



April 19, 2018

US Environmental Protection Agency
Office of Ecosystem Protection
EPA/OEP RGP Applications Coordinator
5 Post Office Square – Suite 100 (OEP06-01)
Boston, Massachusetts 02109-3912
Attn: Ms. Shelley Puleo

RE: Remediation General Permit (RGP) Notice of Intent (NOI)
Temporary Construction Dewatering
One Congress Tower – WPB-2
1 Congress Street
Boston, MA 02114
VERTEX Project No. 27026

Dear Ms. Puleo:

On behalf of our client, BC ONE CONGRESS TOWER JV, LLC (the “Owner”), and in accordance with the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit for Dewatering Activities – Massachusetts General Permit, MAG910000, included herewith are the Notice of Intent (NOI) and applicable documentation as required by the US Environmental Protection Agency (USEPA) and Massachusetts Department of Environmental protection (MassDEP) for construction site dewatering under the Remediation General Permit.

Construction dewatering is planned in support of redevelopment of the property located at 1 Congress Street in Boston, Massachusetts (the “site”), as shown on the attached United States Geological Survey – Topographic Map – Boston South. Redevelopment activities which will require dewatering include excavation for the construction of a new high-rise commercial building, and the installation of subsurface utilities. We anticipate dewatering will be conducted continuously during the excavation activities for proposed redevelopment.

SITE DESCRIPTION

The site is located in an urban area of Boston, Massachusetts. According to the Boston South 2015 USGS Topographic Map, the site is located in a densely developed urban area in downtown Boston, Massachusetts. Per the City of Boston Assessor’s information, the site is currently occupied by an 11 story, 1,355,000 square-foot building. Congress Street bisects the building into

two sections, which are connected by floors 10 and 11. The first floor of the building consists of retail space, building maintenance, storage areas, an open-air parking garage, and a lobby that provides access to the commercial office portions of the building. The northeastern portion of the site contains a Massachusetts Bay Transportation Authority (MBTA) bus station and access to the Haymarket MBTA subway station, which partially underlies the site. Floors two through nine of the building are occupied by an open-air parking garage with vehicular access from New Chardon Street (northwest of the building) and Sudbury Street (northeast of the building) and egress along Bowker Street (southwest of the building). Floors 10 and 11 of the building contain commercial office space.

The site is bounded to the northwest by New Chardon Street, beyond which are multiple commercial, government, and residential buildings. The site is bounded to the northeast by the Rose Kennedy Greenway, beyond which is US Interstate Highway 93. The site is bounded to the southeast by Sudbury Street, beyond which are a mixed-use parking garage and commercial building, and the John F. Kennedy Federal building. The site is bordered to the southwest by Bowker Street and the Boston Police Department.

According to the MassDEP Phase I Site Assessment Map (Figure 2), the site is not located in a medium or high yield aquifer, Zone II, Interim Wellhead Protection Areas (IWPA) Zone A, Public Water Supply (PWS) Protection Area, or within 500 feet of the site, respectively. Public or private drinking water wells were not identified at or within 500 feet of the site. Estimated rare wetland, vernal pools, freshwater/saltwater wetlands, protected open spaces, or Areas of Critical Environmental Concern (ACEC) were not identified at the site. A review of the City of Boston online mapping did not identify the site to be located in an area designated aquifer. The closest surface water body is Boston Harbor, located approximately 0.4 miles east of the site.

SITE OWNER & OPERATOR

The owner of the site subject to this NOI is:

BC ONE CONGRESS TOWER JV LLC
c/o The HYM Investment Group LLC
One Congress Street, 11th Floor
Boston, MA 02114

The Applicant & Operator for this NOI is:

Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA 01453
Attention: Paul Lockwood

SITE INVESTIGATION & ANALYTICAL TESTING

Subsurface investigations have been performed at the site by VERTEX and others in support of the planned redevelopment activities. Investigations have included the collection and analysis of soil and groundwater samples to determine disposal and reuse options for excavated material and potential treatment requirements for groundwater generated from construction dewatering operations.

Subsurface investigations performed to date indicate that the site is underlain by a layer of urban fill. The fill has been encountered at varying thicknesses ranging from 0 to 18 feet below surface grade. The fill contains varying amounts of debris, including brick, coal ash, wood, ash, glass, and concrete. Underlying the fill are native materials consisting of varying thickness of sand, silt and clay (locally known as the Boston Blue Clay) intermixed with horizons of fine sand and silt partings.

Soil samples were collected from the site and were analyzed for the presence of Volatile Organic Compounds (VOCs), polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), metals, as well as general chemistry parameters. No VOCs, TPH, or PCBs were identified above applicable MCP Reportable Concentrations (RCs) or the RCRA characteristic waste standards presented in 40 CFR 261. Select SVOC constituents were detected at levels above their respective RCs, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and phenanthrene. However, because urban fill has been documented on-site, and laboratory analysis has confirmed the presence of coal and ash within the fill, the constituents were determined to be exempt from reporting in accordance with the Massachusetts Contingency Plan regulations [310 CMR 40.0317(9)]. With regard to metals, total lead was detected at concentrations up to 2,910 milligrams per kilogram (mg/kg) over the RC of 200 milligrams per kilogram (mg/kg). Additional metals were not detected at concentrations above the RCs.

The detected presence of lead was reported to the Massachusetts Department of Environmental Protection (MassDEP) in November 2018, and Release Tracking Number (RTN) 3-35328 was subsequently assigned to the site. There are no other known releases in connection with the site.

Summary of Water Analytical Testing and Results

An existing RGP (MAG910755) was granted in November 2017 for a previous phase of the 1 Congress Street project identified as WPB-1. Because the discharge described in this NOI will be similar to WPB-1, the same sample data for MAG910755 will be used to support this NOI. The sample of water (NPDES-T2-100) was submitted for laboratory analysis of VOCs, SVOCs, total metals, PCBs, pesticides, 1,2-dibromomethane, and general chemistry parameters (please note that certain parameters (e.g., pH, temperature, etc.) were collected using field instrumentation at the time of sampling). None of the analyzed compounds exceed applicable MCP regulatory

criteria with the exception of TPH, which was detected at a concentration of 169 micrograms per liter ($\mu\text{g/L}$) which exceeded the applicable RCGW-2 RC of 5 $\mu\text{g/L}$.

To supplement the data set, on April 12, 2019 a grab groundwater sample was collected from a monitoring well VES-EN1.5(MW) located on site. The water sample was submitted to Contest Analytical of East Longmeadow, Massachusetts for laboratory analysis of select VOCs, SVOCs, PCBs, 1,2-dibromomethane, 1,4 dioxane, total metals, hexavalent chromium, total cyanide, total residual chlorine (TRC), total suspended solids (TSS), corrosivity, chloride, ammonia and other RGP required compounds. In addition, pH and temperature were measured in the field.

Two grab water samples were collected from the Charles River at the location of Outfall 049 (the proposed discharge point). Sample “BOS-049” was collected on September 15, 2017 and sample “BOS-049-19-04-12” was collected April 12, 2018. The water samples were submitted to Contest Analytical of East Longmeadow, Massachusetts for laboratory analysis of select VOCs, SVOCs, PCBs, 1,2-dibromomethane, total metals, hexavalent chromium, total cyanide, total residual chlorine (TRC), total suspended solids (TSS), corrosivity, hardness, ammonia and other RGP required compounds. In addition, pH and temperature were measured in the field.

Results of the water sampling and analyses are summarized in Table 1.

PROPOSED CONSTRUCTION AND MANAGEMENT OF DEWATERING EFFLUENT

Excavation will be performed throughout the majority of the WPB-2 portion of the greater Government Center Garage site as part of redevelopment. At this time, it is assumed that dewatering of the excavation will be conducted on a continuous basis over the course of approximately 12 months to facilitate construction as well as worker safety.

The site contractor will treat the groundwater prior to discharging the dewatering effluent to the existing storm drain system via catch basins located to the southwest of the site in Bowker Street, which drains to the Charles River. Refer to Figure 3 – Boston Water and Sewer Commission (BWSC) map for the location of the stormwater drain, which eventually discharges to the Charles River via outfall BOS-049. Site work and associated dewatering are anticipated to begin in April 2019 and are estimated to be completed before April 2020.

The site contractor will provide a treatment system as described in the Dewatering Plan as shown in Figure 4 and will operate and maintain dewatering and sedimentation control systems. The system will be designed to meet the permit requirements for suspended solids, pH, and other constituents (as required) in the effluent stream prior to discharge into the on-site storm drain. At this time, it is assumed that the treatment system will consist of construction dewatering pump(s) as well as recirculated municipal water used in the installation of building subsurface support systems. Water will be pumped from a municipal source to the Project Area. Water will be used as part of the installation of piles and subsequent grouting of those piles per the civil engineering specifications. Water used as part of the construction project will be recirculated on-

site and reused as necessary. Once complete, the resulting water will flow through a series of holding tanks, and through a series of filters (number will vary with the quantity of water being pumped) to remove suspended sediment.

Untreated water will be contained within holding tanks to provide adequate storage prior to discharge. The maximum combined dewatering-effluent treatment system design-flow capacity will not exceed 100 GPM. Influent and effluent samples will be collected from the system as required. If the samples indicate additional treatment may be necessary, a Notice of Change (NOC) will be submitted prior to discharge. If a high concentration of fine particulates is detected in the samples, then precipitation/coagulation /flocculation treatment measures may be applied.

The proposed water treatment systems will be equipped with required fixtures, freeze protection, floats, switches, flow totalizer, and alarms as necessary to continuously operate the dewatering system. Sampling ports for influent and effluent will be installed. A schematic diagram of the proposed water treatment system is provided in Figure 4 and the connection location, storm water lines, and discharge location are shown on Figure 3.

Once operations begin, a licensed wastewater treatment plant operator will conduct system monitoring as required. On behalf of the Owner, VERTEX will perform the required sampling and testing of the dewatering effluent and will report the results as required by the permit. Results will be provided to the site contractor, and the treatment system and/or dewatering procedures will be modified as necessary to comply with the Permit Discharge Criteria.

SUPPORTING DOCUMENTATION & PUBLIC CORRESPONDENCE

A copy of the NOI to conduct construction site dewatering is provided in Attachment A. The NOI indicates that the proposed discharge point (The Charles River) was calculated to have a 7-day consecutive low flow discharge (7Q10) of 18.87 million gallons per day (MGD). This was developed using United States Geological Survey (USGS) StreamStats application. Based upon the calculated 7Q10, a dilution factor of 134 has been calculated for the site's dewatering effluent.

Boston Water and Sewer Commission (BWSC) was also notified of the proposed dewatering operations. The Dewatering Permit Application form, included in Attachment B, was completed and submitted via email to BWSC.

The site is not known to be or located within the limits of a known Massachusetts Area of Critical Environmental Concern (ACEC), a historic place, or within a critical habitat for endangered species. Please refer to Attachments C, D, and E for supporting correspondence and research documentation which was used to determine the site's status. Copies of laboratory analytical results are provided in Attachment F.

BEST MANAGEMENT PRACTICES PLAN

Prior to the initiation of dewatering activities or discharge of dewatering effluent, a Best Management Practices Plan (BMPP) will be prepared and implemented. At this time, it is anticipated that the BMPP will be incorporated within the Site's existing Spill Prevention Control & Counter Measures (SPCC) Plan.

CLOSING

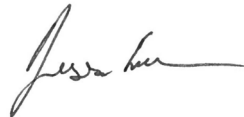
Thank you very much for your consideration of this NOI. Please feel free to contact us should you wish to discuss the information contained herein or if you need additional information.

