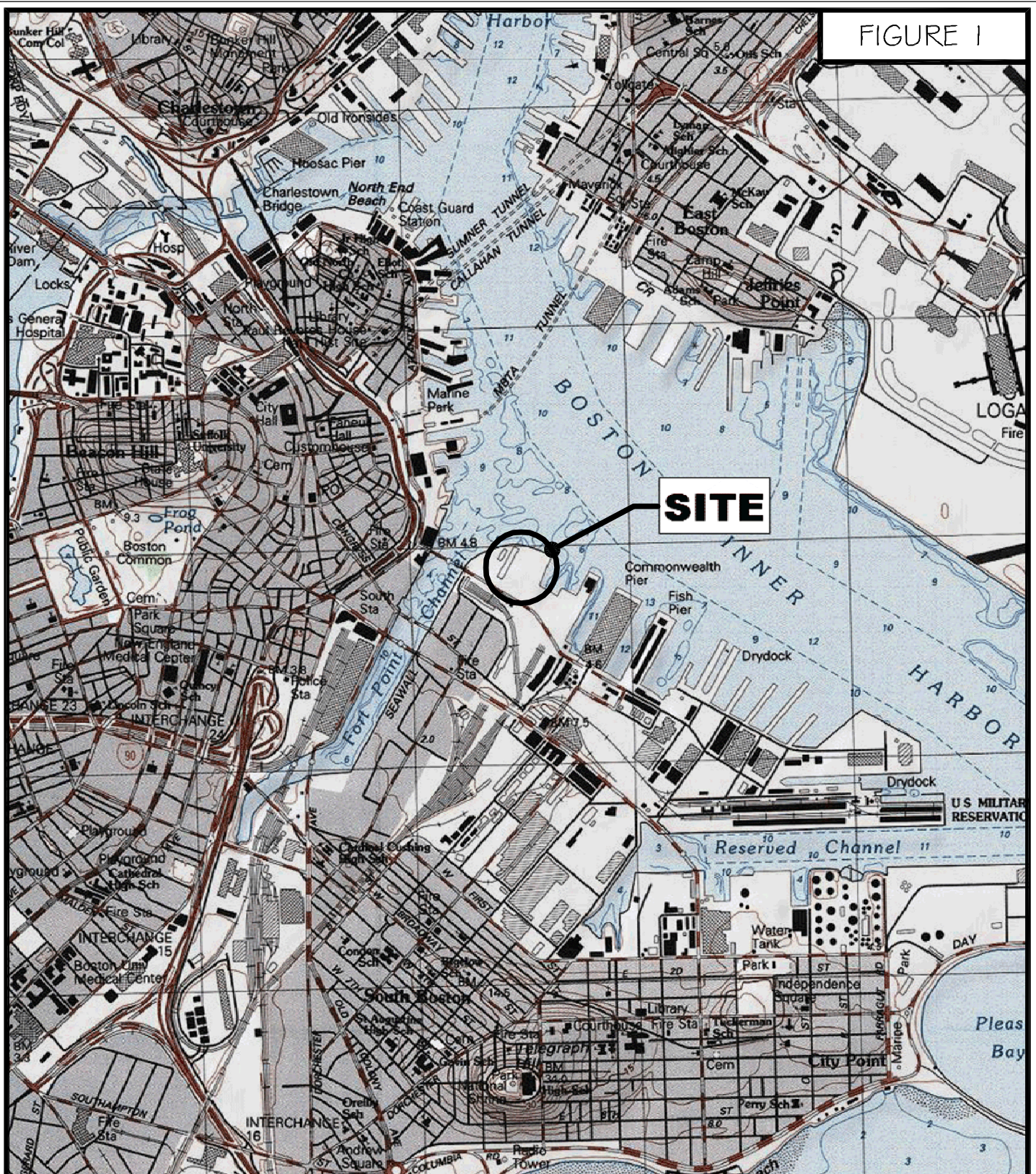
McPHAIL ASSOCIATES, LLC


Benjamin E. Downing

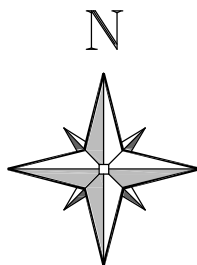

Peter J. DeChaves, L.S.P.

Enclosures
F:\WP5\REPORTS\4426 Parcel H&I RGP.wpd
BED/pjd

FIGURE 1



McPHAIL ASSOCIATES, LLC
Geotechnical and
Geoenvironmental Engineers
2269 Massachusetts Avenue
Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)



SCALE 1:25,000

PROJECT LOCATION PLAN

FAN PIER

BOSTON

MASSACHUSETTS

FILE NAME: H:\Acad\UB54426\Parcels H & I\NGP44426-F02.dwg

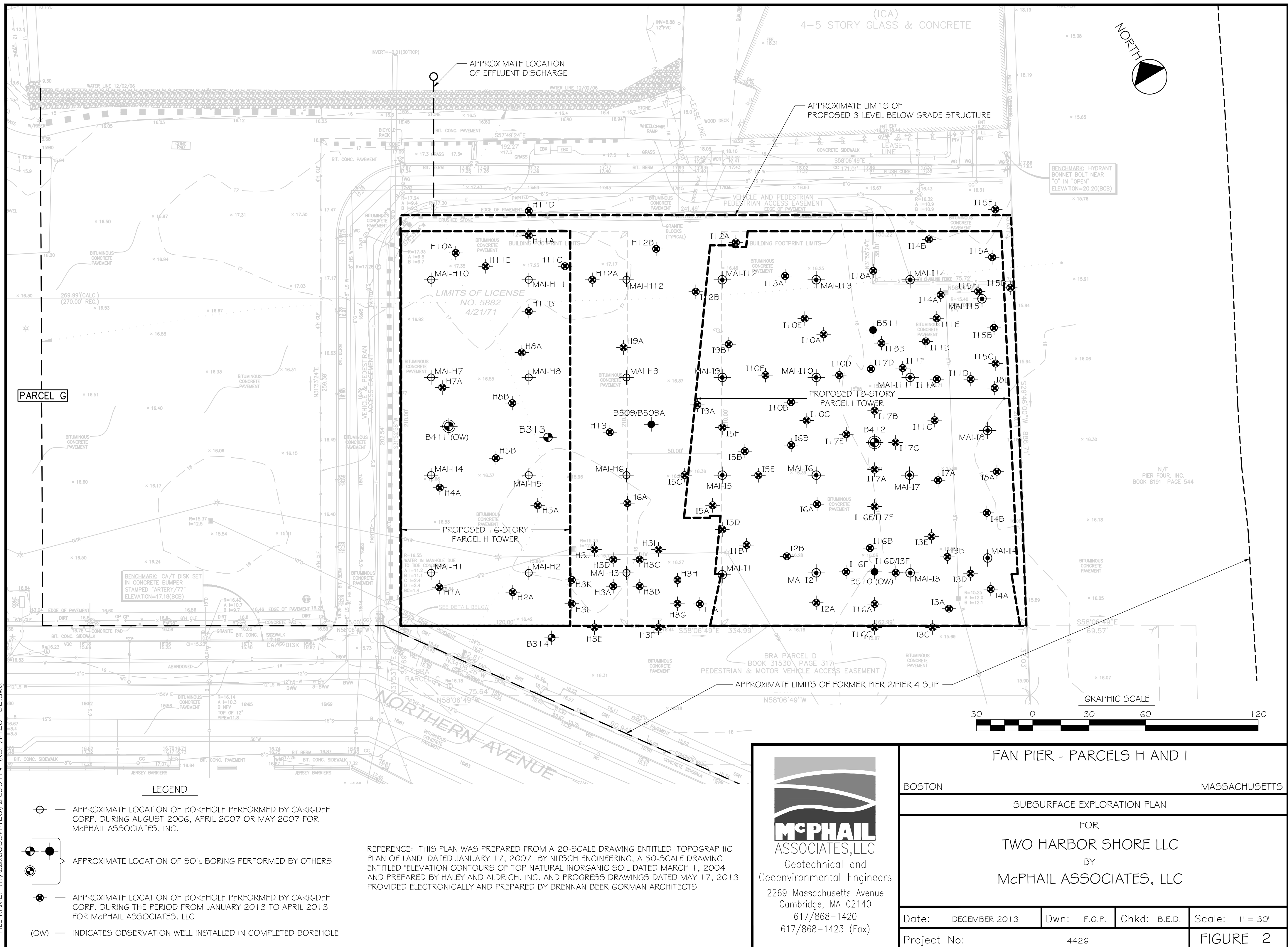
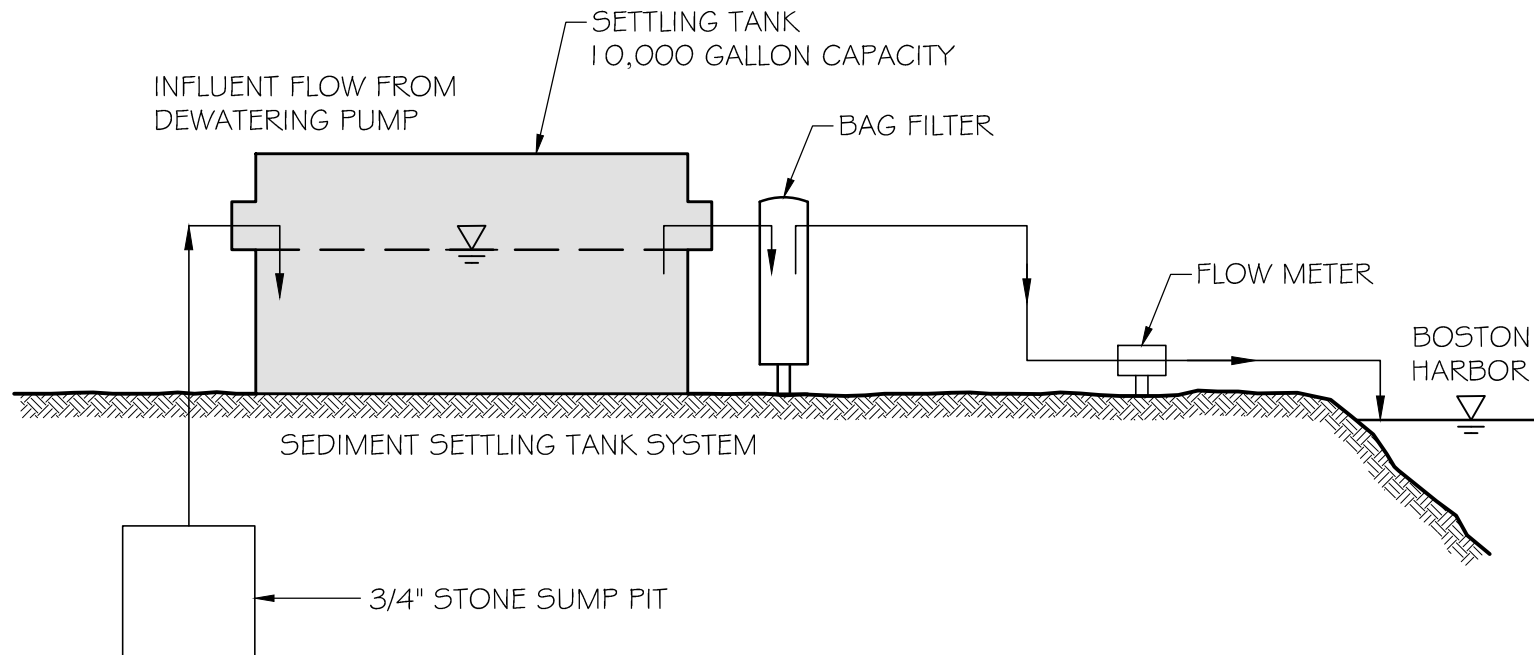


FIGURE 3



Geotechnical and
Geoenvironmental Engineers
2269 Massachusetts Avenue
Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)

FAN PIER PARCELS H AND I

BOSTON

MASSACHUSETTS

SCHEMATIC OF WATER FLOW

FOR

TWO HARBOR SHORE LLC

BY

McPHAIL ASSOCIATES, LLC

Date: DECEMBER 2013	Dwn: F.G.P.	Chkd: B.E.D.	Scale: N.T.S.
Project No: 4426			



APPENDIX A

LIMITATIONS

The purpose of this report is to present the results of testing of groundwater samples obtained from Fan Pier Parcels H and I in Boston, Massachusetts, in support of an application for approval of temporary construction site dewatering discharge into surface waters of the Commonwealth of Massachusetts under the US EPA's Massachusetts Remedial 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 specific subsurface explorations that were performed become evident in the future, it may 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 test 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.

Analytical analyses have been performed for specific constituents during the course of this site 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 Two Harbor Shore LLC. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party except relevant governmental agencies associated with the subject permit application, nor used in whole or in part by any other party, without the prior written consent of McPhail Associates, LLC.