Sincerely,

The Vertex Companies, Inc.,



Benjamin Sivonen, EIT
Project Manager



Jesse M. Freeman, PE
Senior Project Manager



Frank Calandra, PE, LSP
Division Manager – Remediation

Attachments:

Figures

- Figure 1: United States Geological Survey – Topographic Map – Boston South
Figure 2: MassDEP Phase I Site Assessment Map
Figure 3: BWSC Map
Figure 4: Proposed Treatment System

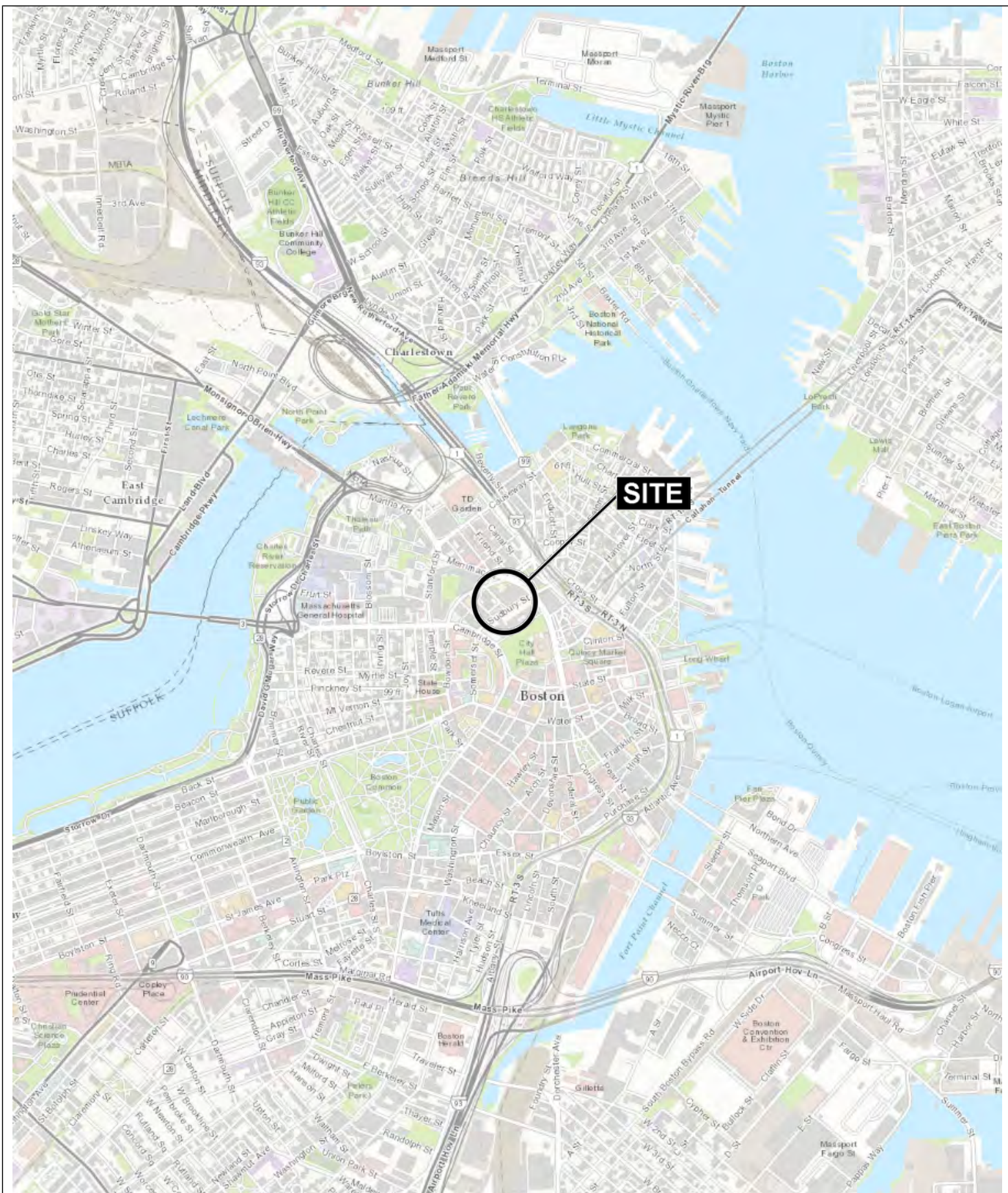
Tables

- Table 1: Summary of Analytical Results – Source & Receiving Water

Appendices

- Attachment A: Notice of Intent
Attachment B: BWSC Dewatering Permit Application
Attachment C: Areas of Critical Environmental Concern Documentation
Attachment D: National Register of Historic Places and Massachusetts Historical Commission Documentation
Attachment E: Endangered Species Act Documentation
Attachment F: Laboratory Analytical Reports

FIGURES

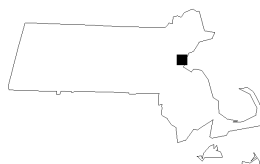


MAP SOURCE: ESRI

SITE COORDINATES: 42°21'44"N, 71°3'35"W

VERTEX

BULFINCH CROSSING WPB-2
ONE CONGRESS STREET
BOSTON, MASSACHUSETTS



PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
AUGUST 2016

FIGURE 1

MassDEP - Bureau of Waste Site Cleanup

Site Information:

1 CONGRESS STREET BOSTON, MA

NAD83 UTM Meters:

4692087mN, 330362mE (Zone: 19)

February 13, 2019

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

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/>

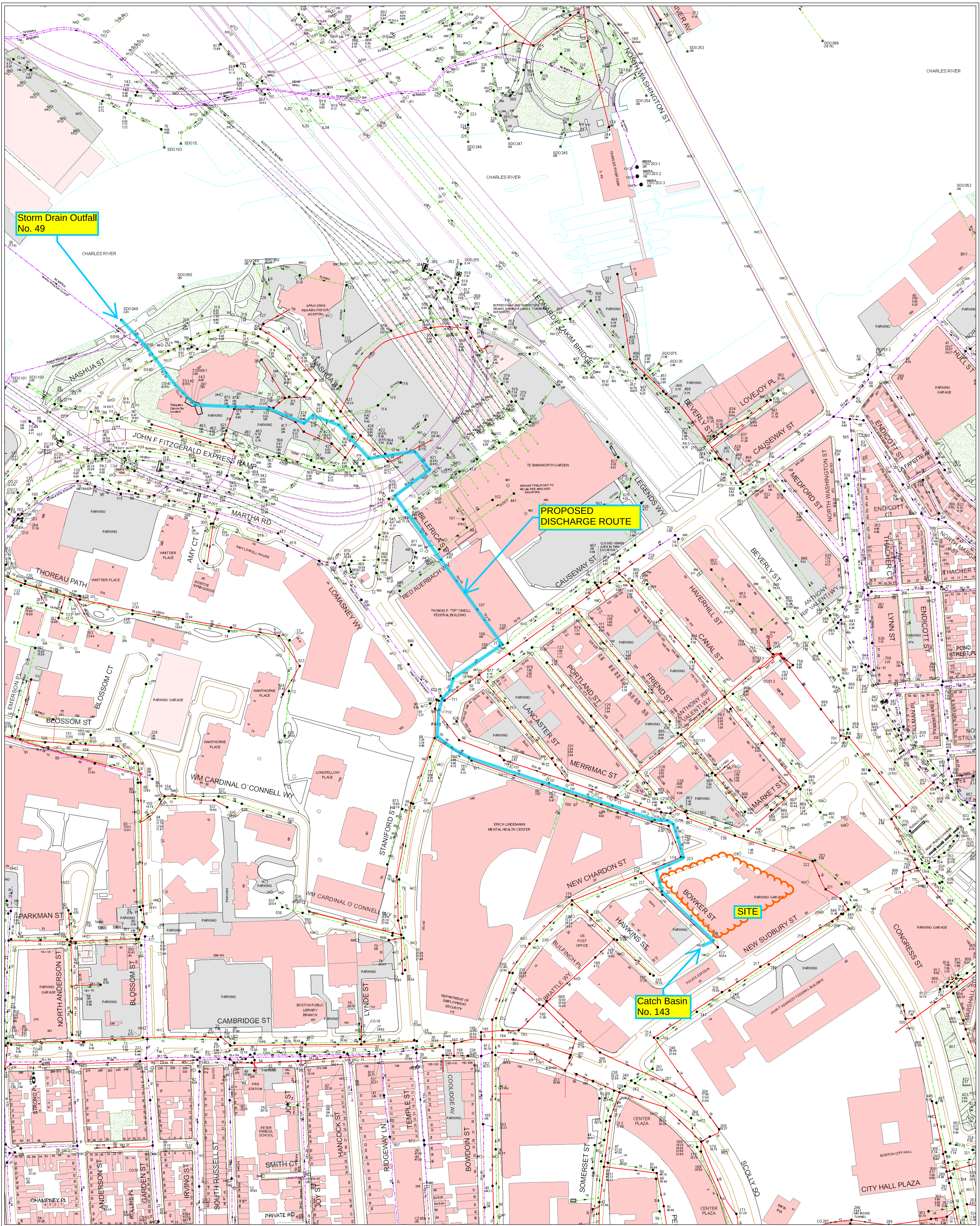


MassDEP

Commonwealth of Massachusetts
Department of Environmental Protection



FIGURE 2

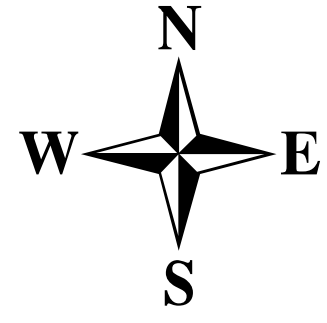


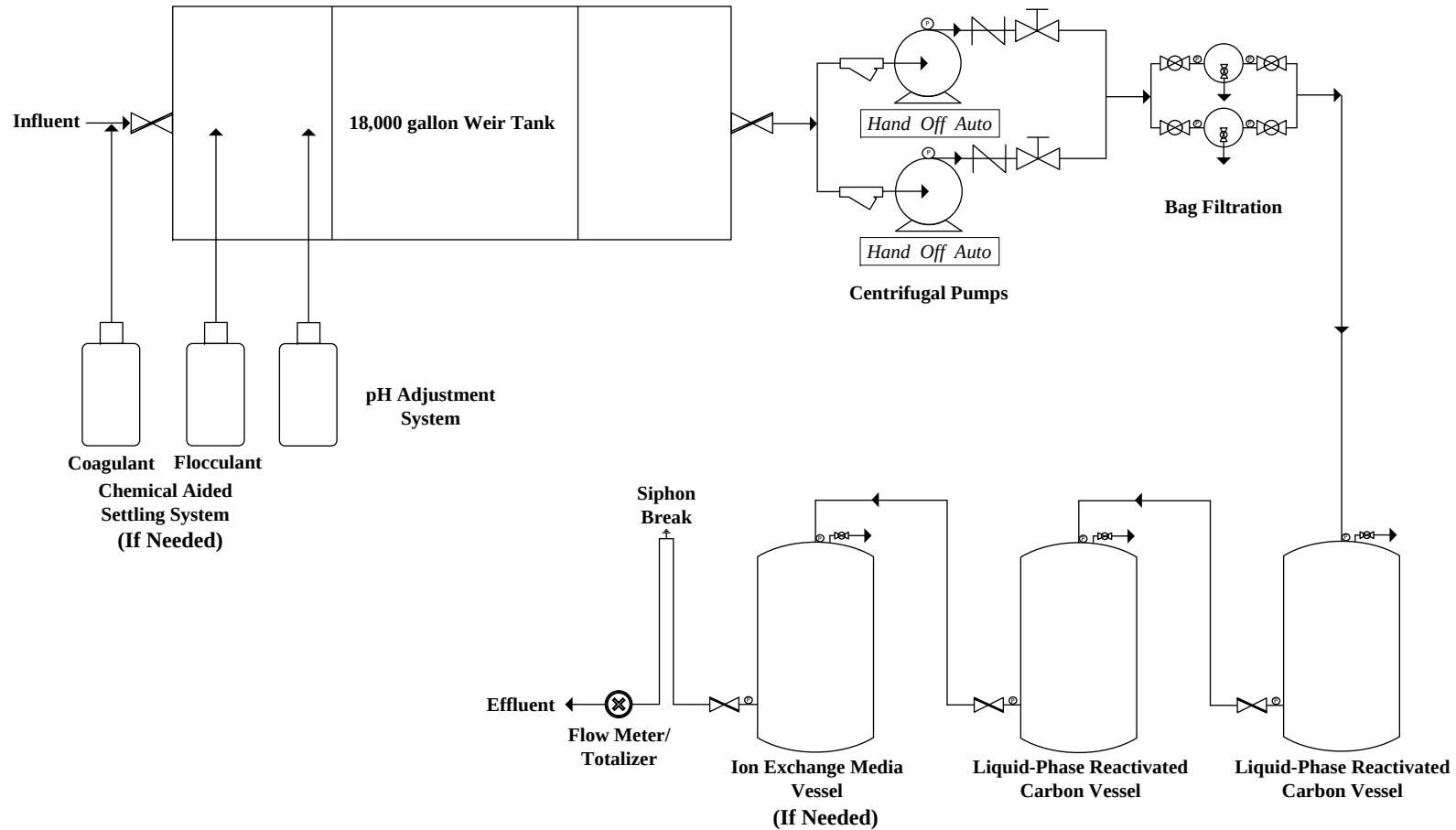
Storm Drain Outfall
No. 49

PROPOSED
DISCHARGE ROUTE

Catch Basin
No. 143

SITE





Notes:

- 1.) Figure is not to scale
- 2.) System rated for 125 GPM
- 3.) Sampling ports located on all treatment system components

Key:
Piping/Hose →



Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA 01453
Office: 774-450-7177

DESIGNED BY: LRT

DRAWN BY: B. Watkins

CHECKED BY:

DATE:

Water Treatment System Schematic

Bulfinch Crossing - WPB-2
One Congress Street
Boston, MA

VERTEX

Figure 4

TABLES

**TABLE 1
SUMMARY OF NPDES ANALYTICAL DATA
ONE CONGRESS STREET
BOSTON, MASSACHUSETTS
VERTEX PROJECT NO. 27026**

Sample Designation Sample Type Laboratory Sample ID Sample Date	CAS Number	MassDEP RCGW-2	MassDEP GW-3	USEPA RGP Effluent TBEL/WGBEL Limitations	Units	NPDES-T2-100 Influent 1606245-01 06/09/2016	Municipal FH Influent 1710704-01 06/09/2016	MWRA Influent	BOS-049 Receiving Water 1710704-02 9/15/2017	BOS-049-19-04-12 Receiving Water 19D0732-01 4/12/2019	WPB-2-19-04-12 Influent 19D0732-02 4/12/2019
1,1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane											
1,2-Dibromoethane	106-93-4	2	50,000	--	ug/L	ND(0.015)	---	---	ND(0.02)	---	---
Polychlorinated Biphenyls (PCB)											
Aroclor 1016	12674-11-2	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)	ND (0.200)	ND (0.200)
Aroclor 1221	11104-28-2	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)	ND (0.200)	ND (0.200)
Aroclor 1232	11141-16-5	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)	ND (0.200)	ND (0.200)
Aroclor 1242	53469-21-9	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)	ND (0.200)	ND (0.200)
Aroclor 1248	12672-29-6	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)	ND (0.200)	ND (0.200)
Aroclor 1254	11097-69-1	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)	ND (0.200)	ND (0.200)
Aroclor 1260	11096-82-5	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)	ND (0.200)	ND (0.200)
Aroclor 1262	37324-23-5	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)	ND (0.200)	ND (0.200)
Aroclor 1268	11100-14-4	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)	---	---
TOTAL PCBs	Multiple	5	10	0.000064	ug/L	ND(0.09)	---	---	ND(0.1)	ND (0.200)	ND (0.200)
Organochlorine Pesticides											
4,4'-DDD	72-54-8	50	50	--	ug/L	ND(0.05)	---	---	---	---	---
4,4'-DDE	72-55-9	400	400	--	ug/L	ND(0.05)	---	---	---	---	---
4,4'-DDT	50-29-3	1	1	--	ug/L	ND(0.05)	---	---	---	---	---
Aldrin	309-00-2	2	30	--	ug/L	ND(0.05)	---	---	---	---	---
alpha-BHC	319-84-6	5,000	--	--	ug/L	ND(0.05)	---	---	---	---	---
beta-BHC	319-85-7	1,000	--	--	ug/L	ND(0.05)	---	---	---	---	---
Chlordane (Total)	57-74-9	2	2	--	ug/L	ND(0.47)	---	---	---	---	---
delta-BHC	319-86-8	1,000	--	--	ug/L	ND(0.05)	---	---	---	---	---
Dieldrin	60-57-1	0.5	0.5	--	ug/L	ND(0.05)	---	---	---	---	---
Endosulfan I [2C]	959-98-8	2	2	--	ug/L	0.12	---	---	---	---	---
Endosulfan II	33213-65-9	2	2	--	ug/L	ND(0.05)	---	---	---	---	---
Endosulfan Sulfate	1031-07-8	--	--	--	ug/L	ND(0.05)	---	---	---	---	---
Endrin	72-20-8	5	5	--	ug/L	ND(0.05)	---	---	---	---	---
Endrin Aldehyde	7421-93-4	1,000	--	--	ug/L	ND(0.05)	---	---	---	---	---
gamma-BHC (Lindane)	58-89-9	4	4	--	ug/L	ND(0.05)	---	---	---	---	---
Heptachlor	76-44-8	1	1	--	ug/L	ND(0.05)	---	---	---	---	---
Heptachlor Epoxide	1024-57-3	2	2	--	ug/L	ND(0.05)	---	---	---	---	---
Methoxychlor	72-43-5	10	10	--	ug/L	ND(0.05)	---	---	---	---	---
Toxaphene	8001-35-2	1,000	--	--	ug/L	ND(1.21)	---	---	---	---	---
trans-Chlordane	5103-74-2	--	--	--	ug/L	---	---	---	---	---	---
Endrin ketone	53494-70-5	5	5	--	ug/L	---	---	---	---	---	---

TABLE 1
SUMMARY OF NPDES ANALYTICAL DATA
ONE CONGRESS STREET
BOSTON, MASSACHUSETTS
VERTEX PROJECT NO. 27026

Sample Designation	CAS Number	MassDEP RCGW-2	MassDEP GW-3	USEPA RGP Effluent TBEL/WGBEL Limitations	Units	NPDES-T2-100	Municipal FH	MWRA	BOS-049	BOS-049-19-04-12	WPB-2-19-04-12
Sample Type						Influent	Influent	Influent	Receiving Water	Receiving Water	Influent
Laboratory Sample ID						1606245-01	1710704-01		1710704-02	19D0732-01	19D0732-02
Sample Date						06/09/2016	06/09/2016		9/15/2017	4/12/2019	4/12/2019
Volatile Organic Compounds											
1,1,1,2-Tetrachloroethane	630-20-6	10	50,000	--	ug/L	---	---	---	---	---	---
1,1-Dichloropropene	563-58-6	---	---	---	ug/L	---	---	---	---	---	---
1,2,3-Trichlorobenzene	87-61-6	---	---	---	ug/L	---	---	---	---	---	---
1,2,3-Trichloropropane	96-18-4	10,000	--	---	ug/L	---	---	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	200	--	---	ug/L	---	---	---	---	---	---
1,2,4-Trimethylbenzene	95-63-6	100,000	--	---	ug/L	---	---	---	---	---	---
1,2-Dibromo-3-Chloropropane	96-12-8	1,000	--	---	ug/L	---	---	---	---	---	---
1,2-Dibromoethane	106-93-4	2	--	---	ug/L	---	---	---	ND(0.02)	---	---
1,2-Dichloroethene, Total	540-59-0	100	--	---	ug/L	---	---	---	---	---	---
1,3,5-Trimethylbenzene	108-67-8	1,000	--	---	ug/L	---	---	---	---	---	---
1,3-Dichloropropane	142-28-9	50,000	--	---	ug/L	---	---	---	---	---	---
1,3-Dichloropropene, Total	542-75-6	10	200	--	ug/L	---	---	---	---	---	---
1,4-Dioxane	123-91-1	6,000	50,000	200	ug/L	---	---	---	ND(50)	ND(50)	ND(50)
2,2-Dichloropropane	594-20-7	---	---	---	ug/L	---	---	---	---	---	---
2-Butanone	78-93-3	50,000	50,000	--	ug/L	---	---	---	---	---	---
2-Chlorotoluene		10,000	---	---	ug/L	---	---	---	---	---	---
2-Hexanone	591-78-6	10,000	--	---	ug/L	---	---	---	---	---	---
4-Chlorotoluene		10,000	---	---	ug/L	---	---	---	---	---	---
4-Isopropyltoluene		---	---	---	ug/L	---	---	---	---	---	---
4-Methyl-2-Pentanone	108-10-1	50,000	50,000	--	ug/L	---	---	---	---	---	---
Acetone	67-64-1	50,000	50,000	7,970	ug/L	---	---	---	ND(50)	ND (50.0)	ND (50.0)
Bromobenzene	108-86-1	10,000	--	---	ug/L	---	---	---	---	---	---
Bromochloromethane	74-97-5	---	---	---	ug/L	---	---	---	---	---	---
Carbon Disulfide	75-15-0	10,000	--	---	ug/L	---	---	---	---	---	---
Dibromomethane	74-95-3	50,000	--	---	ug/L	---	---	---	---	---	---
Dichlorodifluoromethane	75-71-8	100,000	--	---	ug/L	---	---	---	---	---	---
Diethyl Ether	60-29-7	10,000	--	---	ug/L	---	---	---	---	---	---
Di-isopropyl ether	108-20-3	10,000	--	---	ug/L	---	---	---	---	---	---
Ethyl tertiary-butyl ether	637-92-3	---	---	---	ug/L	---	---	---	---	---	---
Hexachlorobutadiene	87-68-3	50	3,000	--	ug/L	---	---	---	---	---	---
Isopropylbenzene	98-82-8	100,000	--	---	ug/L	---	---	---	---	---	---
Methyl tert-Butyl Ether	1634-04-4	5,000	50,000	70	ug/L	---	ND(2)	---	ND(2)	ND (2.00)	ND (2.00)
Naphthalene	91-20-3	700	20,000	--	ug/L	---	---	---	---	---	---
n-Butylbenzene	104-51-8	---	---	---	ug/L	---	---	---	---	---	---
n-Propylbenzene	103-65-1	10,000	--	---	ug/L	---	---	---	---	---	---
sec-Butylbenzene	135-98-8	---	---	---	ug/L	---	---	---	---	---	---
Styrene	100-42-5	100	6,000	--	ug/L	---	---	---	---	---	---
tert-Butylbenzene	98-06-6	10,000	--	---	ug/L	---	---	---	---	---	---
Tertiary-amyl methyl ether	994-05-8	---	---	90	ug/L	---	---	---	ND(0.5)	ND (2.00)	ND (2.00)
Tetrahydrofuran	109-99-9	50,000	--	---	ug/L	---	---	---	---	---	---
Xylene O	95-47-6	3,000	5,000	--	ug/L	---	---	---	ND(2)	ND(2)	ND(2)
Xylene P,M	179601-23-1	3,000	5,000	--	ug/L	---	---	---	ND(2)	ND(2)	ND(2)
Xylenes (Total)	Multiple	3,000	5,000	--	ug/L	---	---	---	ND(2)	ND(3)	ND(3)
1,1,1-Trichloroethane	71-55-6	4,000	20,000	200	ug/L	ND(1)	---	---	ND(2)	ND(2)	ND(2)
1,1,2,2-Tetrachloroethane	79-34-5	9	50,000	--	ug/L	ND(0.5)	---	---	---	---	---
1,1,2-Trichloroethane	79-00-5	900	50,000	5	ug/L	ND(1)	---	---	ND(2)	ND(2)	ND(2)
1,1-Dichloroethane	75-34-3	2,000	20,000	70	ug/L	ND(1)	---	---	ND(2)	ND(2)	ND(2)
1,1-Dichloroethene	75-35-4	80	30,000	3	ug/L	ND(1)	---	---	ND(2)	---	---
1,2-Dichlorobenzene	95-50-1	2,000	2,000	600	ug/L	ND(1)	---	---	ND(2)	ND(2)	ND(2)
1,2-Dichloroethane	107-06-2	5	20,000	5	ug/L	ND(1)	---	---	---	---	---
1,2-Dichloropropane	78-87-5	3	50,000	--	ug/L	ND(1)	---	---	---	---	---
1,3-Dichlorobenzene	541-73-1	6,000	50,000	320	ug/L	ND(1)	---	---	ND(2)	ND(2)	ND(2)
1,4-Dichlorobenzene	106-46-7	60	8,000	5	ug/L	ND(1)	---	---	ND(2)	ND(2)	ND(2)
2-Chloroethyl vinyl ether	110-75-8	50,000	--	---	ug/L	ND(10)	---	---	---	---	---
Acrolein - Screen	107-02-8	1,000	--	---	ug/L	ND(5)	---	---	---	---	---