APPENDIX B

Notice of Intent Transmittal Form

B. Suggested Form for Notice of Intent (NOI) for the Remediation General Permit

1. General facility/site information. Please provide the following information about the site:

a) Name of facility/site : Fan Pier Parcels H and I		Facility/site mailing address:	
Location of facility/site :	Facility SIC code(s):	Street:	
longitude: -71.043788		88-110 Northern Avenue	
latitude: 42.352493			
b) Name of facility/site owner : Two Harbor Shore LLC		Town: Boston	
Email address of facility/site owner:		State:	Zip:
jheighton@falloncompany.com		MA	02210
Telephone no. of facility/site owner : 617-737-4100		County: Suffolk	
Fax no. of facility/site owner : 617-737-4101		Owner is (check one): 1. Federal ☐ 2. State/Tribal ☐	
Address of owner (if different from site):		3. Private ☒ 4. Other ☐ if so, describe:	
Street: One Marina Park Drive			
Town: Boston	State: MA	Zip: 02210	County: Suffolk
c) Legal name of operator :		Operator telephone no: 617-737-4100	
Two Harbor Shore LLC		Operator fax no.: 617-737-4101	Operator email: jheighton@falloncompany.com
Operator contact name and title: James Heighton, Senior Project Manager			
Address of operator (if different from owner):		Street:	
Town:	State:	Zip:	County:

d) Check Y for “yes” or N for “no” for the following:

1. Has a prior NPDES permit exclusion been granted for the discharge? Y ☐ N ☒, if Y, number:
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge?
Y ☐ N ☒, if Y, date and tracking #:
3. Is the discharge a “new discharge” as defined by 40 CFR 122.2? Y ☐ N ☒
4. For sites in Massachusetts, is the discharge covered under the Massachusetts Contingency Plan (MCP) and exempt from state permitting? Y ☒ N ☐

e) Is site/facility subject to any State permitting, license, or other action which is causing the generation of discharge? Y ☐ N ☒

If Y, please list:

1. site identification # assigned by the state of NH or MA:
2. permit or license # assigned:
3. state agency contact information: name, location, and telephone number:

f) Is the site/facility covered by any other EPA permit, including:

1. Multi-Sector General Permit? Y ☐ N ☒,
if Y, number:
2. Final Dewatering General Permit? Y ☐ N ☒,
if Y, number:
3. EPA Construction General Permit? Y ☐ N ☒,
if Y, number:
4. Individual NPDES permit? Y ☐ N ☒,
if Y, number:
5. any other water quality related individual or general permit? Y ☐ N ☒, if Y, number:

g) Is the site/facility located within or does it discharge to an Area of Critical Environmental Concern (ACEC)? Y ☐ N ☒

h) Based on the facility/site information and any historical sampling data, identify the sub-category into which the potential discharge falls.

<u>Activity Category</u>	<u>Activity Sub-Category</u>
I - Petroleum Related Site Remediation	A. Gasoline Only Sites ☐ B. Fuel Oils and Other Oil Sites (including Residential Non-Business Remediation Discharges) ☐ C. Petroleum Sites with Additional Contamination ☐
II - Non Petroleum Site Remediation	A. Volatile Organic Compound (VOC) Only Sites ☐ B. VOC Sites with Additional Contamination ☐ C. Primarily Heavy Metal Sites ☐
III - Contaminated Construction Dewatering	A. General Urban Fill Sites ☐ B. Known Contaminated Sites ☒

IV - Miscellaneous Related Discharges	A. Aquifer Pump Testing to Evaluate Formerly Contaminated Sites ☐ B. Well Development/Rehabilitation at Contaminated/Formely Contaminated Sites ☐ C. Hydrostatic Testing of Pipelines and Tanks ☐ D. Long-Term Remediation of Contaminated Sumps and Dikes ☐ E. Short-term Contaminated Dredging Drain Back Waters (if not covered by 401/404 permit) ☐
---------------------------------------	--

2. Discharge information. Please provide information about the discharge, (attaching additional sheets as necessary) including:

a) Describe the discharge activities for which the owner/applicant is seeking coverage:			
Temporary Construction Dewatering			
b) Provide the following information about each discharge:			
1) Number of discharge points:	2) What is the maximum and average flow rate of discharge (in cubic feet per second, ft ³ /s)?		
1	Max. flow	0.2228	Is maximum flow a design value ? Y ☐ N ☒
	Average flow (include units)	50 gpm	Is average flow a design value or estimate? estimate
3) Latitude and longitude of each discharge within 100 feet:			
pt.1: lat.	42.352970	long.	-71.043501
pt.2: lat.		long.	
pt.3: lat.		long.	
pt.4: lat.		long.	
pt.5: lat.		long.	
pt.6: lat.		long.	
pt.7: lat.		long.	
pt.8: lat.		long.	
etc.			
4) If hydrostatic testing, total volume of the discharge (gals):	5) Is the discharge intermittent ☒ or seasonal ☐ ?		
	Is discharge ongoing? Y ☐ N ☐		
c) Expected dates of discharge (mm/dd/yy): start 3/1/2014 end 9/1/2015			
d) Please attach a line drawing or flow schematic showing water flow through the facility including:			
1. sources of intake water. 2. contributing flow from the operation. 3. treatment units. and 4. discharge points and receiving waters(s).			
Refer to Figure 3 in the attached report			

3. Contaminant information.

a) Based on the sub-category selected (see Appendix III), indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional sheets as needed.

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
1. Total Suspended Solids (TSS)		☐	☒	1	grab	30,2540D	5	210000	554.84	210000	277.42
2. Total Residual Chlorine (TRC)		☒	☐	1	grab	30,4500Cl-D	20	ND	0		
3. Total Petroleum Hydrocarbons (TPH)		☒	☐	1	grab	74,1664A	4000	ND	0		
4. Cyanide (CN)	57125	☒	☐	1	grab	30,4500CN-CE	5	ND	0		
5. Benzene (B)	71432	☒	☐	1	grab	5,624	0.5	ND	0		
6. Toluene (T)	108883	☒	☐	1	grab	5,624	0.75	ND	0		
7. Ethylbenzene (E)	100414	☒	☐	1	grab	5,624	0.5	ND	0		
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐	1	grab	5,624	1	ND	0		
9. Total BTEX ²	n/a	☒	☐	1	grab	5,624 ¹		ND	0		
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) ³	106934	☒	☐	1	grab	14,504.1	0.01	ND	0		
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☒	☐	1	grab	5,624	1	ND	0		
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐	1	grab	5,624	10	ND	0		

* Numbering system is provided to allow cross-referencing to Effluent Limits and Monitoring Requirements by Sub-Category included in Appendix III, as well as the Test Methods and Minimum Levels associated with each parameter provided in Appendix VI.

² BTEX = Sum of Benzene, Toluene, Ethylbenzene, total Xylenes.

³ EDB is a groundwater contaminant at fuel spill and pesticide application sites in New England.

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
13. tert-Amyl Methyl Ether (TAME)	9940508	☒	☐	1	grab	5,624	2	ND	0		
14. Naphthalene	91203	☒	☐	1	grab	1,8270D-SIM	2.5	ND	0		
15. Carbon Tetrachloride	56235	☒	☐	1	grab	5,624	0.5	ND	0		
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	1	grab	5,624	2.5	ND	0		
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	1	grab	5,624	2.5	ND	0		
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐	1	grab	5,624	2.5	ND	0		
18a. Total dichlorobenzene		☒	☐	1	grab	5,624	2.5	ND	0		
19. 1,1 Dichloroethane (DCA)	75343	☒	☐	1	grab	5,624	0.75	ND	0		
20. 1,2 Dichloroethane (DCA)	107062	☒	☐	1	grab	5,624	0.5	ND	0		
21. 1,1 Dichloroethene (DCE)	75354	☒	☐	1	grab	5,624	0.5	ND	0		
22. cis-1,2 Dichloroethene (DCE)	156592	☒	☐	1	grab	5,624	0.5	ND	0		
23. Methylene Chloride	75092	☒	☐	1	grab	5,624	3	ND	0		
24. Tetrachloroethene (PCE)	127184	☒	☐	1	grab	5,624	0.5	ND	0		
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐	1	grab	5,624	0.5	ND	0		
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐	1	grab	5,624	0.75	ND	0		
27. Trichloroethene (TCE)	79016	☒	☐	1	grab	5,624	0.5	ND	0		

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
28. Vinyl Chloride (Chloroethene)	75014	☒	☐	1	grab	5,624	1	ND	0		
29. Acetone	67641	☒	☐	1	grab	5,624	5	ND	0		
30. 1,4 Dioxane	123911	☒	☐	1	grab	5,624	3	ND	0		
31. Total Phenols	108952	☒	☐	1	grab	4, 420.1	10	ND	0		
32. Pentachlorophenol (PCP)	87865	☒	☐	1	grab	1,8270D-SIM	0.8	ND	0		
33. Total Phthalates (Phthalate esters) ⁴		☒	☐	1	grab	1,8270D	5	ND	0		
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐	1	grab	1,8270D	3	ND	0		
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
a. Benzo(a) Anthracene	56553	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
b. Benzo(a) Pyrene	50328	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
c. Benzo(b)Fluoranthene	205992	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
d. Benzo(k)Fluoranthene	207089	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
e. Chrysene	21801	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
f. Dibenzo(a,h)anthracene	53703	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	21	grab	1,8270D-SIM	0.2	ND	0		

⁴The sum of individual phthalate compounds.

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
h. Acenaphthene	83329	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
i. Acenaphthylene	208968	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
j. Anthracene	120127	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
k. Benzo(ghi) Perylene	191242	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
l. Fluoranthene	206440	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
m. Fluorene	86737	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
n. Naphthalene	91203	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
o. Phenanthrene	85018	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
p. Pyrene	129000	☒	☐	1	grab	1,8270D-SIM	0.2	ND	0		
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐	1	grab	5,608	0.25	ND	0		
38. Chloride	16887006	☒	☐	1	grab	44,300.0		64500	170.4	64500	85.2
39. Antimony	7440360	☒	☐	1	grab	1,6020A	1	ND	0		
40. Arsenic	7440382	☐	☒	1	grab	1,6020A	0.5	4.93	0.013	4.93	0.0065
41. Cadmium	7440439	☒	☐	1	grab	1,6020A	0.2	ND	0		
42. Chromium III (trivalent)	16065831	☐	☒	1	grab	1,6020A	1	14.49	0.038	14.49	0.019
43. Chromium VI (hexavalent)	18540299	☒	☐	1	grab	30,3500CR-D	10	ND	0		
44. Copper	7440508	☐	☒	1	grab	1,6020A	20	29.58	0.078	29.58	0.039
45. Lead	7439921	☐	☒	1	grab	1,6020A	1	29.39	0.078	29.39	0.039
46. Mercury	7439976	☒	☐	1	grab	3,245.1	0.2	ND	0		
47. Nickel	7440020	☐	☒	1	grab	1,6020A	0.5	12.91	0.034	12.91	0.017
48. Selenium	7782492	☒	☐	1	grab	1,6020A	5	ND	0		
49. Silver	7440224	☒	☐	1	grab	1,6020A	0.4	ND	0		
50. Zinc	7440666	☐	☒	1	grab	1,6020A	10	72.54	0.192	72.54	0.096
51. Iron	7439896	☐	☒	1	grab	19,200.7	50	6300	16.64	6300	8.32
Other (describe):		☐	☐								

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
		☐	☐								
		☐	☐								

b) For discharges where **metals** are believed present, please fill out the following (attach results of any calculations):

<i>Step 1:</i> Do any of the metals in the influent exceed the effluent limits in Appendix III (i.e., the limits set at zero dilution)? Y ☒ N ☐	If yes, which metals? Copper, Lead, Nickel and Iron										
<i>Step 2:</i> For any metals which exceed the Appendix III limits, calculate the dilution factor (DF) using the formula in Part I.A.3.c (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? <table border="1"> <tr> <td>Metal: Copper</td> <td>DF: 0</td> </tr> <tr> <td>Metal: Lead</td> <td>DF: 0</td> </tr> <tr> <td>Metal: Nickel</td> <td>DF: 0</td> </tr> <tr> <td>Metal: Iron</td> <td>DF: 0</td> </tr> <tr> <td>Etc.</td> <td></td> </tr> </table>	Metal: Copper	DF: 0	Metal: Lead	DF: 0	Metal: Nickel	DF: 0	Metal: Iron	DF: 0	Etc.		Look up the limit calculated at the corresponding dilution factor in Appendix IV. Do any of the metals in the influent have the potential to exceed the corresponding effluent limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y ☒ N ☐ If Y, list which metals: Copper, Lead, Nickel, and Iron
Metal: Copper	DF: 0										
Metal: Lead	DF: 0										
Metal: Nickel	DF: 0										
Metal: Iron	DF: 0										
Etc.											

4. Treatment system information. Please describe the treatment system using separate sheets as necessary, including:

a) A description of the treatment system, including a schematic of the proposed or existing treatment system:

A 10,000 gallon settling tank and bag filter(s)						
b) Identify each applicable treatment unit (check all that apply):	Frac. tank ☒	Air stripper ☐	Oil/water separator ☐	Equalization tanks ☐	Bag filter ☒	GAC filter ☐
	Chlorination ☐	De-chlorination ☐	Other (please describe):			

c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate(s)** (gallons per minute) of the treatment system:

Average flow rate of discharge gpm Maximum flow rate of treatment system gpm

Design flow rate of treatment system gpm

d) A description of chemical additives being used or planned to be used (attach MSDS sheets):

None

5. Receiving surface water(s). Please provide information about the receiving water(s), using separate sheets as necessary:

a) Identify the discharge pathway:

Direct to
receiving
water ☒

Within facility
(sewer) ☐

Storm
drain ☐

Wetlands ☐

Other (describe):

b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters:

Discharge directly into Boston's Inner Harbor

c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water:

1. For multiple discharges, number the discharges sequentially.

2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water

The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.

d) Provide the state water quality classification of the receiving water

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water cfs

Please attach any calculation sheets used to support stream flow and dilution calculations.

f) Is the receiving water a listed 303(d) water quality impaired or limited water? Y ☐ N ☒ If yes, for which pollutant(s)?

Is there a final TMDL? Y ☐ N ☒ If yes, for which pollutant(s)?

6. ESA and NHPA Eligibility.

Please provide the following information according to requirements of Permit Parts I.A.4 and I.A.5 Appendices II and VII.

a) Using the instructions in Appendix VII and information on Appendix II, under which criterion listed in Part I.C are you eligible for coverage under this general permit?

A ☒ B ☐ C ☐ D ☐ E ☐ F ☐

b) If you selected Criterion D or F, has consultation with the federal services been completed? Y ☐ N ☐ Underway ☐

c) If consultation with U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is “not likely to adversely affect” listed species or critical habitat received? Y ☐ N ☐

d) Attach documentation of ESA eligibility as described in the NOI instructions and required by Appendix VII, Part I.C, Step 4.

e) Using the instructions in Appendix VII, under which criterion listed in Part II.C are you eligible for coverage under this general permit?

1 ☐ 2 ☒ 3 ☐

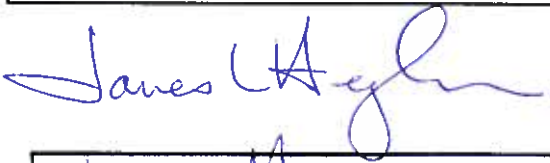
f) If Criterion 3 was selected, attach all written correspondence with the State or Tribal historic preservation officers, including any terms and conditions that outline measures the applicant must follow to mitigate or prevent adverse effects due to activities regulated by the RGP.

7. Supplemental information.

Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit.

8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

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 gather and evaluate 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, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility/Site Name:	Fan Pier Parcels H and I
Operator signature:	
Printed Name & Title:	James L. Heighon Senior Project Manager
Date:	1/7/14



APPENDIX C

RESULTS OF RECENT GROUNDWATER ANALYSIS

On December 2, 2013, McPhail Associates, LLC obtained samples of groundwater from on-site monitoring well B-411 (OW) and submitted the samples to a certified laboratory for analysis for the presence of parameters required under the EPA's Remediation General Permit (RGP) application, including pH, total suspended solids (TSS), total residual chlorine, total petroleum hydrocarbons (TPH), cyanide, volatile organic compounds (VOCs) including total benzene, toluene, ethylbenzene and xylenes (BTEX), polyaromatic hydrocarbons (PAHs), total phenols, PCBs, and total recoverable metals.

The results of the laboratory analysis are summarized in Table 1 included in Appendix C. The results of laboratory analysis indicate the following:

1. **pH:** The tested sample exhibited pH at a level of 6.9 Standard Units (S.U.). The level of 6.9 is within the recommended range of 6.5 to 8.3 S.U. for discharge into salt water.
2. **TSS:** Total suspended solids (TSS) were detected in the tested sample at a concentration of 210 milligrams per liter (mg/l). The detected level of TSS is considered to be attributable to the disturbance of suspended solids in the monitoring well during development of the well and subsequent sampling. However, it should be noted that groundwater will be pre-treated by passing through a sediment tank and bag filters prior to discharge in order to reduce the concentration of TSS in the effluent.
3. **VOCs:** The groundwater sample indicated no detected levels of any of the target VOCs, including BTEX.
4. **TPH:** Laboratory analysis of the groundwater sample indicated no detectable levels of TPH.
5. **PAHs and Total Phenols:** The laboratory reported no detectable levels of Group 1 or Group 2 PAHs. Total Phenols were not detected in the groundwater sample.
6. **PCBs:** The laboratory results indicated no detectable levels of PCBs.



7. **Cyanide:** Laboratory analysis of the groundwater sample indicated no detectable levels of cyanide.
8. **Total Metals:** The laboratory reported no detectable levels of antimony, cadmium, chromium VI, mercury, selenium or silver in the submitted sample of groundwater. Levels of arsenic, chromium III, copper, lead, nickel, zinc and iron were detected at maximum concentrations of 4.93 micrograms per liter (ug/l), 14.49 ug/l, 29.58 ug/l, 29.39 ug/l, 12.91 ug/l, 72.54 ug/l and 6,300 ug/l, respectively. The detected levels of arsenic, chromium III and zinc are below the EPA effluent limits of 36 ug/l, 100 ug/l and 85.6 ug/l, respectively, for discharge to a salt water body.

The detected levels of copper, lead, nickel and iron exceed the EPA effluent limits of 3.7 ug/l, 8.5 ug/l, 8.2 ug/l and 1,000 ug/l, respectively, for discharge into a salt water body. As noted above, TSS reduction measures will be implemented prior to discharge to reduce the concentration of TSS in the effluent. It is anticipated these treatment measures will also reduce the copper, lead, nickel and iron concentrations in the effluent.

TABLE 1

ANALYTICAL TEST RESULTS--GROUNDWATER DECEMBER 2013

Fan Pier Parcels H and I;
Boston, Massachusetts
Project Number 4426

LOCATION		RGP Limits (Saltwater)		B-411 (OW)
SAMPLING DATE				12/2/2013
LAB SAMPLE ID				L1324372-01
			Units	L1324372-01 R1
1	Solids, Total Suspended	30	mg/l	210
	pH (H)	6.5-8.3	SU	6.9
2	Total Residual Chlorine	7.5	ug/l	ND(20)
3	TPH	5000	ug/l	ND(4000)
4	Total Cyanide	1	ug/l	ND(5)
5	Benzene	Total BTEX	ug/l	ND(0.5)
6	Toluene	Total BTEX	ug/l	ND(0.75)
7	Ethylbenzene	Total BTEX	ug/l	ND(0.5)
8	Xylene (Total)	Total BTEX	ug/l	ND(1)
9	Total BTEX	100	ug/l	ND
10	1,2-Dibromoethane	0.05	ug/l	ND(0.01)
11	Methyl tert butyl ether	70	ug/l	ND(1)
12	Tert-Butyl Alcohol	Monitor Only	ug/l	ND(10)
13	Tertiary-Amyl Methyl Ether	Monitor Only	ug/l	ND(2)
14	Naphthalene	20	ug/l	ND(2.5)
15	Carbon tetrachloride	4.44	ug/l	ND(0.5)
16	1,2-Dichlorobenzene	600	ug/l	ND(2.5)
17	1,3-Dichlorobenzene	320	ug/l	ND(2.5)
18	1,4-Dichlorobenzene	5	ug/l	ND(2.5)
19	1,1-Dichloroethane	70	ug/l	ND(0.75)
20	1,2-Dichloroethane	5	ug/l	ND(0.5)
21	1,1-Dichloroethene	3.2	ug/l	ND(0.5)
22	cis-1,2-Dichloroethene	70	ug/l	ND(0.5)
23	Methylene chloride	4.6	ug/l	ND(3)
24	Tetrachloroethene	5	ug/l	ND(0.5)
25	1,1,1-Trichloroethane	200	ug/l	ND(0.5)
26	1,1,2-Trichloroethane	5	ug/l	ND(0.75)
27	Trichloroethene	5	ug/l	ND(0.5)
28	Vinyl chloride	2	ug/l	ND(1)
29	Acetone	Monitor Only	ug/l	ND(5)
30	1,4-Dioxane	Monitor Only	ug/l	ND(3)
31	Total Phenolics	300	ug/l	ND(10)
32	Pentachlorophenol	1	ug/l	ND(0.8)
33	Total Phthalates (Phthalate esters)	3	ug/l	ND(5)
34	Bis(2-ethylhexyl)phthalate	6	ug/l	ND(3)
35	Total Group I PAHs	10	ug/l	ND
a	Benzo(a)anthracene	0.0038	ug/l	ND(0.2)
b	Benzo(a)pyrene	0.0038	ug/l	ND(0.2)
c	Benzo(b)fluoranthene	0.0038	ug/l	ND(0.2)
d	Benzo(k)fluoranthene	0.0038	ug/l	ND(0.2)
e	Chrysene	0.0038	ug/l	ND(0.2)
f	Dibenzo(a,h)anthracene	0.0038	ug/l	ND(0.2)
g	Indeno(1,2,3-cd)Pyrene	0.0038	ug/l	ND(0.2)

Shading indicates an exceedence of the RGP Standards
ND--not detected above laboratory detection limit

TABLE 1

ANALYTICAL TEST RESULTS--GROUNDWATER DECEMBER 2013

Fan Pier Parcels H and I;
Boston, Massachusetts
Project Number 4426

LOCATION		RGP Limits (Saltwater)		B-411 (OW)
SAMPLING DATE				12/2/2013
LAB SAMPLE ID				L1324372-01
			Units	L1324372-01 R1
36	Total Group II PAHs	10	ug/l	ND
h	Acenaphthene	Total Group II PAH	ug/l	ND(0.2)
i	Acenaphthylene	Total Group II PAH	ug/l	ND(0.2)
j	Anthracene	Total Group II PAH	ug/l	ND(0.2)
k	Benzo(ghi)perylene	Total Group II PAH	ug/l	ND(0.2)
l	Fluoranthene	Total Group II PAH	ug/l	ND(0.2)
m	Fluorene	Total Group II PAH	ug/l	ND(0.2)
n	Naphthalene	20	ug/l	ND(0.2)
o	Phenanthrene	Total Group II PAH	ug/l	ND(0.2)
p	Pyrene	Total Group II PAH	ug/l	ND(0.2)
37	Total PCBs	0.000046	ug/l	ND
38	Chloride	Monitor Only	ug/l	64,500
	Total Recoverable Metal Limits			
39	Antimony, Total	5.6	ug/l	ND(1)
40	Arsenic, Total	36	ug/l	4.93
41	Cadmium, Total	8.9	ug/l	ND(0.2)
42	Chromium, Trivalent	100	ug/l	14.49
43	Chromium, Hexavalent	50.3	ug/l	ND(10)
44	Copper, Total	3.7	ug/l	29.58
45	Lead, Total	8.5	ug/l	29.39
46	Mercury, Total	1.1	ug/l	ND(0.2)
47	Nickel, Total	8.2	ug/l	12.91
48	Selenium, Total	71	ug/l	ND(5)
49	Silver, Total	2.2	ug/l	ND(0.4)
50	Zinc, Total	85.6	ug/l	72.54
51	Iron, Total	1000	ug/l	6300



ANALYTICAL REPORT

Lab Number:	L1324372
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FAN PIER PARCELS H AND I
Project Number:	4426.9.2H
Report Date:	12/09/13

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

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



Project Name: FAN PIER PARCELS H AND I
Project Number: 4426.9.2H

Lab Number: L1324372
Report Date: 12/09/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1324372-01	B-411(OW)	BOSTON, MA	12/02/13 10:00
L1324372-02	TRIP BLANK	BOSTON, MA	12/02/13 00:00

Project Name: FAN PIER PARCELS H AND I
Project Number: 4426.9.2H

Lab Number: L1324372
Report Date: 12/09/13

Case Narrative

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

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

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

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

HOLD POLICY

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

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

Project Name: FAN PIER PARCELS H AND I
Project Number: 4426.9.2H

Lab Number: L1324372
Report Date: 12/09/13

Case Narrative (continued)

Metals

The WG656238-4 MS recovery for iron (60%), performed on L1324372-01, does not apply because the sample concentration is greater than four times the spike amount added.

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:  Cynthia McQueen

Title: Technical Director/Representative

Date: 12/09/13

ORGANICS

VOLATILES

Project Name: FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13**SAMPLE RESULTS**

Lab ID: L1324372-01
Client ID: B-411(OW)
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 12/05/13 10:11
Analyst: MM

Date Collected: 12/02/13 10:00
Date Received: 12/02/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1

Project Name: FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13**SAMPLE RESULTS**

Lab ID: L1324372-01

Date Collected: 12/02/13 10:00

Client ID: B-411(OW)

Date Received: 12/02/13

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1

Project Name: FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13**SAMPLE RESULTS**

Lab ID: L1324372-01

Date Collected: 12/02/13 10:00

Client ID: B-411(OW)

Date Received: 12/02/13

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	105		70-130

Project Name: FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13**SAMPLE RESULTS**

Lab ID: L1324372-01
Client ID: B-411(OW)
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8260C-SIM(M)
Analytical Date: 12/05/13 10:11
Analyst: MM

Date Collected: 12/02/13 10:00
Date Received: 12/02/13
Field Prep: Not Specified

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

1,4-Dioxane	ND		ug/l	3.0	--	1
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Project Name: FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13**SAMPLE RESULTS**

Lab ID: L1324372-01
Client ID: B-411(OW)
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 12/04/13 15:28
Analyst: GP

Date Collected: 12/02/13 10:00
Date Received: 12/02/13
Field Prep: Not Specified
Extraction Date: 12/04/13 11:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A

Project Name: FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13**Method Blank Analysis**
Batch Quality Control

Analytical Method: 14,504.1

Analytical Date: 12/04/13 14:40

Analyst: GP

Extraction Date: 12/04/13 11:00

Parameter	Result	Qualifier	Units	RL	MDL
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG656063-1					
1,2-Dibromoethane	ND		ug/l	0.010	-- A

Project Name: FAN PIER PARCELS H AND I

Lab Number: L1324372

Project Number: 4426.9.2H

Report Date: 12/09/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 12/05/13 06:23
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG656476-3					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
2-Chloroethylvinyl ether	ND		ug/l	10	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--

Project Name: FAN PIER PARCELS H AND I

Lab Number: L1324372

Project Number: 4426.9.2H

Report Date: 12/09/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 12/05/13 06:23
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG656476-3					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
Iodomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrolein	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--

Project Name: FAN PIER PARCELS H AND I

Lab Number: L1324372

Project Number: 4426.9.2H

Report Date: 12/09/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 12/05/13 06:23
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG656476-3					
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Halothane	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Methyl Acetate	ND		ug/l	10	--
Ethyl Acetate	ND		ug/l	10	--
Isopropyl Ether	ND		ug/l	2.0	--
Cyclohexane	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	10	--
Methyl cyclohexane	ND		ug/l	10	--
p-Diethylbenzene	ND		ug/l	2.0	--
4-Ethyltoluene	ND		ug/l	2.0	--
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--

Project Name: FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13**Method Blank Analysis**
Batch Quality Control

Analytical Method: 1,8260C

Analytical Date: 12/05/13 06:23

Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG656476-3					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	105		70-130

Project Name: FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13**Method Blank Analysis**
Batch Quality Control

Analytical Method: 1,8260C-SIM(M)

Analytical Date: 12/05/13 09:06

Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG656478-3					
1,4-Dioxane	ND		ug/l	3.0	--