TABLE 1
SUMMARY OF NPDES ANALYTICAL DATA
ONE CONGRESS STREET
BOSTON, MASSACHUSETTS
VERTEX PROJECT NO. 27026

Sample Designation	CAS Number	MassDEP RCGW-2	MassDEP GW-3	USEPA RGP Effluent TBEL/WGBEL Limitations	Units	NPDES-T2-100	Municipal FH	MWRA	BOS-049	BOS-049-19-04-12	WPB-2-19-04-12
Sample Type						Influent	Influent	Influent	Receiving Water	Receiving Water	Influent
Laboratory Sample ID						1606245-01	1710704-01		1710704-02	19D0732-01	19D0732-02
Sample Date						06/09/2016	06/09/2016		9/15/2017	4/12/2019	4/12/2019
Acrylonitrile - Screen	107-13-1	10,000	--	--	ug/L	ND(5)	---	---	---	---	---
Benzene	71-43-2	1,000	10,000	5	ug/L	ND(1)	---	---	ND(1)	ND(1)	ND(1)
Bromodichloromethane	75-27-4	6	50,000	--	ug/L	1.2	---	---	---	---	---
Bromoform	75-25-2	700	50,000	--	ug/L	ND(1)	---	---	---	---	---
Bromomethane	74-83-9	7	800	--	ug/L	ND(2)	---	---	---	---	---
Carbon Tetrachloride	56-23-5	2	5,000	4	ug/L	ND(1)	---	---	ND(2)	ND(2)	ND(2)
Chlorobenzene	108-90-7	200	1,000	--	ug/L	ND(1)	---	---	---	---	---
Chloroethane	75-00-3	10,000	--	--	ug/L	ND(2)	---	---	---	---	---
Chloroform	67-66-3	50	20,000	--	ug/L	3.9	---	---	---	---	---
Chloromethane	74-87-3	10,000	--	--	ug/L	ND(2)	---	---	---	---	---
cis-1,2-Dichloroethene	156-59-2	20	50,000	70	ug/L	ND(1)	---	---	ND(1)	ND(1)	ND(1)
cis-1,3-Dichloropropene	10061-01-5	5	--	--	ug/L	ND(0.4)	---	---	---	---	---
Dibromochloromethane	124-48-1	20	50,000	--	ug/L	ND(1)	---	---	---	---	---
Ethylbenzene	100-41-4	5,000	5,000	--	ug/L	ND(1)	---	---	ND(2)	ND(2)	ND(2)
Methylene Chloride	75-09-2	2,000	50,000	5	ug/L	ND(4)	---	---	ND(5)	ND(5)	ND(5)
Tetrachloroethene	127-18-4	50	30,000	5	ug/L	ND(1)	---	---	ND(2)	ND(2)	ND(2)
Toluene	108-88-3	40,000	40,000	--	ug/L	ND(1)	---	---	ND(1)	---	---
trans-1,2-Dichloroethene	156-60-5	80	50,000	--	ug/L	ND(1)	---	---	---	ND(2)	ND(2)
trans-1,3-Dichloropropene	10061-02-6	5	--	--	ug/L	ND(0.5)	---	---	---	---	---
Trichloroethene	79-01-6	5	5,000	5	ug/L	ND(1)	---	---	ND(2)	ND(2)	ND(2)
Trichlorofluoromethane	75-69-4	100,000	--	--	ug/L	ND(1)	---	---	---	---	---
Vinyl Chloride	75-01-4	2	50,000	2	ug/L	ND(1)	---	---	ND(2)	ND(2)	ND(2)

TABLE 1
SUMMARY OF NPDES ANALYTICAL DATA
ONE CONGRESS STREET
BOSTON, MASSACHUSETTS
VERTEX PROJECT NO. 27026

Sample Designation Sample Type Laboratory Sample ID Sample Date	CAS Number	MassDEP RCGW-2	MassDEP GW-3	USEPA RGP Effluent TBEL/WGBEL Limitations	Units	NPDES-T2-100 Influent 1606245-01 06/09/2016	Municipal FH Influent 1710704-01 06/09/2016	MWRA Influent	BOS-049 Receiving Water 1710704-02 9/15/2017	BOS-049-19-04-12 Receiving Water 19D0732-01 4/12/2019	WPB-2-19-04-12 Influent 19D0732-02 4/12/2019
Semi-Volatile Organic Compounds											
1,2,4-Trichlorobenzene	120-82-1	200	50,000	--	ug/L	ND(9.7)	---	---	ND(5)	---	---
1,2-Dichlorobenzene	95-50-1	2,000	2,000	--	ug/L	ND(9.7)	---	---	ND(5)	---	---
1,3-Dichlorobenzene	541-73-1	6,000	50,000	--	ug/L	ND(9.7)	---	---	ND(5)	---	---
1,4-Dichlorobenzene	106-46-7	60	8,000	--	ug/L	ND(9.7)	---	---	ND(5)	---	---
2,4,5-Trichlorophenol	95-95-4	3,000	3,000	--	ug/L	ND(9.7)	---	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	500	500	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
2,4-Dichlorophenol	120-83-2	2,000	2,000	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
2,4-Dimethylphenol	105-67-9	40,000	50,000	--	ug/L	ND(48.5)	---	---	ND(10)	---	---
2,4-Dinitrophenol	51-28-5	20,000	20,000	--	ug/L	ND(48.5)	---	---	ND(10)	---	---
2,4-Dinitrotoluene	121-14-2	20,000	50,000	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
2,6-Dinitrotoluene	606-20-2	10,000	--	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
2-Chloronaphthalene	91-58-7	100,000	--	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
2-Chlorophenol	95-57-8	7,000	7,000	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
2-Methylphenol	95-48-7	50,000	--	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
2-Nitrophenol	88-75-5	10,000	--	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
3,3'-Dichlorobenzidine	91-94-1	2,000	2,000	--	ug/L	ND(19.4)	---	---	ND(10)	---	---
3+4-Methylphenol	106-44-5	---	--	--	ug/L	ND(19.4)	---	---	ND(10)	---	---
4-Bromophenyl-phenylether	101-55-3	10,000	--	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
4-Chloroaniline	106-47-8	300	300	--	ug/L	ND(19.4)	---	---	---	---	---
4-Nitrophenol	100-02-7	10,000	--	--	ug/L	ND(48.5)	---	---	ND(10)	---	---
Acetophenone	98-86-2	100,000	--	--	ug/L	ND(9.7)	---	---	---	---	---
Aniline	62-53-3	100,000	--	--	ug/L	ND(9.7)	---	---	---	---	---
Azobenzene	103-33-3	5,000	--	--	ug/L	ND(19.4)	---	---	ND(10)	---	---
bis(2-Chloroethoxy)methane	111-91-1	50,000	--	--	ug/L	ND(9.7)	---	---	---	---	---
bis(2-Chloroethyl)ether	111-44-4	30	50,000	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
bis(2-chloroisopropyl)Ether	39638-32-9	100	50,000	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
bis(2-Ethylhexyl)phthalate	117-81-7	50,000	50,000	--	ug/L	230	---	---	ND(10)	ND (0.98)	ND (0.98)
Butylbenzylphthalate	85-68-7	10,000	--	--	ug/L	11.7	---	---	ND(10)	---	---
Dibenzofuran	132-64-9	10,000	--	--	ug/L	ND(9.7)	---	---	---	---	---
Diethylphthalate	84-66-2	9,000	9,000	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
Dimethylphthalate	131-11-3	50,000	50,000	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
Di-n-butylphthalate	84-74-2	5,000	--	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
Di-n-octylphthalate	117-84-0	100,000	--	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
Total phthalates	Multiple	--	--	190	ug/L	241.7	---	---	ND	---	---
Hexachlorobutadiene	87-68-3	50	3,000	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
Hexachloroethane	67-72-1	100	50,000	--	ug/L	ND(4.9)	---	---	ND(10)	---	---
Isophorone	78-59-1	10,000	--	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
Nitrobenzene	98-95-3	50,000	--	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
N-Nitrosodimethylamine	62-75-9	NA	NA	--	ug/L	ND(9.7)	---	---	ND(10)	---	---
Phenol	108-95-2	2,000	2,000	1,080	ug/L	14.5	---	---	ND(10)	ND (50)	ND (50)
2-Methylnaphthalene	91-57-6	2,000	20,000	--	ug/L	ND(3.88)	---	---	ND(10)	---	---
Acenaphthene	83-32-9	6,000	10,000	--	ug/L	ND(3.88)	---	---	ND(5)	ND (4.90)	ND (4.90)
Acenaphthylene	208-96-8	40	40	--	ug/L	ND(3.88)	---	---	ND(5)	ND (4.90)	ND (4.90)
Anthracene	120-12-7	30	30	--	ug/L	ND(3.88)	---	---	ND(5)	ND (4.90)	ND (4.90)
Benzo(a)anthracene	56-55-3	1,000	1,000	1	ug/L	ND(0.97)	---	---	ND(0.05)	ND (0.049)	ND (0.049)
Benzo(a)pyrene	50-32-8	500	500	1	ug/L	ND(0.97)	---	---	ND(0.1)	ND (0.098)	ND (0.098)
Benzo(b)fluoranthene	205-99-2	400	400	1	ug/L	ND(0.97)	---	---	ND(0.05)	ND (0.049)	ND (0.049)
Benzo(g,h,i)perylene	191-24-2	20	20	1	ug/L	ND(3.88)	---	---	ND(5)	ND (4.90)	ND (4.90)
Benzo(k)fluoranthene	207-08-9	100	100	1	ug/L	ND(0.97)	---	---	ND(0.2)	ND (0.20)	ND (0.20)
Chrysene	218-01-9	70	70	1	ug/L	ND(0.97)	---	---	ND(0.2)	ND (0.20)	ND (0.20)
Dibenzo(a,h)Anthracene	53-70-3	40	40	1	ug/L	ND(0.97)	---	---	ND(0.2)	ND (0.20)	ND (0.20)
Fluoranthene	206-44-0	200	200	--	ug/L	ND(3.88)	---	---	ND(5)	ND (4.90)	ND (4.90)
Fluorene	86-73-7	40	40	--	ug/L	ND(3.88)	---	---	ND(5)	ND (4.90)	ND (4.90)
Hexachlorobenzene	118-74-1	1	6,000	--	ug/L	ND(3.88)	---	---	ND(10)	---	---
Indeno(1,2,3-cd)Pyrene	193-39-5	100	100	--	ug/L	ND(0.97)	---	---	ND(0.2)	ND (0.20)	ND (0.20)

TABLE 1
SUMMARY OF NPDES ANALYTICAL DATA
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VERTEX PROJECT NO. 27026

Sample Designation	CAS Number	MassDEP RCGW-2	MassDEP GW-3	USEPA RGP Effluent TBEL/WGBEL Limitations	Units	NPDES-T2-100	Municipal FH	MWRA	BOS-049	BOS-049-19-04-12	WPB-2-19-04-12
Sample Type						Influent	Influent	Influent	Receiving Water	Receiving Water	Influent
Laboratory Sample ID						1606245-01	1710704-01		1710704-02	19D0732-01	19D0732-02
Sample Date						06/09/2016	06/09/2016		9/15/2017	4/12/2019	4/12/2019
Naphthalene	91-20-3	700	20,000	20	ug/L	ND(3.88)	---	---	ND(5)	ND (4.90)	ND (4.90)
Pentachlorophenol	87-86-5	200	200	1	ug/L	ND(17.5)	---	---	ND(1)	ND (0.98)	ND (0.98)
Phenanthrene	85-01-8	10,000	10,000	--	ug/L	ND(3.88)	---	---	ND(5)	ND (4.90)	ND (4.90)
Pyrene	129-00-0	20	20	--	ug/L	ND(3.88)	---	---	ND(5)	ND (0.98)	0.042
Group II PAHs	Multiple	---	---	100		ND	---	---	ND	ND	ND