Lab Control Sample Analysis**Batch Quality Control****Project Name:** FAN PIER PARCELS H AND I**Project Number:** 4426.9.2H**Lab Number:** L1324372**Report Date:** 12/09/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 Batch: WG656063-2									
1,2-Dibromoethane	106		-		70-130	-		20	A

Lab Control Sample Analysis **Batch Quality Control**

Project Name: FAN PIER PARCELS H AND I

Project Number: 4426.9.2H

Lab Number: L1324372

Report Date: 12/09/13

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: WG656476-1 WG656476-2								
Methylene chloride	103		106		70-130	3		20
1,1-Dichloroethane	115		116		70-130	1		20
Chloroform	116		117		70-130	1		20
Carbon tetrachloride	117		121		63-132	3		20
1,2-Dichloropropane	115		117		70-130	2		20
Dibromochloromethane	104		112		63-130	7		20
1,1,2-Trichloroethane	109		110		70-130	1		20
2-Chloroethylvinyl ether	109		112		70-130	3		20
Tetrachloroethene	113		109		70-130	4		20
Chlorobenzene	111		110		75-130	1		25
Trichlorofluoromethane	102		103		62-150	1		20
1,2-Dichloroethane	114		117		70-130	3		20
1,1,1-Trichloroethane	119		120		67-130	1		20
Bromodichloromethane	117		123		67-130	5		20
trans-1,3-Dichloropropene	104		111		70-130	7		20
cis-1,3-Dichloropropene	112		118		70-130	5		20
1,1-Dichloropropene	105		106		70-130	1		20
Bromoform	100		109		54-136	9		20
1,1,2,2-Tetrachloroethane	108		107		67-130	1		20
Benzene	114		114		70-130	0		25
Toluene	110		108		70-130	2		25

Lab Control Sample Analysis **Batch Quality Control**

Project Name: FAN PIER PARCELS H AND I

Lab Number: L1324372

Project Number: 4426.9.2H

Report Date: 12/09/13

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: WG656476-1 WG656476-2								
Ethylbenzene	110		110		70-130	0		20
Chloromethane	106		105		64-130	1		20
Bromomethane	79		85		39-139	7		20
Vinyl chloride	111		114		55-140	3		20
Chloroethane	93		96		55-138	3		20
1,1-Dichloroethene	110		111		61-145	1		25
trans-1,2-Dichloroethene	113		113		70-130	0		20
Trichloroethene	124		124		70-130	0		25
1,2-Dichlorobenzene	107		107		70-130	0		20
1,3-Dichlorobenzene	111		105		70-130	6		20
1,4-Dichlorobenzene	107		108		70-130	1		20
Methyl tert butyl ether	110		116		63-130	5		20
p/m-Xylene	112		111		70-130	1		20
o-Xylene	108		108		70-130	0		20
cis-1,2-Dichloroethene	112		115		70-130	3		20
Dibromomethane	115		118		70-130	3		20
1,4-Dichlorobutane	109		111		70-130	2		20
Iodomethane	73		78		70-130	7		20
1,2,3-Trichloropropane	111		109		64-130	2		20
Styrene	111		110		70-130	1		20
Dichlorodifluoromethane	110		109		36-147	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCELS H AND I

Project Number: 4426.9.2H

Lab Number: L1324372

Report Date: 12/09/13

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: WG656476-1 WG656476-2								
Acetone	79		85		58-148	7		20
Carbon disulfide	91		97		51-130	6		20
2-Butanone	109		111		63-138	2		20
Vinyl acetate	84		102		70-130	19		20
4-Methyl-2-pentanone	105		116		59-130	10		20
2-Hexanone	102		109		57-130	7		20
Ethyl methacrylate	103		108		70-130	5		20
Acrolein	111		126		70-130	13		20
Acrylonitrile	110		122		70-130	10		20
Bromochloromethane	105		109		70-130	4		20
Tetrahydrofuran	111		115		58-130	4		20
2,2-Dichloropropane	113		115		63-133	2		20
1,2-Dibromoethane	106		112		70-130	6		20
1,3-Dichloropropane	106		107		70-130	1		20
1,1,1,2-Tetrachloroethane	117		120		64-130	3		20
Bromobenzene	110		108		70-130	2		20
n-Butylbenzene	112		109		53-136	3		20
sec-Butylbenzene	108		108		70-130	0		20
tert-Butylbenzene	112		109		70-130	3		20
o-Chlorotoluene	111		108		70-130	3		20
p-Chlorotoluene	110		108		70-130	2		20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: FAN PIER PARCELS H AND I

Lab Number: L1324372

Project Number: 4426.9.2H

Report Date: 12/09/13

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: WG656476-1 WG656476-2								
1,2-Dibromo-3-chloropropane	110		131		41-144	17		20
Hexachlorobutadiene	120		118		63-130	2		20
Isopropylbenzene	110		108		70-130	2		20
p-Isopropyltoluene	113		108		70-130	5		20
Naphthalene	99		104		70-130	5		20
n-Propylbenzene	117		114		69-130	3		20
1,2,3-Trichlorobenzene	103		108		70-130	5		20
1,2,4-Trichlorobenzene	107		104		70-130	3		20
1,3,5-Trimethylbenzene	112		109		64-130	3		20
1,3,5-Trichlorobenzene	104		104		70-130	0		20
1,2,4-Trimethylbenzene	117		114		70-130	3		20
trans-1,4-Dichloro-2-butene	86		88		70-130	2		20
Halothane	102		102		70-130	0		20
Ethyl ether	112		114		59-134	2		20
Methyl Acetate	114		120		70-130	5		20
Ethyl Acetate	108		120		70-130	11		20
Isopropyl Ether	113		116		70-130	3		20
Cyclohexane	109		109		70-130	0		20
Tert-Butyl Alcohol	116		142	Q	70-130	20		20
Ethyl-Tert-Butyl-Ether	97		113		70-130	15		20
Tertiary-Amyl Methyl Ether	108		113		66-130	5		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCELS H AND I

Project Number: 4426.9.2H

Lab Number: L1324372

Report Date: 12/09/13

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: WG656476-1 WG656476-2								
1,1,2-Trichloro-1,2,2-Trifluoroethane	102		102		70-130	0		20
Methyl cyclohexane	119		118		70-130	1		20
p-Diethylbenzene	110		106		70-130	4		20
4-Ethyltoluene	111		109		70-130	2		20
1,2,4,5-Tetramethylbenzene	109		106		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		97		70-130
Toluene-d8	97		93		70-130
4-Bromofluorobenzene	102		102		70-130
Dibromofluoromethane	102		103		70-130

Lab Control Sample Analysis**Batch Quality Control****Project Name:** FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13

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: WG656478-1 WG656478-2								
1,4-Dioxane	95		111		70-130	16		25

Matrix Spike Analysis

Batch Quality Control

Project Name: FAN PIER PARCELS H AND I

Lab Number: L1324372

Project Number: 4426.9.2H

Report Date: 12/09/13

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>	<i>Column</i>
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG656063-3 QC Sample: L1324372-01 Client ID: B-411(OW)													
1,2-Dibromoethane	ND	0.252	0.251	99		-	-		70-130	-		20	A

SEMIVOLATILES

Project Name: FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13**SAMPLE RESULTS**

Lab ID: L1324372-01
Client ID: B-411(OW)
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 12/05/13 10:51
Analyst: JB

Date Collected: 12/02/13 10:00
Date Received: 12/02/13
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 12/04/13 16:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzidine	ND		ug/l	20	--	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--	1
1,2-Dichlorobenzene	ND		ug/l	2.0	--	1
1,3-Dichlorobenzene	ND		ug/l	2.0	--	1
1,4-Dichlorobenzene	ND		ug/l	2.0	--	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--	1
2,4-Dinitrotoluene	ND		ug/l	5.0	--	1
2,6-Dinitrotoluene	ND		ug/l	5.0	--	1
Azobenzene	ND		ug/l	2.0	--	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--	1
Hexachlorocyclopentadiene	ND		ug/l	20	--	1
Isophorone	ND		ug/l	5.0	--	1
Nitrobenzene	ND		ug/l	2.0	--	1
NDPA/DPA	ND		ug/l	2.0	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	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
Aniline	ND		ug/l	2.0	--	1
4-Chloroaniline	ND		ug/l	5.0	--	1
2-Nitroaniline	ND		ug/l	5.0	--	1
3-Nitroaniline	ND		ug/l	5.0	--	1
4-Nitroaniline	ND		ug/l	5.0	--	1
Dibenzofuran	ND		ug/l	2.0	--	1
n-Nitrosodimethylamine	ND		ug/l	2.0	--	1

Project Name: FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13**SAMPLE RESULTS**

Lab ID: L1324372-01

Date Collected: 12/02/13 10:00

Client ID: B-411(OW)

Date Received: 12/02/13

Sample Location: BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,6-Trichlorophenol	ND		ug/l	5.0	--	1
p-Chloro-m-cresol	ND		ug/l	2.0	--	1
2-Chlorophenol	ND		ug/l	2.0	--	1
2,4-Dichlorophenol	ND		ug/l	5.0	--	1
2,4-Dimethylphenol	ND		ug/l	5.0	--	1
2-Nitrophenol	ND		ug/l	10	--	1
4-Nitrophenol	ND		ug/l	10	--	1
2,4-Dinitrophenol	ND		ug/l	20	--	1
4,6-Dinitro-o-cresol	ND		ug/l	10	--	1
Phenol	ND		ug/l	5.0	--	1
2-Methylphenol	ND		ug/l	5.0	--	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	--	1
Benzoic Acid	ND		ug/l	50	--	1
Benzyl Alcohol	ND		ug/l	2.0	--	1
Carbazole	ND		ug/l	2.0	--	1
Pyridine	ND		ug/l	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		21-120
Phenol-d6	34		10-120
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	87		15-120
2,4,6-Tribromophenol	116		10-120
4-Terphenyl-d14	107		41-149

Project Name: FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13**SAMPLE RESULTS**

Lab ID: L1324372-01
Client ID: B-411(OW)
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 12/04/13 13:16
Analyst: AS

Date Collected: 12/02/13 10:00
Date Received: 12/02/13
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 12/03/13 11:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.20	--	1
2-Chloronaphthalene	ND		ug/l	0.20	--	1
Fluoranthene	ND		ug/l	0.20	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.20	--	1
Benzo(a)anthracene	ND		ug/l	0.20	--	1
Benzo(a)pyrene	ND		ug/l	0.20	--	1
Benzo(b)fluoranthene	ND		ug/l	0.20	--	1
Benzo(k)fluoranthene	ND		ug/l	0.20	--	1
Chrysene	ND		ug/l	0.20	--	1
Acenaphthylene	ND		ug/l	0.20	--	1
Anthracene	ND		ug/l	0.20	--	1
Benzo(ghi)perylene	ND		ug/l	0.20	--	1
Fluorene	ND		ug/l	0.20	--	1
Phenanthrene	ND		ug/l	0.20	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	--	1
Pyrene	ND		ug/l	0.20	--	1
1-Methylnaphthalene	ND		ug/l	0.20	--	1
2-Methylnaphthalene	ND		ug/l	0.20	--	1
Pentachlorophenol	ND		ug/l	0.80	--	1
Hexachlorobenzene	ND		ug/l	0.80	--	1
Hexachloroethane	ND		ug/l	0.80	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	42		21-120
Phenol-d6	31		10-120
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	59		15-120
2,4,6-Tribromophenol	76		10-120
4-Terphenyl-d14	97		41-149

Project Name: FAN PIER PARCELS H AND I

Lab Number: L1324372

Project Number: 4426.9.2H

Report Date: 12/09/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM
 Analytical Date: 12/04/13 11:46
 Analyst: AS

Extraction Method: EPA 3510C
 Extraction Date: 12/03/13 11:16

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG655706-1					
Acenaphthene	ND		ug/l	0.20	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.20	--
Benzo(a)anthracene	ND		ug/l	0.20	--
Benzo(a)pyrene	ND		ug/l	0.20	--
Benzo(b)fluoranthene	ND		ug/l	0.20	--
Benzo(k)fluoranthene	ND		ug/l	0.20	--
Chrysene	ND		ug/l	0.20	--
Acenaphthylene	ND		ug/l	0.20	--
Anthracene	ND		ug/l	0.20	--
Benzo(ghi)perylene	ND		ug/l	0.20	--
Fluorene	ND		ug/l	0.20	--
Phenanthrene	ND		ug/l	0.20	--
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	--
Pyrene	ND		ug/l	0.20	--
1-Methylnaphthalene	ND		ug/l	0.20	--
2-Methylnaphthalene	ND		ug/l	0.20	--
Pentachlorophenol	ND		ug/l	0.80	--
Hexachlorobenzene	ND		ug/l	0.80	--
Hexachloroethane	ND		ug/l	0.80	--

Project Name: FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13**Method Blank Analysis**
Batch Quality ControlAnalytical Method: 1,8270D-SIM
Analytical Date: 12/04/13 11:46
Analyst: ASExtraction Method: EPA 3510C
Extraction Date: 12/03/13 11:16

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG655706-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	43		21-120
Phenol-d6	29		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	60		15-120
2,4,6-Tribromophenol	78		10-120
4-Terphenyl-d14	91		41-149

Project Name: FAN PIER PARCELS H AND I

Lab Number: L1324372

Project Number: 4426.9.2H

Report Date: 12/09/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D
 Analytical Date: 12/05/13 09:28
 Analyst: JB

Extraction Method: EPA 3510C
 Extraction Date: 12/04/13 16:09

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG656239-1					
Benzidine	ND		ug/l	20	--
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--
1,2-Dichlorobenzene	ND		ug/l	2.0	--
1,3-Dichlorobenzene	ND		ug/l	2.0	--
1,4-Dichlorobenzene	ND		ug/l	2.0	--
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--
2,4-Dinitrotoluene	ND		ug/l	5.0	--
2,6-Dinitrotoluene	ND		ug/l	5.0	--
Azobenzene	ND		ug/l	2.0	--
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--
Hexachlorocyclopentadiene	ND		ug/l	20	--
Isophorone	ND		ug/l	5.0	--
Nitrobenzene	ND		ug/l	2.0	--
NDPA/DPA	ND		ug/l	2.0	--
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--
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	--
Aniline	ND		ug/l	2.0	--
4-Chloroaniline	ND		ug/l	5.0	--
2-Nitroaniline	ND		ug/l	5.0	--
3-Nitroaniline	ND		ug/l	5.0	--
4-Nitroaniline	ND		ug/l	5.0	--
Dibenzofuran	ND		ug/l	2.0	--
n-Nitrosodimethylamine	ND		ug/l	2.0	--

Project Name: FAN PIER PARCELS H AND I

Lab Number: L1324372

Project Number: 4426.9.2H

Report Date: 12/09/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D
 Analytical Date: 12/05/13 09:28
 Analyst: JB

Extraction Method: EPA 3510C
 Extraction Date: 12/04/13 16:09

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG656239-1					
2,4,6-Trichlorophenol	ND		ug/l	5.0	--
p-Chloro-m-cresol	ND		ug/l	2.0	--
2-Chlorophenol	ND		ug/l	2.0	--
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	10	--
4-Nitrophenol	ND		ug/l	10	--
2,4-Dinitrophenol	ND		ug/l	20	--
4,6-Dinitro-o-cresol	ND		ug/l	10	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol	ND		ug/l	5.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--
Benzoic Acid	ND		ug/l	50	--
Benzyl Alcohol	ND		ug/l	2.0	--
Carbazole	ND		ug/l	2.0	--
Pyridine	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	50		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	84		15-120
2,4,6-Tribromophenol	90		10-120
4-Terphenyl-d14	98		41-149

Lab Control Sample Analysis **Batch Quality Control**

Project Name: FAN PIER PARCELS H AND I

Lab Number: L1324372

Project Number: 4426.9.2H

Report Date: 12/09/13

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: WG655706-2 WG655706-3								
Acenaphthene	74		69		37-111	7		40
2-Chloronaphthalene	75		72		40-140	4		40
Fluoranthene	89		87		40-140	2		40
Hexachlorobutadiene	61		62		40-140	2		40
Naphthalene	71		71		40-140	0		40
Benzo(a)anthracene	89		92		40-140	3		40
Benzo(a)pyrene	81		82		40-140	1		40
Benzo(b)fluoranthene	87		86		40-140	1		40
Benzo(k)fluoranthene	85		86		40-140	1		40
Chrysene	78		80		40-140	3		40
Acenaphthylene	84		80		40-140	5		40
Anthracene	80		76		40-140	5		40
Benzo(ghi)perylene	77		78		40-140	1		40
Fluorene	71		71		40-140	0		40
Phenanthrene	86		83		40-140	4		40
Dibenzo(a,h)anthracene	80		81		40-140	1		40
Indeno(1,2,3-cd)Pyrene	86		86		40-140	0		40
Pyrene	85		85		26-127	0		40
1-Methylnaphthalene	75		74		40-140	1		40
2-Methylnaphthalene	72		71		40-140	1		40
Pentachlorophenol	97		95		9-103	2		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCELS H AND I

Lab Number: L1324372

Project Number: 4426.9.2H

Report Date: 12/09/13

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: WG655706-2 WG655706-3								
Hexachlorobenzene	79		80		40-140	1		40
Hexachloroethane	66		68		40-140	3		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	48		46		21-120
Phenol-d6	35		35		10-120
Nitrobenzene-d5	79		80		23-120
2-Fluorobiphenyl	70		67		15-120
2,4,6-Tribromophenol	79		80		10-120
4-Terphenyl-d14	103		102		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCELS H AND I

Project Number: 4426.9.2H

Lab Number: L1324372

Report Date: 12/09/13

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: WG656239-2 WG656239-3								
Benzidine	21		30		10-75	35	Q	30
1,2,4-Trichlorobenzene	69		72		39-98	4		30
Bis(2-chloroethyl)ether	73		71		40-140	3		30
1,2-Dichlorobenzene	66		66		40-140	0		30
1,3-Dichlorobenzene	64		65		40-140	2		30
1,4-Dichlorobenzene	64		66		36-97	3		30
3,3'-Dichlorobenzidine	82		76		40-140	8		30
2,4-Dinitrotoluene	103	Q	104	Q	24-96	1		30
2,6-Dinitrotoluene	110		107		40-140	3		30
Azobenzene	84		83		40-140	1		30
4-Chlorophenyl phenyl ether	91		92		40-140	1		30
4-Bromophenyl phenyl ether	100		98		40-140	2		30
Bis(2-chloroisopropyl)ether	62		63		40-140	2		30
Bis(2-chloroethoxy)methane	75		76		40-140	1		30
Hexachlorocyclopentadiene	85		86		40-140	1		30
Isophorone	74		74		40-140	0		30
Nitrobenzene	82		84		40-140	2		30
NDPA/DPA	95		94		40-140	1		30
Bis(2-ethylhexyl)phthalate	94		94		40-140	0		30
Butyl benzyl phthalate	100		99		40-140	1		30
Di-n-butylphthalate	101		103		40-140	2		30

Lab Control Sample Analysis **Batch Quality Control**

Project Name: FAN PIER PARCELS H AND I

Project Number: 4426.9.2H

Lab Number: L1324372

Report Date: 12/09/13

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: WG656239-2 WG656239-3								
Di-n-octylphthalate	103		104		40-140	1		30
Diethyl phthalate	98		97		40-140	1		30
Dimethyl phthalate	96		95		40-140	1		30
Aniline	40		40		40-140	0		30
4-Chloroaniline	51		50		40-140	2		30
2-Nitroaniline	94		93		52-143	1		30
3-Nitroaniline	56		49		25-145	13		30
4-Nitroaniline	87		86		51-143	1		30
Dibenzofuran	90		90		40-140	0		30
n-Nitrosodimethylamine	45		43		22-74	5		30
2,4,6-Trichlorophenol	101		100		30-130	1		30
p-Chloro-m-cresol	96		97		23-97	1		30
2-Chlorophenol	78		80		27-123	3		30
2,4-Dichlorophenol	90		90		30-130	0		30
2,4-Dimethylphenol	90		91		30-130	1		30
2-Nitrophenol	88		88		30-130	0		30
4-Nitrophenol	64		63		10-80	2		30
2,4-Dinitrophenol	109		106		20-130	3		30
4,6-Dinitro-o-cresol	106		106		20-164	0		30
Phenol	39		40		12-110	3		30
2-Methylphenol	76		76		30-130	0		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCELS H AND I

Lab Number: L1324372

Project Number: 4426.9.2H

Report Date: 12/09/13

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: WG656239-2 WG656239-3								
3-Methylphenol/4-Methylphenol	75		75		30-130	0		30
2,4,5-Trichlorophenol	105		102		30-130	3		30
Benzoic Acid	29		25		10-164	15		30
Benzyl Alcohol	67		66		26-116	2		30
Carbazole	93		93		55-144	0		30
Pyridine	16		20		10-66	22		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	58		57		21-120
Phenol-d6	38		38		10-120
Nitrobenzene-d5	92		90		23-120
2-Fluorobiphenyl	91		90		15-120
2,4,6-Tribromophenol	117		114		10-120
4-Terphenyl-d14	102		101		41-149

PCBS

Project Name: FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13**SAMPLE RESULTS**

Lab ID: L1324372-01
Client ID: B-411(OW)
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 5,608
Analytical Date: 12/04/13 15:58
Analyst: JT

Date Collected: 12/02/13 10:00
Date Received: 12/02/13
Field Prep: Not Specified
Extraction Method: EPA 608
Extraction Date: 12/03/13 14:15
Cleanup Method1: EPA 3665A
Cleanup Date1: 12/04/13
Cleanup Method2: EPA 3660B
Cleanup Date2: 12/04/13

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	65		30-150	A
Decachlorobiphenyl	53		30-150	A

Project Name: FAN PIER PARCELS H AND I**Lab Number:** L1324372**Project Number:** 4426.9.2H**Report Date:** 12/09/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
 Analytical Date: 12/04/13 16:35
 Analyst: JT

Extraction Method: EPA 608
 Extraction Date: 12/03/13 14:15
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 12/04/13
 Cleanup Method2: EPA 3660B
 Cleanup Date2: 12/04/13

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG655783-1						
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	65		30-150	A
Decachlorobiphenyl	77		30-150	A

Matrix Spike Analysis

Batch Quality Control

Project Name: FAN PIER PARCELS H AND I
Project Number: 4426.9.2H

Lab Number: L1324372
Report Date: 12/09/13

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>	<i>Column</i>
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655783-3 QC Sample: L1324372-01 Client ID: B-411(OW)													
Aroclor 1016	ND	1.04	0.741	71		-	-		40-140	-		50	A
Aroclor 1260	ND	1.04	0.646	62		-	-		40-140	-		50	A

<i>Surrogate</i>	<i>MS % Recovery</i>	<i>Qualifier</i>	<i>MSD % Recovery</i>	<i>Qualifier</i>	<i>Acceptance Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene	71				30-150	A
Decachlorobiphenyl	61				30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCELS H AND I
Project Number: 4426.9.2H

Lab Number: L1324372
Report Date: 12/09/13

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: WG655783-2									
Aroclor 1016	70		-		40-140	-		50	A
Aroclor 1260	69		-		40-140	-		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64				30-150	A
Decachlorobiphenyl	80				30-150	A

Lab Duplicate Analysis Batch Quality Control

Project Name: FAN PIER PARCELS H AND I

Project Number: 4426.9.2H

Lab Number: L1324372

Report Date: 12/09/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655783-4 QC Sample: L1324341-08 Client ID: DUP Sample						
Aroclor 1016	ND	ND	ug/l	NC		50 A
Aroclor 1221	ND	ND	ug/l	NC		50 A
Aroclor 1232	ND	ND	ug/l	NC		50 A
Aroclor 1242	ND	ND	ug/l	NC		50 A
Aroclor 1248	ND	ND	ug/l	NC		50 A
Aroclor 1254	ND	ND	ug/l	NC		50 A
Aroclor 1260	ND	ND	ug/l	NC		50 A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		71		30-150	A
Decachlorobiphenyl	67		76		30-150	A

METALS

Project Name: FAN PIER PARCELS H AND I

Lab Number: L1324372

Project Number: 4426.9.2H

Report Date: 12/09/13

SAMPLE RESULTS

Lab ID: L1324372-01

Date Collected: 12/02/13 10:00

Client ID: B-411(OW)

Date Received: 12/02/13

Sample Location: BOSTON, MA

Field Prep: Not Specified

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Antimony, Total	ND		mg/l	0.00100	--	1	12/03/13 10:06	12/04/13 23:04	EPA 3005A	1,6020A	BM
Arsenic, Total	0.00493		mg/l	0.00050	--	1	12/03/13 10:06	12/04/13 23:04	EPA 3005A	1,6020A	BM
Cadmium, Total	ND		mg/l	0.00020	--	1	12/03/13 10:06	12/04/13 23:04	EPA 3005A	1,6020A	BM
Chromium, Total	0.01449		mg/l	0.00100	--	1	12/03/13 10:06	12/04/13 23:04	EPA 3005A	1,6020A	BM
Copper, Total	0.02958		mg/l	0.02000	--	20	12/03/13 10:06	12/03/13 22:27	EPA 3005A	1,6020A	BM
Iron, Total	6.3		mg/l	0.05	--	1	12/03/13 10:06	12/05/13 16:55	EPA 3005A	19,200.7	TT
Lead, Total	0.02939		mg/l	0.00100	--	1	12/03/13 10:06	12/04/13 23:04	EPA 3005A	1,6020A	BM
Mercury, Total	ND		mg/l	0.0002	--	1	12/06/13 08:30	12/06/13 15:57	EPA 245.1	3,245.1	MC
Nickel, Total	0.01291		mg/l	0.00050	--	1	12/03/13 10:06	12/04/13 23:04	EPA 3005A	1,6020A	BM
Selenium, Total	ND		mg/l	0.00500	--	1	12/03/13 10:06	12/04/13 23:04	EPA 3005A	1,6020A	BM
Silver, Total	ND		mg/l	0.00040	--	1	12/03/13 10:06	12/04/13 23:04	EPA 3005A	1,6020A	BM
Zinc, Total	0.07254		mg/l	0.01000	--	1	12/03/13 10:06	12/04/13 23:04	EPA 3005A	1,6020A	BM



Project Name: FAN PIER PARCELS H AND I
Project Number: 4426.9.2H

Lab Number: L1324372
Report Date: 12/09/13

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG655668-1										
Antimony, Total	ND		mg/l	0.00100	--	1	12/03/13 10:06	12/03/13 23:05	1,6020A	BM
Arsenic, Total	ND		mg/l	0.00050	--	1	12/03/13 10:06	12/03/13 23:05	1,6020A	BM
Cadmium, Total	ND		mg/l	0.00020	--	1	12/03/13 10:06	12/03/13 23:05	1,6020A	BM
Chromium, Total	ND		mg/l	0.00100	--	1	12/03/13 10:06	12/03/13 23:05	1,6020A	BM
Copper, Total	ND		mg/l	0.00100	--	1	12/03/13 10:06	12/03/13 23:05	1,6020A	BM
Lead, Total	ND		mg/l	0.00100	--	1	12/03/13 10:06	12/03/13 23:05	1,6020A	BM
Nickel, Total	ND		mg/l	0.00050	--	1	12/03/13 10:06	12/03/13 23:05	1,6020A	BM
Selenium, Total	ND		mg/l	0.00500	--	1	12/03/13 10:06	12/03/13 23:05	1,6020A	BM
Silver, Total	ND		mg/l	0.00040	--	1	12/03/13 10:06	12/03/13 23:05	1,6020A	BM
Zinc, Total	ND		mg/l	0.01000	--	1	12/03/13 10:06	12/03/13 23:05	1,6020A	BM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG656238-1										
Iron, Total	ND		mg/l	0.05	--	1	12/03/13 10:06	12/05/13 16:47	19,200.7	TT