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VERTEX PROJECT NO. 27026

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Sample Type						Influent	Influent	Influent	Receiving Water	Receiving Water	Influent
Laboratory Sample ID						1606245-01	1710704-01		1710704-02	19D0732-01	19D0732-02
Sample Date						06/09/2016	06/09/2016		9/15/2017	4/12/2019	4/12/2019
Classical Chemistry											
Chloride	--	--	--	--	ug/L	---	---	---	501,000	310,000	2,000,000
Hexavalent Chromium	18540-29-9	300	300	--	ug/L	ND(10)	---	---	ND(4)	ND(4)	ND(4)
Phenols	PHEN	--	--	--	ug/L	ND(100)	---	---	---	---	---
Total Cyanide (LL)	57-12-5	30	30	--	ug/L	ND(5)	---	---	ND(5)	ND(5)	ND(5)
Total Petroleum Hydrocarbon	Multiple	5	--	5	mg/L	169	---	---	---	---	---
Total Residual Chlorine	--	--	--	0.2	ug/L	280	2.1	---	28	34	ND(20)
Total Suspended Solids	TSS	--	--	30	mg/L	178	---	---	17	4.1	23
Corrosivity (pH)	--	--	--	--	--	---	9.37	---	7.66	7.57	6.83
Ammonia	--	--	--	Report	mg/L	---	---	0.42	0.063	0.098	6.87
Reactive Cyanide	--	--	--	--	--	---	---	---	---	---	---
Reactive Sulfide	--	--	--	--	--	---	---	---	---	---	---
Conductivity	--	--	--	--	--	---	---	---	---	---	---
Gasoline Range Organics	--	--	--	--	--	---	---	---	---	---	---
Diesel Range Organics	--	--	--	--	--	---	---	---	---	---	---
% Solids	--	--	--	--	--	---	---	---	---	---	---
Total Metals											
Antimony	7440-36-0	--	8000	206	ug/L	ND(10)	---	---	ND(1)	ND (1.0)	ND (1.0)
Arsenic	7440-38-2	--	900	104	ug/L	ND(10)	---	---	ND(1)	ND (1.0)	10
Cadmium	7440-43-9	--	4	10.2	ug/L	ND(1)	---	---	ND(0.2)	ND (0.20)	ND (1.0)
Chromium	7440-47-3	--	300	323	ug/L	ND(20)	---	---	ND(10)	ND (10)	ND (50)
Chromium III	16065-83-1	--	---	323	ug/L	ND(20)	---	---	ND(0.01)	0	0
Copper	7440-50-8	--	---	1.9*	ug/L	55.6	---	---	6.2	2.5	ND (5.0)
Iron	7439-89-6	--	---	5,000	ug/L	6,910	---	---	130	440	1,200
Lead	7439-92-1	--	10	0.31*	ug/L	10	---	---	1.5	1.5	ND (2.5)
Mercury	7439-97-6	--	20	0.739	ug/L	ND(0.2)	---	---	ND(0.1)	ND(0.1)	ND(0.1)
Nickel	7440-02-0	--	200	1,450	ug/L	ND(20)	---	---	ND(5)	ND (5.0)	ND (25)
Selenium	7782-49-2	--	100	235.8	ug/L	ND(10)	---	---	2.3	ND (5.0)	ND (25)
Silver	7440-22-4	--	7	21.4	ug/L	ND(0.5)	---	---	ND(0.2)	ND (0.20)	ND (0.20)
Zinc	7440-66-6	--	900	420	ug/L	ND(50)	---	---	ND(20)	ND (20)	ND (100)
Hardness	--	--	--	--	mg/L	ND(2)	16	---	---	---	---
Corrosivity											
pH	Field Measured	--	--	6.5 to 8.5	Standard Units	11.76	9.37†	---	7.66†	7.57†	6.83†

Notes

1. CAS Number = Chemical Abstract Service Number.
2. Regulatory criteria are established under the Massachusetts Contingency Plan (MCP).
3. MassDEP = Massachusetts Department of Environmental Protection.
4. - = No standard, or sample was not analyzed for specific analyte.
5. ND = Not Detected above the laboratory reporting limit shown in parenthesis.
6. ug/L = micrograms per liter.
7. mg/L = milligrams per liter.
8. mg CaCO₃/L = milligrams of calcium carbonate per liter.
9. SU = Standard Units.
10. † = Field Measured.
11. TBEL = Technology-Based Effluent Limitation
12. WQBEL - Water Quality-based Effluent Limitation
13. * = Calculated WQBEL value
14. MWRA water quality data obtained from <http://www.mwra.slate.ma.us/monthly/wqupdate/qual3wq.htm>. The result was calculated by averaging the available monthly data for 2017 (January - June 2017)

**ATTACHMENT A:
NOTICE OF INTENT**

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

A. General site information:

1. Name of site:	Site address: Street: <table border="1" data-bbox="888 475 1950 557"> <tr> <td data-bbox="888 475 1591 557">City:</td><td data-bbox="1591 475 1722 557">State:</td><td data-bbox="1722 475 1950 557">Zip:</td></tr> </table>	City:	State:	Zip:									
City:	State:	Zip:											
2. Site owner Owner is (check one): ☐ Federal ☐ State/Tribal ☐ Private ☐ Other; if so, specify:	<table border="1"> <tr> <td colspan="3" data-bbox="888 557 1950 630">Contact Person:</td></tr> <tr> <td data-bbox="888 630 1461 698">Telephone:</td><td colspan="2" data-bbox="1461 630 1950 698">Email:</td></tr> <tr> <td colspan="3" data-bbox="888 698 1950 800">Mailing address: Street:</td></tr> <tr> <td data-bbox="888 800 1591 878">City:</td><td data-bbox="1591 800 1722 878">State:</td><td data-bbox="1722 800 1950 878">Zip:</td></tr> </table>	Contact Person:			Telephone:	Email:		Mailing address: Street:			City:	State:	Zip:
Contact Person:													
Telephone:	Email:												
Mailing address: Street:													
City:	State:	Zip:											
3. Site operator, if different than owner	<table border="1"> <tr> <td colspan="3" data-bbox="888 878 1950 938">Contact Person:</td></tr> <tr> <td data-bbox="888 938 1461 998">Telephone:</td><td colspan="2" data-bbox="1461 938 1950 998">Email:</td></tr> <tr> <td colspan="3" data-bbox="888 998 1950 1101">Mailing address: Street:</td></tr> <tr> <td data-bbox="888 1101 1591 1154">City:</td><td data-bbox="1591 1101 1722 1154">State:</td><td data-bbox="1722 1101 1950 1154">Zip:</td></tr> </table>	Contact Person:			Telephone:	Email:		Mailing address: Street:			City:	State:	Zip:
Contact Person:													
Telephone:	Email:												
Mailing address: Street:													
City:	State:	Zip:											
4. NPDES permit number assigned by EPA: NPDES permit is (check all that apply): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	5. Other regulatory program(s) that apply to the site (check all that apply): <table border="0"> <tr> <td data-bbox="888 1214 1461 1282">☐ MA Chapter 21e; list RTN(s):</td><td data-bbox="1461 1214 1950 1282">☐ CERCLA</td></tr> <tr> <td data-bbox="888 1282 1461 1351">☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:</td><td data-bbox="1461 1282 1950 1351">☐ UIC Program</td></tr> <tr> <td></td><td data-bbox="1461 1351 1950 1398">☐ POTW Pretreatment</td></tr> <tr> <td></td><td data-bbox="1461 1398 1950 1458">☐ CWA Section 404</td></tr> </table>	☐ MA Chapter 21e; list RTN(s):	☐ CERCLA	☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:	☐ UIC Program		☐ POTW Pretreatment		☐ CWA Section 404				
☐ MA Chapter 21e; list RTN(s):	☐ CERCLA												
☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:	☐ UIC Program												
	☐ POTW Pretreatment												
	☐ CWA Section 404												

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Receiving water is (check any that apply): ☐ Outstanding Resource Water ☐ Ocean Sanctuary ☐ territorial sea ☐ Wild and Scenic River		
2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): ☐ Yes ☐ No Are sensitive receptors present near the site? (check one): ☐ Yes ☐ No If yes, specify:		
3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP.		
4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.		
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.		
6. Has the operator received confirmation from the appropriate State for the 7Q10 and dilution factor indicated? (check one): ☐ Yes ☐ No If yes, indicate date confirmation received:		
7. Has the operator attached a summary of receiving water sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ☐ Yes ☐ No		

C. Source water information:

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

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

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ☐ Existing discharge ☐ New discharge ☐ New source	
Outfall(s):	Outfall location(s): (Latitude, Longitude) • •
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ☐ Indirect discharge, if so, specify: ☐ A private storm sewer system ☐ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ☐ Yes ☐ No Has the operator has received permission from the owner to use such system for discharges? (check one): ☐ Yes ☐ No, if so, explain, with an estimated timeframe for obtaining permission: Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ☐ No	
Provide the expected start and end dates of discharge(s) (month/year):	
Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ☐ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ☐ Yes ☐ No	

2. Activity Category: (check all that apply)	3. Contamination Type Category: (check all that apply)	
☐ I – Petroleum-Related Site Remediation ☐ II – Non-Petroleum-Related Site Remediation ☐ III – Contaminated Site Dewatering ☐ IV – Dewatering of Pipelines and Tanks ☐ V – Aquifer Pump Testing ☐ VI – Well Development/Rehabilitation ☐ VII – Collection Structure Dewatering/Remediation ☐ VIII – Dredge-Related Dewatering	a. If Activity Category I or II: (check all that apply) ☐ A. Inorganics ☐ B. Non-Halogenated Volatile Organic Compounds ☐ C. Halogenated Volatile Organic Compounds ☐ D. Non-Halogenated Semi-Volatile Organic Compounds ☐ E. Halogenated Semi-Volatile Organic Compounds ☐ F. Fuels Parameters	
	b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)	
	<table border="1"> <tr> <td data-bbox="970 800 1419 873">☐ G. Sites with Known Contamination</td><td data-bbox="1419 800 2003 873">☐ H. Sites with Unknown Contamination</td></tr> </table>	☐ G. Sites with Known Contamination
☐ G. Sites with Known Contamination	☐ H. Sites with Unknown Contamination	
<table border="1"> <tr> <td data-bbox="970 873 1419 1409"> c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply) ☐ A. Inorganics ☐ B. Non-Halogenated Volatile Organic Compounds ☐ C. Halogenated Volatile Organic Compounds ☐ D. Non-Halogenated Semi-Volatile Organic Compounds ☐ E. Halogenated Semi-Volatile Organic Compounds ☐ F. Fuels Parameters </td><td data-bbox="1419 873 2003 1409"> d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply </td></tr> </table>	c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply) ☐ A. Inorganics ☐ B. Non-Halogenated Volatile Organic Compounds ☐ C. Halogenated Volatile Organic Compounds ☐ D. Non-Halogenated Semi-Volatile Organic Compounds ☐ E. Halogenated Semi-Volatile Organic Compounds ☐ F. Fuels Parameters	d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply
c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply) ☐ A. Inorganics ☐ B. Non-Halogenated Volatile Organic Compounds ☐ C. Halogenated Volatile Organic Compounds ☐ D. Non-Halogenated Semi-Volatile Organic Compounds ☐ E. Halogenated Semi-Volatile Organic Compounds ☐ F. Fuels Parameters	d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply	