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG656692-1										
Mercury, Total	ND		mg/l	0.0002	--	1	12/06/13 08:30	12/06/13 15:34	3,245.1	MC

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis**Batch Quality Control****Project Name:** FAN PIER PARCELS H AND I**Project Number:** 4426.9.2H**Lab Number:** L1324372**Report Date:** 12/09/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG655668-2								
Antimony, Total	87		-		80-120	-		
Arsenic, Total	101		-		80-120	-		
Cadmium, Total	100		-		80-120	-		
Chromium, Total	98		-		80-120	-		
Copper, Total	98		-		80-120	-		
Lead, Total	99		-		80-120	-		
Nickel, Total	98		-		80-120	-		
Selenium, Total	105		-		80-120	-		
Silver, Total	92		-		80-120	-		
Zinc, Total	102		-		80-120	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG656238-2								
Iron, Total	88		-		85-115	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG656692-2								
Mercury, Total	96		-		85-115	-		

Matrix Spike Analysis **Batch Quality Control**

Project Name: FAN PIER PARCELS H AND I
Project Number: 4426.9.2H

Lab Number: L1324372
Report Date: 12/09/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655668-4 QC Sample: L1324372-01 Client ID: B-411(OW)												
Antimony, Total	ND	0.5	0.4334	87		-	-		80-120	-		20
Arsenic, Total	ND	0.12	0.1303	108		-	-		80-120	-		20
Cadmium, Total	ND	0.051	0.05210	102		-	-		80-120	-		20
Chromium, Total	ND	0.2	0.2128	106		-	-		80-120	-		20
Copper, Total	0.02958	0.25	0.2770	99		-	-		80-120	-		20
Lead, Total	0.02722	0.51	0.5456	102		-	-		80-120	-		20
Nickel, Total	0.01435	0.5	0.5084	99		-	-		80-120	-		20
Selenium, Total	ND	0.12	0.122	102		-	-		80-120	-		20
Silver, Total	ND	0.05	0.04744	95		-	-		80-120	-		20
Zinc, Total	ND	0.5	0.5876	118		-	-		80-120	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG656238-4 QC Sample: L1324372-01 Client ID: B-411(OW)												
Iron, Total	6.3	1	6.9	60	Q	-	-		75-125	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG656692-4 QC Sample: L1324372-01 Client ID: B-411(OW)												
Mercury, Total	ND	0.005	0.0059	117		-	-		70-130	-		20

Lab Duplicate Analysis **Batch Quality Control**

Project Name: FAN PIER PARCELS H AND I

Project Number: 4426.9.2H

Lab Number: L1324372

Report Date: 12/09/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655668-3 QC Sample: L1324372-01 Client ID: B-411(OW)						
Copper, Total	0.02958	0.02874	mg/l	3		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655668-3 QC Sample: L1324372-01 Client ID: B-411(OW)						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.00493	0.00494	mg/l	0		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.01449	0.01425	mg/l	2		20
Lead, Total	0.02939	0.02809	mg/l	5		20
Nickel, Total	0.01291	0.01263	mg/l	2		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.07254	0.07143	mg/l	2		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG656238-3 QC Sample: L1324372-01 Client ID: B-411(OW)						
Iron, Total	6.3	6.6	mg/l	5		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG656692-3 QC Sample: L1324372-01 Client ID: B-411(OW)						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS & MISCELLANEOUS

Project Name: FAN PIER PARCELS H AND I
Project Number: 4426.9.2H

Lab Number: L1324372
Report Date: 12/09/13

SAMPLE RESULTS

Lab ID: L1324372-01
Client ID: B-411(OW)
Sample Location: BOSTON, MA
Matrix: Water

Date Collected: 12/02/13 10:00
Date Received: 12/02/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	210		mg/l	10	NA	2	-	12/03/13 12:45	30,2540D	DW
Cyanide, Total	ND		mg/l	0.005	--	1	12/03/13 22:30	12/04/13 13:38	30,4500CN-CE	JO
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	12/03/13 00:30	30,4500CL-D	DE
pH (H)	6.9		SU	-	NA	1	-	12/03/13 02:00	30,4500H+-B	DE
TPH	ND		mg/l	4.00	--	1	12/05/13 13:30	12/06/13 09:30	74,1664A	ML
Phenolics, Total	ND		mg/l	0.03	--	1	12/04/13 11:45	12/04/13 14:40	4,420.1	TE
Chromium, Hexavalent	ND		mg/l	0.010	--	1	12/03/13 01:00	12/03/13 01:19	30,3500CR-D	JT
Anions by Ion Chromatography - Westborough Lab										
Chloride	64.5		mg/l	2.50	--	5	-	12/05/13 21:09	44,300.0	AU



Project Name: FAN PIER PARCELS H AND I

Lab Number: L1324372

Project Number: 4426.9.2H

Report Date: 12/09/13

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: WG655544-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	12/03/13 00:30	30,4500CL-D	DE
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG655577-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	12/03/13 01:00	12/03/13 01:18	30,3500CR-D	JT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG655616-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	12/03/13 12:45	30,2540D	DW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG655867-1										
Cyanide, Total	ND		mg/l	0.005	--	1	12/03/13 22:30	12/04/13 13:24	30,4500CN-CE	JO
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG656056-1										
Phenolics, Total	ND		mg/l	0.03	--	1	12/04/13 11:45	12/04/13 14:39	4,420.1	TE
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG656554-1										
TPH	ND		mg/l	4.00	--	1	12/05/13 13:30	12/06/13 09:30	74,1664A	ML
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG656639-1										
Chloride	ND		mg/l	0.500	--	1	-	12/05/13 17:56	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: FAN PIER PARCELS H AND I
Project Number: 4426.9.2H

Lab Number: L1324372
Report Date: 12/09/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG655541-1								
pH	101		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG655544-2								
Chlorine, Total Residual	97		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG655577-2								
Chromium, Hexavalent	98		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG655867-2								
Cyanide, Total	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG656056-2								
Phenolics, Total	113		-		70-130	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG656554-2								
TPH	90		-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG656639-2								
Chloride	102		-		90-110	-		

Matrix Spike Analysis

Batch Quality Control

Project Name: FAN PIER PARCELS H AND I
Project Number: 4426.9.2H

Lab Number: L1324372
Report Date: 12/09/13

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: WG655577-4 QC Sample: L1324372-01 Client ID: B-411(OW)												
Chromium, Hexavalent	ND	0.1	0.095	95		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655867-4 QC Sample: L1324351-01 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.201	100		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG656056-4 QC Sample: L1324004-02 Client ID: MS Sample												
Phenolics, Total	ND	0.4	0.41	102		-	-		70-130	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG656554-4 QC Sample: L1324378-02 Client ID: MS Sample												
TPH	20.4	20.4	41.7	104		-	-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG656639-3 QC Sample: L1324677-03 Client ID: MS Sample												
Chloride	ND	4	4.15	104		-	-		40-151	-		18

Lab Duplicate Analysis

Batch Quality Control

Project Name: FAN PIER PARCELS H AND I

Project Number: 4426.9.2H

Lab Number: L1324372

Report Date: 12/09/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655541-2 QC Sample: L1324372-01 Client ID: B-411(OW)						
pH (H)	6.9	6.9	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655544-3 QC Sample: L1324320-01 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655577-3 QC Sample: L1324372-01 Client ID: B-411(OW)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655616-2 QC Sample: L1324254-01 Client ID: DUP Sample						
Solids, Total Suspended	840	730	mg/l	14		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655867-3 QC Sample: L1324351-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG656056-3 QC Sample: L1324004-01 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG656554-3 QC Sample: L1324372-01 Client ID: B-411(OW)						
TPH	ND	ND	mg/l	NC		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG656639-4 QC Sample: L1324677-03 Client ID: DUP Sample						
Chloride	ND	ND	mg/l	NC		18

Project Name: FAN PIER PARCELS H AND I**Project Number:** 4426.9.2H**Lab Number:** L1324372**Report Date:** 12/09/13**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA**Cooler Information Custody Seal****Cooler**

A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1324372-01A	Vial HCl preserved	A	N/A	2.9	Y	Absent	8260-SIM(14),8260(14)
L1324372-01B	Vial HCl preserved	A	N/A	2.9	Y	Absent	8260-SIM(14),8260(14)
L1324372-01C	Vial HCl preserved	A	N/A	2.9	Y	Absent	8260-SIM(14),8260(14)
L1324372-01D	Vial Na2S2O3 preserved	A	N/A	2.9	Y	Absent	504(14)
L1324372-01E	Vial Na2S2O3 preserved	A	N/A	2.9	Y	Absent	504(14)
L1324372-01F	Amber 1000ml Na2S2O3	A	7	2.9	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1324372-01G	Amber 1000ml Na2S2O3	A	7	2.9	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1324372-01H	Amber 1000ml Na2S2O3	A	7	2.9	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1324372-01I	Amber 1000ml Na2S2O3	A	7	2.9	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1324372-01J	Amber 1000ml Na2S2O3	A	7	2.9	Y	Absent	PCB-608(7)
L1324372-01K	Amber 1000ml Na2S2O3	A	7	2.9	Y	Absent	PCB-608(7)
L1324372-01L	Amber 1000ml HCl preserved	A	N/A	2.9	Y	Absent	TPH-1664(28)
L1324372-01M	Amber 1000ml HCl preserved	A	N/A	2.9	Y	Absent	TPH-1664(28)
L1324372-01N	Amber 500ml H2SO4 preserved	A	<2	2.9	Y	Absent	TPHENOL-420(28)
L1324372-01O	Plastic 1000ml unpreserved	A	7	2.9	Y	Absent	TSS-2540(7)
L1324372-01P	Plastic 500ml unpreserved	A	7	2.9	Y	Absent	CL-300(28),HEXCR-3500(1),TRC-4500(1),PH-4500(.01)
L1324372-01Q	Plastic 500ml unpreserved	A	7	2.9	Y	Absent	CL-300(28),HEXCR-3500(1),TRC-4500(1),PH-4500(.01)
L1324372-01R	Plastic 250ml NaOH preserved	A	>12	2.9	Y	Absent	TCN-4500(14)
L1324372-01S	Plastic 250ml HNO3 preserved	A	<2	2.9	Y	Absent	SE-6020T(180),CR-6020T(180),NI-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180),HG-U(28),AS-6020T(180),SB-6020T(180),AG-6020T(180),CD-6020T(180)
L1324372-02A	Vial HCl preserved	A	N/A	2.9	Y	Absent	HOLD(14)
L1324372-02B	Vial Na2S2O3 preserved	A	N/A	2.9	Y	Absent	HOLD(14)

*Values in parentheses indicate holding time in days



Project Name: FAN PIER PARCELS H AND I
Project Number: 4426.9.2H

Lab Number: L1324372
Report Date: 12/09/13

GLOSSARY

Acronyms

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

Footnotes

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

Terms

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

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.

Report Format: Data Usability Report



Project Name: FAN PIER PARCELS H AND I
Project Number: 4426.9.2H

Lab Number: L1324372
Report Date: 12/09/13

Data Qualifiers

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

Project Name: FAN PIER PARCELS H AND I
Project Number: 4426.9.2H

Lab Number: L1324372
Report Date: 12/09/13

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.
- 5 Methods for the Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A, Part 136, 40 CFR (Code of Federal Regulations).
- 14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- 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.
- 30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.
- 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.

LIMITATION OF LIABILITIES

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

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



Certificate/Approval Program Summary

Last revised November 12, 2013 - Westboro Facility

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

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

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

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

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

State of Illinois Certificate/Lab ID: 003155. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM2120B, 2320B, 2510B, 2540C, SM4500CN-CE, 4500F-C, 4500H-B, 4500NO3-F, 5310C, EPA 200.7, 200.8, 245.1, 300.0. Organic Parameters: EPA 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: SM2120B, 2310B, 2320B, 2340B, 2510B, 2540B, 2540C, 2540D, SM4500CL-E, 4500CN-E, 4500F-C, 4500H-B, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500P-E, 4500S-D, 4500SO3-B, 5210B, 5220D, 5310C, 5540C, EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1. Organic Parameters: EPA 608, 624, 625.)

Hazardous and Solid Waste (Inorganic Parameters: EPA 1010A, 1030, 1311, 1312, 6010C, 6020A, 7196A, 7470A, 7471B, 9012B, 9014, 9038, 9040C, 9045D, 9050A, 9065, 9251. Organic Parameters: 8011 (NPW only), 8015C, 8081B, 8082A, 8151A, 8260C, 8270D, 8315A, 8330.)

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

Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2120B, 2130B, 2320B, 2510C, 2540C, 4500CI-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, 5310C, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 8315A, 9010C, SM2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CI-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-C, 4500NH3-B, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500P-B, 4500P-E, 4500S2-D, 4500SO3-B, 5540C, 5210B, 5220D, 5310C, 9010B, 9030B, 9040C, 7470A, 7196A, 2340B, EPA 200.7, 6010C, 200.8, 6020A, 245.1, 1311, 1312, 3005A, Enterolert, 9223B, 9222D. Organic Parameters: 608, 624, 625, 8011, 8081B, 8082A, 8330, 8151A, 8260C, 8270D, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: 9010B, 9012A, 9014, 9040B, 9045C, 6010C, 6020A, 7471B, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B, 9038, 9251. *Organic Parameters:* ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260C, 8270D, 8330, 8151A, 8081B, 8082A, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5035.)

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

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

Non-Potable Water (Inorganic Parameters: (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn); (EPA 200.7 for: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn); 245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH₃-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO₃-F, 353.2 for Nitrate-N, SM4500NH₃-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. *Microbiology Parameters:* (ColilertQT SM9223B; Enterolert-QT: SM9222D-MF.)

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

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

Non-Potable Water (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 3005A, 200.7, 200.8, 245.1, SW-846 6010C, 6020A, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 350.2, 351.1, 353.2, 410.4, 420.1, 426C, 1664A, SW-846 9010B, 9010C, 9030, 9040B, 9040C, SM2120B, 2310B, 2320B, 2340B, 2540B, 2540D, 4500H+B, 4500CL-E, 4500CN-E, 4500NH₃-H, 4500NO₃-F, 4500NO₂-B, 4500P-E, 4500-S2-D, 4500SO₃-B, 5210B, 5220D, 2510B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D, 3060A. *Organic Parameters:* SW-846 3510C, 3630C, 5030B, 8260C, 8270D, 8330, EPA 624, 625, 608, SW-846 8082A, 8081B, 8015C, 8151A, 8330, 8270D-SIM.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6010C, 6020A, 7196A, 7471B, 1010, 1010A, 1030, 9010C, 9012B, 9014, 9030B, 9040C, 9045C, 9045D, 9050, 9065, 9251, 1311, 1312, 3005A, 3050B, 3060A. *Organic Parameters:* SW-846 3540C, 3546, 3050B, 3580A, 3620D, 3630C, 5030B, 5035, 8260C, 8270D, 8270D-SIM, 8330, 8151A, 8015B, 8015C, 8082A, 8081B.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2064. NELAP Accredited.

Drinking Water (Organic Parameters: **EPA 524.2:** Di-isopropyl ether (DIPE), Ethyl-t-butyl ether (ETBE), Tert-amyl methyl ether (TAME)).

Non-Potable Water (Organic Parameters: **EPA 8260C:** 1,3,5-Trichlorobenzene. **EPA 8015C(M):** TPH.)

Solid & Chemical Materials (Organic Parameters: **EPA 8260C:** 1,3,5-Trichlorobenzene.)

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

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

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500CI-E, EPA 300.0, SM2120B, 2340B, SM4500F-BC, EPA 200.7, 200.8, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO₃-F, 4500NO₂-B, EPA 1664A, SM5310C, 4500-PE, EPA 420.1, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH₃-H, 4500-S D, 4500SO₄-E, EPA 350.1, 350.2, SW-846 1312, 7470A, 5540C, SM4500H-B, 4500SO₃-B, SM3500Cr-D, 4500CN-CE, EPA 245.1, SW-846 9040B, 9040C, 3005A, 3015, EPA 6010B, 6010C, 6020, 6020A, 7196A, 3060A, SW-846 9010C, 9030B. *Organic Parameters:* SW-846 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 5030C, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 1,4-Dioxane by NJ Modified 8270, 8015B, NJ EPH.)

Solid & Chemical Materials (Inorganic Parameters: SW-846, 6010B, 6010C, 6020, 6020A, 7196A, 3060A, 9030B, 1010, 1010A, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9010C, 9012B, 9014, 9038, 9040B, 9040C, 9045C, 9045D,

9050A, 9065, 9251. Organic Parameters: SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5030C, 5035L, 5035H, NJ EPH.)

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

Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.1, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500NO₃-F, 2540C, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, 5310C, EPA 410.4, SM5220D, 2310B, 2320B, EPA 200.7, 300.0, SM4500CL-E, 4500F-C, SM15 426C, EPA 350.1, SM4500NH₃-BH, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, SM4500-NO₃-F, 4500-NO₂-B, 4500P-E, 2340B, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010C, 6020A, EPA 7196A, SM3500Cr-D, EPA 245.1, 7470A, SM2120B, 4500CN-CE, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 8315A, 3005A, 9010C, 9030B. Organic Parameters: EPA 624, 8260C, 8270D, 8270D-SIM, 625, 608, 8081B, 8151A, 8330A, 8082A, EPA 3510C, 5030B, 5030C, 8015C, 8011.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, EPA 6010C, 6020A, 7196A, 7471B, 8315A, 9012B, 9014, 9065, 9050A, 9038, 9251, EPA 1311, 1312, 3005A, 3050B, 9010C, 9030B, 9040C, 9045D. Organic Parameters: EPA 8260C, 8270D, 8270D-SIM, 8015C, 8081B, 8151A, 8330A, 8082A, 3540C, 3546, 3580A, 5035A-H, 5035A-L.)

North Carolina Department of the Environment and Natural Resources Certificate/Lab ID : 666. (Inorganic Parameters: SM2310B, 2320B, 4500CI-E, 4500Cn-E, 9012B, 9014, Lachat 10-204-00-1-X, 1010A, 1030, 4500NO₃-F, 353.2, 4500P-E, 4500SO₄-E, 300.0, 4500S-D, 5310B, 5310C, 6010C, 6020A, 200.7, 200.8, 3500Cr-B, 7196A, 245.1, 7470A, 7471B, 1311, 1312. Organic Parameters: 608, 8081B, 8082A, 624, 8260B, 625, 8270D, 8151A, 8015C, 504.1, MA-EPH, MA-VPH.)

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

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. NELAP Accredited.

Drinking Water (Inorganic Parameters: 200.7, 200.8, 300.0, 332.0, 2120B, 2320B, 2510B, 2540C, 4500-CN-CE, 4500F-C, 4500H+-B, 4500NO₃-F, 5310C. Organic Parameters: EPA 524.2, 504.1)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1312, 3005A, 3015, 3060A, 200.7, 200.8, 410.4, 1664A, SM2540D, 5210B, 5220D, 4500-P, BE, 245.1, 300.0, 350.1, 350.2, 351.1, 353.2, 420.1, 6010C, 6020A, 7196A, 7470A, 9030B, 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 3500Cr-D, 426C, 4500CN-CE, 4500CI-E, 4500F-B, 4500F-C, 4500H+-B, 4500NH₃-H, 4500NO₂-B, 4500NO₃-F, 4500S-D, 4500SO₃-B, 5310BCD, 5540C, 9010C, 9040C. Organic Parameters: EPA 3510C, 3630C, 5030B, 625, 624, 608, 8081B, 8082A, 8151A, 8260C, 8270D, 8270D-SIM, 8330, 8015C, NJ-EPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 350.1, 1010, 1030, 1311, 1312, 3005A, 3050B, 3060A, 6010C, 6020A, 7196A, 7471B, 9010C, 9012B, 9014, 9040B, 9045D, 9050A, 9065, SM 4500NH₃-BH, 9030B, 9038, 9251. Organic Parameters: 3540C, 3546, 3580A, 3620C, 3630C, 5035, 8015C, 8081B, 8082A, 8151A, 8260C, 8270D, 8270D-SIM, 8330, NJ-EPH.)

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

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

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

Texas Commission on Environmental Quality Certificate/Lab ID: T104704476. NELAP Accredited.

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH₃-H, 4500NO₂B, 4500P-E, 4500 S²⁻D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

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

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

Drinking Water (Inorganic Parameters: EPA 200.7, 200.8, 300.0, 2510B, 2120B, 2540C, 4500CN-CE, 245.1, 2320B, 4500F-C, 4500NO₃-F, 4500H+B, 5310C. Organic Parameters: EPA 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 350.1, 351.1, 351.2, 3005A, 3015, 1312, 6010B, 6010C, 3060A, 353.2, 420.1, 2340B, 6020, 6020A, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X, 7196A, 7470A, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 3500Cr-D, 426C, 4500CI-E, 4500F-B, 4500F-C,

4500NH₃-H, 4500NO₂-B, 4500NO₃-F, 4500 SO₃-B, 4500H-B, 4500PE, 510AC, 5210B, 5310B 5310C, 5540C, 9010Cm 9030B, 9040C. Organic Parameters: EPA 3510C, 3630C, 5030B, 8260B, 608, 624, 625, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330,)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, 3060A, 3050B, 1311, 1312, 6010B, 6010C, 6020, , 7196A, 7471A, 7471B, 6020A, 9010C, 9012B, 9030B, 9014, 9038, 9040C, 9045D, 9251, 9050A, 9065. Organic Parameters: EPA 5030B, 5035, 3540C, 3546, 3550B, 3580A, 3620C, 3630C, 6020A, 8260B, 8260C, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330.)

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

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

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010C, 6020A, 245.1, 7470A, 9040B, 9010B, 180.1, 300.0, 332.0, 6860, 351.1, 353.2, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500Norg-C, 4500NO₃-F, 5310C, 2130B, 2320B, 2340B, 2540C, 5540C, 3005A, 3015, 9056, 7196A, 3500-Cr-D. Organic Parameters: EPA 8015C, 8151A, 8260C, 8270D, 8270D-SIM, 8330A, 8082A, 8081B, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010C, 6020A, 7471A, 6860, 1311, 1312, 3050B, 7196A, 9040B, 9045C, 9010C, 9012B, 9251, SM3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8015C, 8151A, 8260C, 8270D, 8270D-SIM, 8330A/B-prep, 8082A, 8081B, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)

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

EPA 524.2: Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether. **EPA 8260B**: 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8260 Non-potable water matrix**: Iodomethane (methyl iodide), Methyl methacrylate. **EPA 8260 Soil matrix**: Tert-amyl methyl ether (TAME), Diisopropyl ether (DIPE), Azobenzene. **EPA 8330A**: PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C**: Methyl naphthalene, Dimethyl naphthalene, Total Methyl naphthalenes, Total Dimethyl naphthalenes, 1,4-Diphenylhydrazine. **EPA 625**: 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, TKN in a soil matrix, NO₂ in a soil matrix, NO₃ in a soil matrix. **EPA 9071**: Total Petroleum Hydrocarbons, Oil & Grease. **EPA 9060** in a soil matrix.



APPENDIX D

AREAS OF CRITICAL CONCERN, ENDANGERED AND THREATENED SPECIES

Fan Pier Parcels H and I is located south of Boston's Inner Harbor within the South Boston Seaport District. Based on a review of Massachusetts Geographic Information Systems DEP Priority Resources' Map, there are no drinking water supplies, no Areas of Critical Environmental Concern, no Sole Source Aquifers, no fish habitats, and no habitats of Species of Special Concern or Threatened or Endangered Species at or within 500-feet of the subject site. No Protected Open Space is indicated within 500-feet of the subject property. A 100-year flood zone is indicated along part of the seawall to the north of the property.

There are no surface water bodies located within the site boundaries. However, Boston's Inner Harbor is located immediately to the north of the subject property.

A review of the federal listing of threatened and endangered species published by the U.S. Fish and Wildlife Service identified no threatened and/or endangered species or critical habitats at or in the vicinity of the discharge location and/or discharge outfall. In addition, a review of the Massachusetts Division of Fisheries and Wildlife on-line database identified no threatened or endangered species at the point of discharge and/or the discharge outfall.

Based upon the above, the site is considered criterion A pursuant to Appendix VII of the RGP.

MassDEP - Bureau of Waste Site Cleanup

MCP Numerical Ranking System Map: 500 feet & 0.5 Mile Radii

Site Information:

FAN PIER PARCELS H AND I
110 NORTHERN AVENUE BOSTON, MA
3-000031818

NAD83 UTM Meters:

4690930mN, 331673mE (Zone: 19)
December 30, 2013

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	PWS Protection Areas: Zone II, IWPA, Zone A	
Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct	Hydrography: Open Water, PWS Reservoir, Tidal Flat	
Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam	Wetlands: Freshwater, Saltwater, Cranberry Bog	
Aquifers: Medium Yield, High Yield, EPA Sole Source	FEMA 100yr Floodplain; Protected Open Space; ACEC	
Not Potential Drinking Water Source Area: Medium, High (Yield)	Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential	
	Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.	

MASSACHUSETTS AREAS OF CRITICAL ENVIRONMENTAL CONCERN

June 2009

Total Approximate Acreage: 268,000 acres

Approximate acreage and designation date follow ACEC names below.