MAG910000
NHG910000

4. Influent and Effluent Characteristics

Influent and Effluent Characteristics									
Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia								Report mg/L	---
Chloride								Report µg/l	---
Total Residual Chlorine								0.2 mg/L	
Total Suspended Solids								30 mg/L	---
Antimony								206 µg/L	
Arsenic								104 µg/L	
Cadmium								10.2 µg/L	
Chromium III								323 µg/L	
Chromium VI								323 µg/L	
Copper								242 µg/L	
Iron								5,000 µg/L	
Lead								160 µg/L	
Mercury								0.739 µg/L	
Nickel								1,450 µg/L	
Selenium								235.8 µg/L	
Silver								35.1 µg/L	
Zinc								420 µg/L	
Cyanide								178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX								100 µg/L	---
Benzene								5.0 µg/L	---
1,4 Dioxane								200 µg/L	---
Acetone								7.97 mg/L	---
Phenol								1,080 µg/L	

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

[illegible]

E. Treatment system information

1. Indicate the type(s) of treatment that will be applied to effluent prior to discharge: (check all that apply) ☐ Adsorption/Absorption ☐ Advanced Oxidation Processes ☐ Air Stripping ☐ Granulated Activated Carbon (“GAC”)/Liquid Phase Carbon Adsorption ☐ Ion Exchange ☐ Precipitation/Coagulation/Flocculation ☐ Separation/Filtration ☐ Other; if so, specify:	
2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge. Identify each major treatment component (check any that apply): ☐ Fractionation tanks ☐ Equalization tank ☐ Oil/water separator ☐ Mechanical filter ☐ Media filter ☐ Chemical feed tank ☐ Air stripping unit ☐ Bag filter ☐ Other; if so, specify: Indicate if either of the following will occur (check any that apply): ☐ Chlorination ☐ De-chlorination	
3. Provide the design flow capacity in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: Is use of a flow meter feasible? (check one): ☐ Yes ☐ No, if so, provide justification:	
Provide the proposed maximum effluent flow in gpm.	
Provide the average effluent flow in gpm.	
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	
4. Has the operator attached a schematic of flow in accordance with the instructions in E, above? (check one): ☐ Yes ☐ No	

F. Chemical and additive information

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

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

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

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

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

G. Endangered Species Act eligibility determination

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

- ☐ **FWS Criterion A:** No endangered or threatened species or critical habitat are in proximity to the discharges or related activities or come in contact with the “action area”.
- ☐ **FWS Criterion B:** Formal or informal consultation with the FWS under section 7 of the ESA resulted in either a no jeopardy opinion (formal consultation) or a written concurrence by FWS on a finding that the discharges and related activities are “not likely to adversely affect” listed species or critical habitat (informal consultation). Has the operator completed consultation with FWS? (check one): ☐ Yes ☐ No; if no, is consultation underway? (check one): ☐ Yes ☐ No
- ☐ **FWS Criterion C:** Using the best scientific and commercial data available, the effect of the discharges and related activities on listed species and critical habitat have been evaluated. Based on those evaluations, a determination is made by EPA, or by the operator and affirmed by EPA, that the discharges and related activities will have “no effect” on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the FWS. This determination was made by: (check one) ☐ the operator ☐ EPA ☐ Other; if so, specify:

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

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

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

H. National Historic Preservation Act eligibility determination

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

- ☐ **Criterion A:** No historic properties are present. The discharges and discharge-related activities (e.g., BMPs) do not have the potential to cause effects on historic properties.
- ☐ **Criterion B:** Historic properties are present. Discharges and discharge related activities do not have the potential to cause effects on historic properties.
- ☐ **Criterion C:** Historic properties are present. The discharges and discharge-related activities have the potential to have an effect or will have an adverse effect on historic properties.

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

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

I. Supplemental information

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

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

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

J. Certification requirement

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

BMPP certification statement: **A BMPP meeting the requirements of this general permit will be developed and implemented upon initiation of discharge.**

Notification provided to the appropriate State, including a copy of this NOI, if required.

Check one: Yes ☒ No ☐

Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.

Check one: Yes ☒ No ☐

Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.

Check one: Yes ☐ No ☐ NA ☒

Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.

Check one: Yes ☐ No ☐ NA ☒

Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☒ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:

Check one: Yes ☒ No ☐ NA ☐

Signature:



Date:

3/18/19

Print Name and Title: **Thomas N. O'Brien, Owner's Representative**

ATTACHMENT B:
BWSC DEWATERING PERMIT APPLICATION



Boston Water and
Sewer Commission
980 Harrison Avenue
Boston, MA 02119-2540

DEWATERING DISCHARGE PERMIT APPLICATION

OWNER / AUTHORIZED APPLICANT PROVIDE INFORMATION HERE:

Company Name: BC ONE CONGRESS TOWER JV, LLC Address: One Congress Street, 11th Floor

Phone Number: (617) 593-8697 Fax number: _____

Contact person name: David Ambrose Title: Vice President, Construction

Cell number: _____ Email address: dambrose@hyminvestments.com

Permit Request (check one): ☒ New Application ☐ Permit Extension ☐ Other (Specify): _____

Owner's Information (if different from above):

Owner of property being dewatered: _____

Owner's mailing address: _____ Phone number: _____

Location of Discharge & Proposed Treatment System(s):

Street number and name: One Congress Street Neighborhood Boston: Government Center

Discharge is to at: ☐ Sanitary Sewer ☐ Combined Sewer ☒ Storm Drain ☐ Other (specify): _____

Describe Proposed Pre-Treatment System(s): Sedimentation tank and bag filters, other treatment as required

BWSC Outfall No. 049 (See Attached) Receiving Waters Charles River

Temporary Discharges (Provide Anticipated Dates of Discharge): From March 2019 To March 2020

☐ Groundwater Remediation	☐ Tank Removal/Installation	☒ Foundation Excavation
☐ Utility/Manhole Pumping	☐ Test Pipe	☐ Trench Excavation
☐ Accumulated Surface Water	☐ Hydrogeologic Testing	☐ Other _____

Permanent Discharges

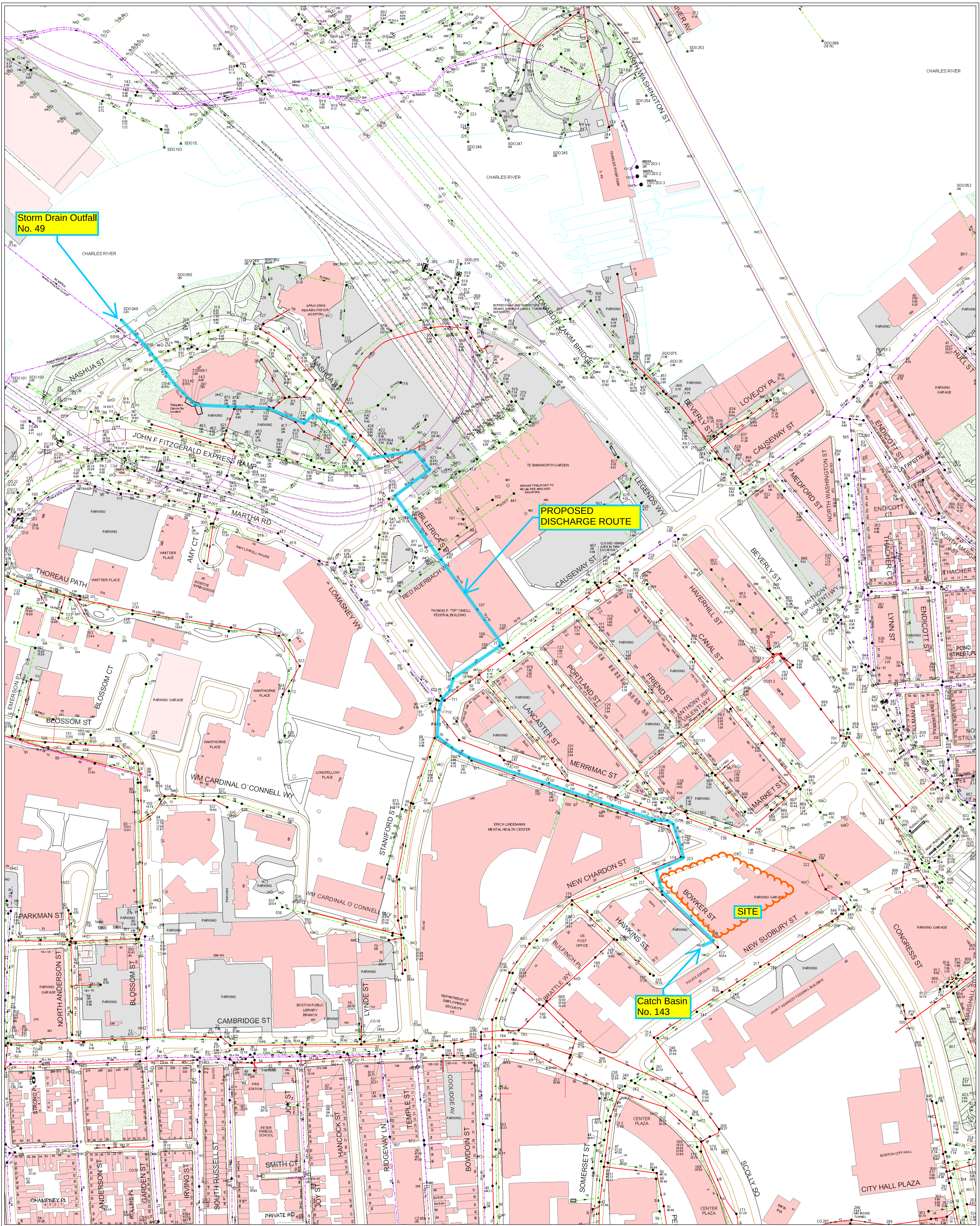
☐ Foundation Drainage	☐ Crawl Space/Footing Drain
☐ Accumulated Surface Water	☐ Non-contact/Uncontaminated Cooling
☐ Non-contact/Uncontaminated Process	☐ Other; _____

1. Attach a Site Plan showing the source of the discharge and the location of the point of discharge (i.e. the sewer pipe or catch basin). Include meter type, meter number, size, make and start reading. Note: All discharges to the Commission's sewer system will be assessed current sewer charges.
2. If discharging to a sanitary or combined sewer, attach a copy of MWRA's Sewer Use Discharge permit or application.
3. If discharging to a separate storm drain, attach a copy of EPA's NPDES Permit or NOI application, or NPDES Permit exclusion letter for the discharge, as well as other relevant information.
4. Dewatering Drainage Permit will be denied or revoked if applicant fails to obtain the necessary permits from MWRA or EPA.

Submit Completed Application to: Boston Water and Sewer Commission
Engineering Customer Services
980 Harrison Avenue, Boston, MA 02119
Attn: Matthew Tuttle, Engineering Customer Service
E-mail: tuttlemp@bwsc.org
Phone: 617-989-7204 Fax: 617-989-7716

Signature of Authorized Representative for Property Owner: _____

Date: 3/18/19

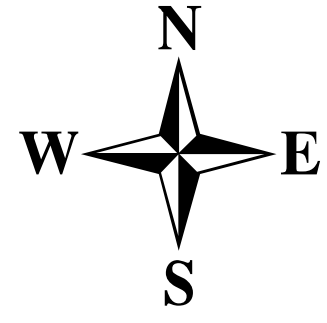


Storm Drain Outfall
No. 49

PROPOSED
DISCHARGE ROUTE

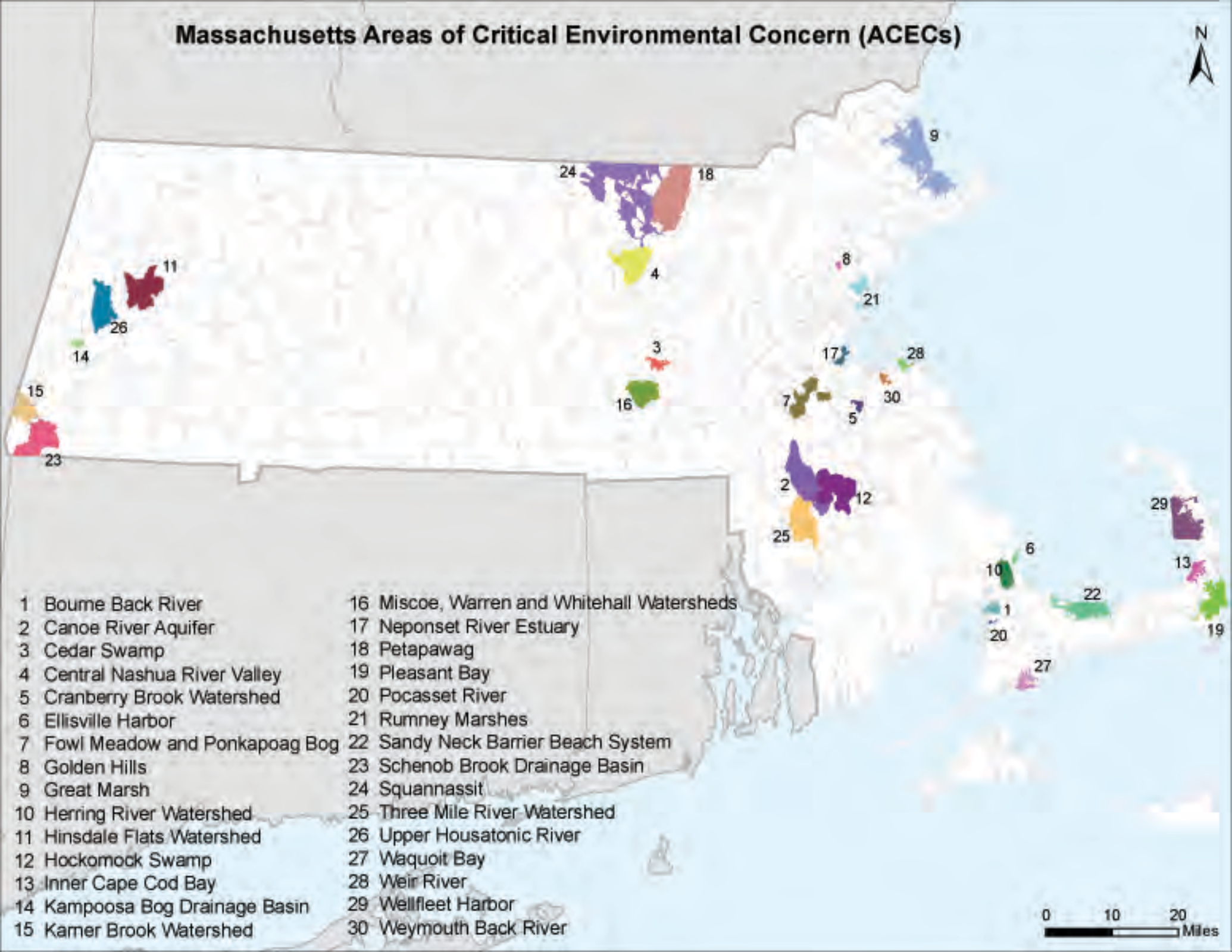
Catch Basin
No. 143

SITE



ATTACHMENT C:
AREAS OF CRITICAL ENVIRONMENTAL CONCERN
DOCUMENTATION

Massachusetts Areas of Critical Environmental Concern (ACECs)



- | | |
|---------------------------------|--|
| 1 Bourns 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 Kanner Brook Watershed | 30 Weymouth Back River |

0 10 20 Miles

MASSACHUSETTS AREAS OF CRITICAL ENVIRONMENTAL CONCERN

November 2010

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**November 2010**

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		

ATTACHMENT D:
NATIONAL HISTORIC REGISTER OF HISTORIC PLACES AND
MASSACHUSETTS HISTORICAL COMMISSION
DOCUMENTATION

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: Government Center; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

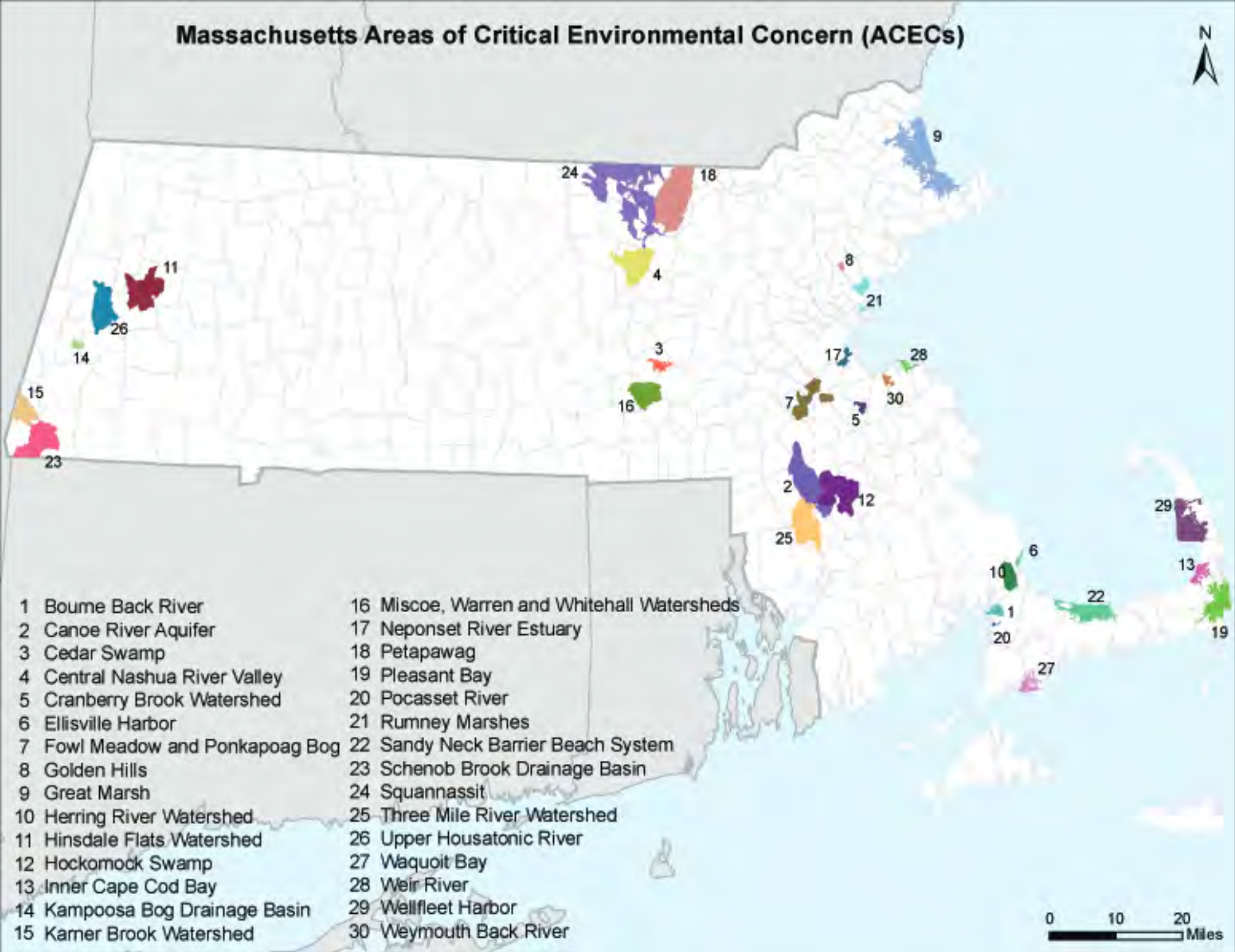
Inv. No.	Property Name	Street	Town	Year
BOS.AV	Sears' Crescent and Sears' Block		Boston	
BOS.1508	McCormack, John W. State Office Building	1 Ashburton Pl	Boston	1975
BOS.1509	Massachusetts Teachers Association Building	20 Ashburton Pl	Boston	c 1965
BOS.1551	One Beacon Street	1 Beacon St	Boston	c 1969
BOS.1552	Lawyers Building	9 Beacon St	Boston	1922
BOS.1553	Boston Transit Commission Building	15 Beacon St	Boston	1903
BOS.1554	Hotel Bellevue	19-21B Beacon St	Boston	1899
BOS.1576	Beacon Hill Apartment House	126 Bowdoin St	Boston	c 1927
BOS.1577	Church of the New Jerusalem - Church On The Hill	140 Bowdoin St	Boston	1963
BOS.1578	Boston Society of the New Jerusalem Building	144 Bowdoin St	Boston	c 1925
BOS.1579	Way, Samuel A. Carriage House	146-150 Bowdoin St	Boston	1870
BOS.1904	Temporary Home for Women	40-50 Bowker St	Boston	1924
BOS.1582	Bradlee, James Bowdoin Building	50-54 Broad St	Boston	1853
BOS.917	Bowdoin Street Subway Station	Cambridge St	Boston	1916
BOS.918	Scollay Square Under Subway Station	Cambridge St	Boston	1916
BOS.922	Scollay Square - Government Center Subway Station	1 Cambridge St	Boston	1898
BOS.1575	New England Telephone and Telegraph Company	65 Cambridge St	Boston	1930
BOS.1616	Saltonstall, Leverett State Office Building	100 Cambridge St	Boston	1965
BOS.1618	Massachusetts Health, Welfare and Education Center	115 Cambridge St	Boston	r 1965
BOS.1645	One, Two and Three Center Plaza	1-3 Center Plaza	Boston	r 1965
BOS.1656	Kirstein Memorial Library	20 City Hall Ave	Boston	1930
BOS.1657	Boston City Hall	1 City Hall Sq	Boston	r 1965
BOS.1672	Sears' Crescent	38-68 Cornhill St	Boston	1816
BOS.1673	Sears' Block	70-72 Cornhill St	Boston	1848

Inv. No.	Property Name	Street	Town	Year
BOS.1674		38 Court Sq	Boston	1914
BOS.1678	Ames Building, The	1 Court St	Boston	c 1891
BOS.1671	Old Colony Trust Company	17-19 Court St	Boston	1923
BOS.1679	Old Colony Trust Company Building	17 Court St	Boston	1908
BOS.1680	City Bank and Trust Company Building	25 Court St	Boston	1967
BOS.1676	Boston City Hall Annex	26 Court St	Boston	1912
BOS.1677	Scollay Building	30-40 Court St	Boston	1914
BOS.1614	Capital Bank Building	30 Hawkins St	Boston	1972
BOS.948	Edison Electric Illuminating Substation	33 Hawkins St	Boston	1927
BOS.1783	Overseers of Public Welfare Building	35 Hawkins St	Boston	1924
BOS.1782	R. K. O. General Building	40 Hawkins St	Boston	1967
BOS.1901	Bulfinch Building	15 New Chardon St	Boston	1968
BOS.1902	Royal Globe Insurance Company	25 New Chardon St	Boston	1967
BOS.1903	Jewish Family and Children's Service	31 New Chardon St	Boston	1967
BOS.1617	Kennedy, John F. Federal Office Building	15 New Sudbury St	Boston	1966
BOS.2023	Boston District #1 Police Station	40 New Sudbury St	Boston	1968
BOS.2024	Government Center Parking Garage	50 New Sudbury St	Boston	1966
BOS.938	Choate, Rufus Statue	Pemberton Sq	Boston	1898
BOS.1573	Suffolk County Courthouse Addition	1 Pemberton Sq	Boston	c 1936
BOS.1945	Adams, John Courthouse	1 Pemberton Sq	Boston	r 1885
BOS.1675	Thompson's Spa	15 Pie Alley	Boston	1922
BOS.1970	Boston Five Cents Savings Bank	10 School St	Boston	c 1972
BOS.1974	Hunnewell, Horatio Hollis Building	13-15 School St	Boston	1888
BOS.1975	Codman, Martha C. Building	19-21 School St	Boston	1917
BOS.1976	Niles Building	23-29 School St	Boston	1915
BOS.932	Franklin, Benjamin Statue	41-45 School St	Boston	1855
BOS.936	Quincy, Josiah Statue	41-45 School St	Boston	1879
BOS.1977	Old City Hall	41-45 School St	Boston	1862
BOS.1979	Boston City Club	12-14 Somerset St	Boston	1913
BOS.1980	Metropolitan District Commission Building	20 Somerset St	Boston	1932
BOS.919	Devonshire - State Street Subway Station	State St	Boston	1904
BOS.2107	Old State House	State St	Boston	1712
BOS.803	King's Chapel Burying Ground	Tremont St	Boston	1630
BOS.2064	Hemenway Building	2-16 Tremont St	Boston	1883
BOS.2065	Kimball Building	18-28 Tremont St	Boston	1902
BOS.2067	King's Chapel	58 Tremont St	Boston	r 1750
BOS.2068	Tremont Building	67-81 Tremont St	Boston	1895
BOS.2106	One Washington Mall	1 Washington Mall	Boston	1972