Bourne Back River

(1,850 acres, 1989) Bourne

Canoe River Aquifer and Associated Areas (17,200 acres, 1991) Easton, Foxborough, Mansfield, Norton, Sharon, and Taunton

Cedar Swamp

(1,650 acres, 1975) Hopkinton and Westborough

Central Nashua River Valley

(12,900 acres, 1996) Bolton, Harvard, Lancaster, and Leominster

Cranberry Brook Watershed

(1,050 acres, 1983) Braintree and Holbrook

Ellisville Harbor

(600 acres, 1980) Plymouth

Fowl Meadow and Ponkapoag Bog

(8,350 acres, 1992) Boston, Canton, Dedham, Milton, Norwood, Randolph, Sharon, and Westwood

Golden Hills

(500 acres, 1987) Melrose, Saugus, and Wakefield

Great Marsh (originally designated as Parker River/Essex Bay)

(25,500 acres, 1979) Essex, Gloucester, Ipswich, Newbury, and Rowley

Herring River Watershed

(4,450 acres, 1991) Bourne and Plymouth

Hinsdale Flats Watershed

(14,500 acres, 1992) Dalton, Hinsdale, Peru, and Washington

Hockomock Swamp

(16,950 acres, 1990) Bridgewater, Easton, Norton, Raynham, Taunton, and West Bridgewater

Inner Cape Cod Bay

(2,600 acres, 1985) Brewster, Eastham, and Orleans

Kampoosa Bog Drainage Basin

(1,350 acres, 1995) Lee and Stockbridge

Karner Brook Watershed

(7,000 acres, 1992) Egremont and Mount Washington

Miscoe, Warren, and Whitehall Watersheds

(8,700 acres, 2000) Grafton, Hopkinton, and Upton

Neponset River Estuary

(1,300 acres, 1995) Boston, Milton, and Quincy

Petapawag

(25,680 acres, 2002) Ayer, Dunstable, Groton, Pepperell, and Tyngsborough

Pleasant Bay

(9,240 acres, 1987) Brewster, Chatham, Harwich, and Orleans

Pocasset River

(160 acres, 1980) Bourne

Rumney Marshes

(2,800 acres, 1988) Boston, Lynn, Revere, Saugus, and Winthrop

Sandy Neck Barrier Beach System

(9,130 acres, 1978) Barnstable and Sandwich

Schenob Brook Drainage Basin

(13,750 acres, 1990) Mount Washington and Sheffield

Squannassit

(37,420 acres, 2002) Ashby, Ayer, Groton, Harvard, Lancaster, Lunenburg, Pepperell, Shirley, and Townsend

Three Mile River Watershed

(14,280 acres, 2008) Dighton, Norton, Taunton

Upper Housatonic River

(12,280 acres, 2009) Lee, Lenox, Pittsfield, Washington

Waquoit Bay

(2,580 acres, 1979) Falmouth and Mashpee

Weir River

(950 acres, 1986) Cohasset, Hingham, and Hull

Wellfleet Harbor

(12,480 acres, 1989) Eastham, Truro, and Wellfleet

Weymouth Back River

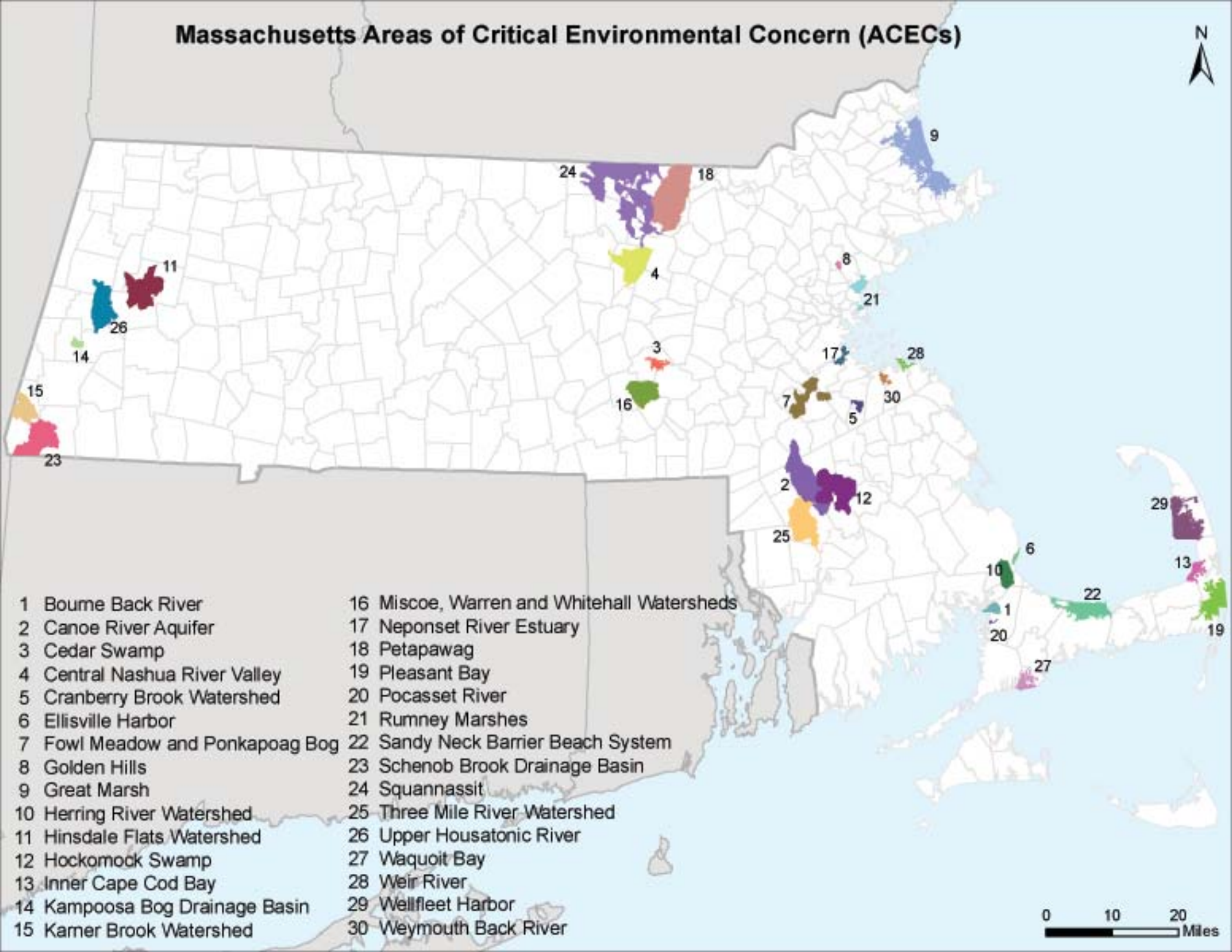
(800 acres, 1982) Hingham and Weymouth

Towns with ACECs within their Boundaries

June 2009

TOWN	ACEC	TOWN	ACEC
Ashby	Squannassit	Mt. Washington	Karner Brook Watershed
Ayer	Petapawag		Schenob Brook
	Squannassit	Newbury	Great Marsh
Barnstable	Sandy Neck Barrier Beach System	Norton	Hockomock Swamp
Bolton	Central Nashua River Valley		Canoe River Aquifer
Boston	Rumney Marshes		Three Mile River Watershed
	Fowl Meadow and Ponkapoag Bog	Norwood	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary	Orleans	Inner Cape Cod Bay
Bourne	Pocasset River		Pleasant Bay
	Bourne Back River	Pepperell	Petapawag
	Herring River Watershed		Squannassit
Braintree	Cranberry Brook Watershed	Peru	Hinsdale Flats Watershed
Brewster	Pleasant Bay	Pittsfield	Upper Housatonic River
	Inner Cape Cod Bay	Plymouth	Herring River Watershed
Bridgewater	Hockomock Swamp		Ellisville Harbor
Canton	Fowl Meadow and Ponkapoag Bog	Quincy	Neponset River Estuary
Chatham	Pleasant Bay	Randolph	Fowl Meadow and Ponkapoag Bog
Cohasset	Weir River	Raynham	Hockomock Swamp
Dalton	Hinsdale Flats Watershed	Revere	Rumney Marshes
Dedham	Fowl Meadow and Ponkapoag Bog	Rowley	Great Marsh
Dighton	Three Mile River Watershed	Sandwich	Sandy Neck Barrier Beach System
Dunstable	Petapawag	Saugus	Rumney Marshes
Eastham	Inner Cape Cod Bay		Golden Hills
	Wellfleet Harbor	Sharon	Canoe River Aquifer
Easton	Canoe River Aquifer		Fowl Meadow and Ponkapoag Bog
	Hockomock Swamp	Sheffield	Schenob Brook
Egremont	Karner Brook Watershed	Shirley	Squannassit
Essex	Great Marsh	Stockbridge	Kampoosa Bog Drainage Basin
Falmouth	Waquoit Bay	Taunton	Hockomock Swamp
Foxborough	Canoe River Aquifer		Canoe River Aquifer
Gloucester	Great Marsh		Three Mile River Watershed
Grafton	Miscoe-Warren-Whitehall Watersheds	Truro	Wellfleet Harbor
		Townsend	Squannassit
Groton	Petapawag	Tyngsborough	Petapawag
	Squannassit	Upton	Miscoe-Warren-Whitehall Watersheds
Harvard	Central Nashua River Valley		
	Squannassit	Wakefield	Golden Hills
Harwich	Pleasant Bay	Washington	Hinsdale Flats Watershed
Hingham	Weir River		Upper Housatonic River
	Weymouth Back River	Wellfleet	Wellfleet Harbor
Hinsdale	Hinsdale Flats Watershed	W Bridgewater	Hockomock Swamp
Holbrook	Cranberry Brook Watershed	Westborough	Cedar Swamp
Hopkinton	Miscoe-Warren-Whitehall Watersheds	Westwood	Fowl Meadow and Ponkapoag Bog
		Weymouth	Weymouth Back River
	Cedar Swamp	Winthrop	Rumney Marshes
Hull	Weir River		
Ipswich	Great Marsh		
Lancaster	Central Nashua River Valley		
	Squannassit		
Lee	Kampoosa Bog Drainage Basin		
	Upper Housatonic River		
Lenox	Upper Housatonic River		
Leominster	Central Nashua River Valley		
Lunenburg	Squannassit		
Lynn	Rumney Marshes		
Mansfield	Canoe River Aquifer		
Mashpee	Waquoit Bay		
Melrose	Golden Hills		
Milton	Fowl Meadow and Ponkapoag Bog		
	Neponset River Estuary		

Massachusetts Areas of Critical Environmental Concern (ACECs)



- | | |
|---------------------------------|--|
| 1 Bourn Back River | 16 Miscoe, Warren and Whitehall Watersheds |
| 2 Canoe River Aquifer | 17 Neponset River Estuary |
| 3 Cedar Swamp | 18 Petapawag |
| 4 Central Nashua River Valley | 19 Pleasant Bay |
| 5 Cranberry Brook Watershed | 20 Pocasset River |
| 6 Ellisville Harbor | 21 Rumney Marshes |
| 7 Fowl Meadow and Ponkapoag Bog | 22 Sandy Neck Barrier Beach System |
| 8 Golden Hills | 23 Schenob Brook Drainage Basin |
| 9 Great Marsh | 24 Squannassit |
| 10 Herring River Watershed | 25 Three Mile River Watershed |
| 11 Hinsdale Flats Watershed | 26 Upper Housatonic River |
| 12 Hockomock Swamp | 27 Waquoit Bay |
| 13 Inner Cape Cod Bay | 28 Weir River |
| 14 Kampoosa Bog Drainage Basin | 29 Wellfleet Harbor |
| 15 Kame Brook Watershed | 30 Weymouth Back River |

0 10 20 Miles

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Barnstable	Piping Plover	Threatened	Coastal Beaches	All Towns
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Chatham
	Sandplain gerardia	Endangered	Open areas with sandy soils.	Sandwich and Falmouth.
	Northern Red-bellied cooter	Endangered	Inland Ponds and Rivers	Bourne (north of the Cape Cod Canal)
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
Bristol	Piping Plover	Threatened	Coastal Beaches	Fairhaven, Dartmouth, Westport
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Fairhaven, New Bedford, Dartmouth, Westport
	Northern Red-bellied cooter	Endangered	Inland Ponds and Rivers	Raynham and Taunton
Dukes	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Piping Plover	Threatened	Coastal Beaches	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Aquinnah and Chilmark
	Sandplain gerardia	Endangered	Open areas with sandy soils.	West Tisbury
Essex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Gloucester, Essex and Manchester
	Piping Plover	Threatened	Coastal Beaches	Glocester, Essex, Ipswich, Rowley, Revere, Newbury, Newburyport and Salisbury
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague
	Dwarf wedgemussel	Endangered	Mill River	Whately
Hampshire	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Hadley
	Puritan tiger beetle	Threatened	Sandy beaches along the Connecticut River	Northampton and Hadley
	Dwarf wedgemussel	Endangered	Rivers and Streams.	Hadley, Hatfield, Amherst and Northampton
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
Nantucket	Piping Plover	Threatened	Coastal Beaches	Nantucket
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Nantucket
	American burying beetle	Endangered	Upland grassy meadows	Nantucket
Plymouth	Piping Plover	Threatened	Coastal Beaches	Scituate, Marshfield, Duxbury, Plymouth, Wareham and Mattapoisett
	Northern Red-bellied cooter	Endangered	Inland Ponds and Rivers	Kingston, Middleborough, Carver, Plymouth, Bourne, and Wareham
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Plymouth, Marion, Wareham, and Mattapoisett.
Suffolk	Piping Plover	Threatened	Coastal Beaches	Winthrop
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster

- Eastern cougar and gray wolf are considered extirpated in Massachusetts.
- Endangered gray wolves are not known to be present in Massachusetts, but dispersing individuals from source populations in Canada may occur statewide.
- Critical habitat for the Northern Red-bellied cooter is present in Plymouth County.

7/31/2008



APPENDIX E

NATIONAL REGISTER OF HISTORIC PLACES

The National Register of Historic Places on-line database was reviewed for listings located within the immediate vicinity of the subject site in Boston, Massachusetts. A review of the most recent National Register of Historical Places for Suffolk County, Massachusetts did not identify records or addresses of Historic Places that exist in the immediate vicinity of the subject site and/or outfall location. The nearest National Historic Place to the subject site is the Congress Street Fire Station which is located approximately 0.25 miles to the southwest of the subject site. It is not anticipated that dewatering activities at the subject site will affect the Congress Street Fire Station National Historic Place.

Based upon the above, the site is considered criterion 2 pursuant to Appendix IV of the RGP.



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 planned to occur at Fan Pier Parcel H and I located in 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

Construction dewatering effluent is anticipated to be pumped from localized sumps and trenches within the excavation and directly into a settling tank. The effluent will then flow through any necessary treatment systems and discharge through hoses directly into Boston Harbor located adjacent to the north of the subject site. Dewatering effluent treatment may consist of bag filters, ion exchange, and/or precipitation, as required.

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. This includes analytical testing required within days 1 and 3 of initial discharge and the monthly testing to be conducted through the end of the scheduled discharge.

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

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 for the term of this permit. Scheduled regular maintenance of the treatment system will be conducted to verify proper operation. 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 or 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 covered within the overall site security plan.

No adverse affects on designated uses of surrounding surface water bodies is anticipated. The nearest surface water body is Boston Harbor which is located to the north of the subject site. Dewatering effluent will be pumped to a settling tank. Water within the settling tank will pumped through bag filters prior to discharge to the harbor.

Management of Treatment System Materials

Dewatering effluent will be pumped directly to the treatment system from the excavation with the use of hoses and sumps to minimize handling. The Contractor will establish staging areas for equipment or materials storage that may be possible sources of pollution that will be located 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 filters will be disposed of as necessary.