Inv. No.	Property Name	Street	Town	Year
BOS.2124	Boston Company Building, The	197-235 Washington St	Boston	1968
BOS.1569	Boston Company Building	201 Washington St	Boston	1970
BOS.2125	Coffman's Washington Street Garage	227-275 Washington St	Boston	1966
BOS.2126	Cunningham, Andrew House	277-279 Washington St	Boston	r 1725
BOS.2127	Old Corner Bookstore, The	277-285 Washington St	Boston	1718

ATTACHMENT E:
ENDANGERED SPECIES ACT DOCUMENTATION

Massachusetts Areas of Critical Environmental Concern (ACECs)



Town:

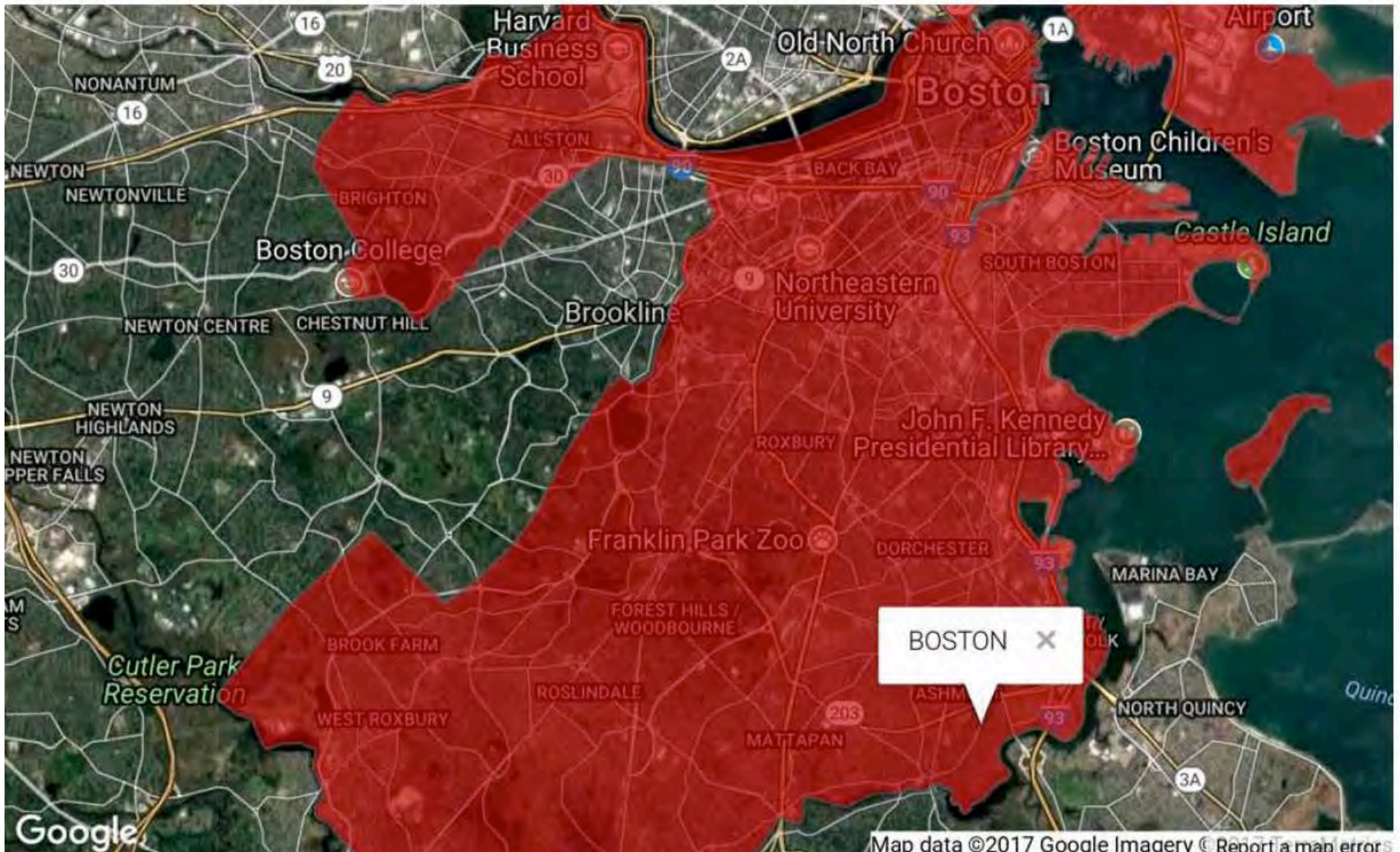
BOSTON

or

Species (Common Name):

or

Species (Scientific Name):



September 13, 2017 Town Species Viewer

<http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/town-species-viewer.html>

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BOSTON	Butterfly/Moth	Abagrotis nefascia	Coastal Heathland Cutworm	SC		2001
BOSTON	Bird	Accipiter striatus	Sharp-shinned Hawk	SC		1898
BOSTON	Vascular Plant	Ageratina aromatica	Lesser Snakeroot	E		1896
BOSTON	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC		2013
BOSTON	Bird	Ammodramus savannarum	Grasshopper Sparrow	T		1993
BOSTON	Butterfly/Moth	Apodrepanulatrix liberaria	New Jersey Tea Inchworm	E		Historic
BOSTON	Vascular Plant	Aristida purpurascens	Purple Needlegrass	T		1800s
BOSTON	Vascular Plant	Aristida tuberculosa	Seabeach Needlegrass	T		1877
BOSTON	Vascular Plant	Asclepias verticillata	Linear-leaved Milkweed	T		1878
BOSTON	Bird	Bartramia longicauda	Upland Sandpiper	E		1993
BOSTON	Vascular Plant	Boechera missouriensis	Green Rock-cress	T		1930
BOSTON	Vascular Plant	Carex striata	Walter's Sedge	E		Historic
BOSTON	Bird	Charadrius melodus	Piping Plover	T	T	2011
BOSTON	Beetle	Cicindela duodecimguttata	Twelve-spotted Tiger Beetle	SC		1910
BOSTON	Beetle	Cicindela purpurea	Cow Path Tiger Beetle	SC		1928
BOSTON	Beetle	Cicindela rufiventris hentzii	Eastern Red-bellied Tiger Beetle	T		1927
BOSTON	Vascular Plant	Desmodium cuspidatum	Large-bracted Tick-trefoil	T		1896
BOSTON	Vascular Plant	Eriophorum gracile	Slender Cottongrass	T		1885
BOSTON	Bird	Falco peregrinus	Peregrine Falcon	E		2014
BOSTON	Fish	Gasterosteus aculeatus	Threespine Stickleback	T		2014
BOSTON	Bird	Gavia immer	Common Loon	SC		1824
BOSTON	Vascular Plant	Houstonia longifolia	Long-leaved Bluet	E		1918
BOSTON	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC		1933
BOSTON	Mussel	Ligumia nasuta	Eastern Pondmussel	SC		1841
BOSTON	Vascular Plant	Linum medium var. texanum	Rigid Flax	T		1909
BOSTON	Vascular Plant	Lycopus rubellus	Gypsywort	E		1896
BOSTON	Butterfly/Moth	Metarranthis apiciaria	Barrens Metarranthis	E		1934
BOSTON	Vascular Plant	Myriophyllum alterniflorum	Alternate-flowered Water-milfoil	E		Historic
BOSTON	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T		1884
BOSTON	Vascular Plant	Platanthera flava var. herbiola	Pale Green Orchis	T		1908
BOSTON	Bird	Poecetes gramineus	Vesper Sparrow	T		1985
BOSTON	Butterfly/Moth	Pyrrhia aurantiago	Orange Sallow Moth	SC		1988
BOSTON	Vascular Plant	Ranunculus micranthus	Tiny-flowered Buttercup	E		1891
BOSTON	Vascular Plant	Rumex pallidus	Seabeach Dock	T		1984
BOSTON	Vascular Plant	Sanicula odorata	Long-styled Sanicle	T		Historic
BOSTON	Amphibian	Scaphiopus holbrookii	Eastern Spadefoot	T		1932
BOSTON	Vascular Plant	Scirpus longii	Long's Bulrush	T		1907
BOSTON	Vascular Plant	Setaria parviflora	Bristly Foxtail	SC		2001
BOSTON	Dragonfly/Damselfly	Somatochlora linearis	Mocha Emerald	SC		2009
BOSTON	Bird	Sterna hirundo	Common Tern	SC		2013
BOSTON	Bird	Sternula antillarum	Least Tern	SC		2013
BOSTON	Vascular Plant	Suaeda calceoliformis	American Sea-blite	SC		1909
BOSTON	Reptile	Terrapene carolina	Eastern Box Turtle	SC		1939
BOSTON	Bird	Tyto alba	Barn Owl	SC		1989
BOSTON	Bird	Vermivora chrysoptera	Golden-winged Warbler	E		Historic
BOSTON	Vascular Plant	Viola brittoniana	Britton's Violet	T		1909

MassDEP - Bureau of Waste Site Cleanup

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

Site Information:

ONE CONGRESS STREET
ONE CONGRESS STREET BOSTON, MA

NAD83 UTM Meters:

4692059mN , 330402mE (Zone: 19)
June 22, 2016

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



MassDEP

Commonwealth of Massachusetts
Department of Environmental Protection



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

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

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

Aquifers: Medium Yield, High Yield, EPA Sole Source.....

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

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

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

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

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)
	Red Knot ¹	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
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	Taunton
	Red Knot ¹	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
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
	Red Knot ¹	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

Updated 02/05/2016

**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES
IN MASSACHUSETTS**

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
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	Gloucester, Essex, Ipswich, Rowley, Revere, Newbury, Newburyport and Salisbury
	Red Knot ¹	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague, Warwick
	Dwarf wedgemussel	Endangered	Mill River	Whately
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
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.	Hatfield, Amherst and Northampton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
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
	Red Knot ¹	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES
IN MASSACHUSETTS**

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
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, Wareham, Halifax, and Pembroke
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Plymouth, Marion, Wareham, and Mattapoisett.
	Red Knot ¹	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Suffolk	Piping Plover	Threatened	Coastal Beaches	Revere, Winthrop
	Red Knot ¹	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

¹Migratory only, scattered along the coast in small numbers

-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.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 03301
PHONE: (603)223-2541 FAX: (603)223-0104
URL: www.fws.gov/newengland

Consultation Code: 05E1NE00-2016-SLI-1668

June 22, 2016

Event Code: 05E1NE00-2016-E-02416

Project Name: One Congress Street Development

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: One Congress Street Development

Official Species List

Provided by:

New England Ecological Services Field Office

70 COMMERCIAL STREET, SUITE 300

CONCORD, NH 03301

(603) 223-2541

<http://www.fws.gov/newengland>

Consultation Code: 05E1NE00-2016-SLI-1668

Event Code: 05E1NE00-2016-E-02416

Project Type: DEVELOPMENT

Project Name: One Congress Street Development

Project Description: Renovation of the existing 11 story garage. The garage has 9 floors of parking and 2 floors of office space. The renovations in question will be the relocation of access ramps and drive lanes to provide access around future proposed construction.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: One Congress Street Development

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-71.05850011110306 42.36325099040383, -71.06033205986023 42.36236906043124, -71.05977684259415 42.36196277391919, -71.05794221162796 42.36285858264135, -71.05850011110306 42.36325099040383)))

Project Counties: Suffolk, MA



United States Department of Interior
Fish and Wildlife Service

Project name: One Congress Street Development

Endangered Species Act Species List

There are a total of 1 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	Status	Has Critical Habitat	Condition(s)
Red Knot (<i>Calidris canutus rufa</i>)	Threatened		



United States Department of Interior
Fish and Wildlife Service

Project name: One Congress Street Development

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Town:

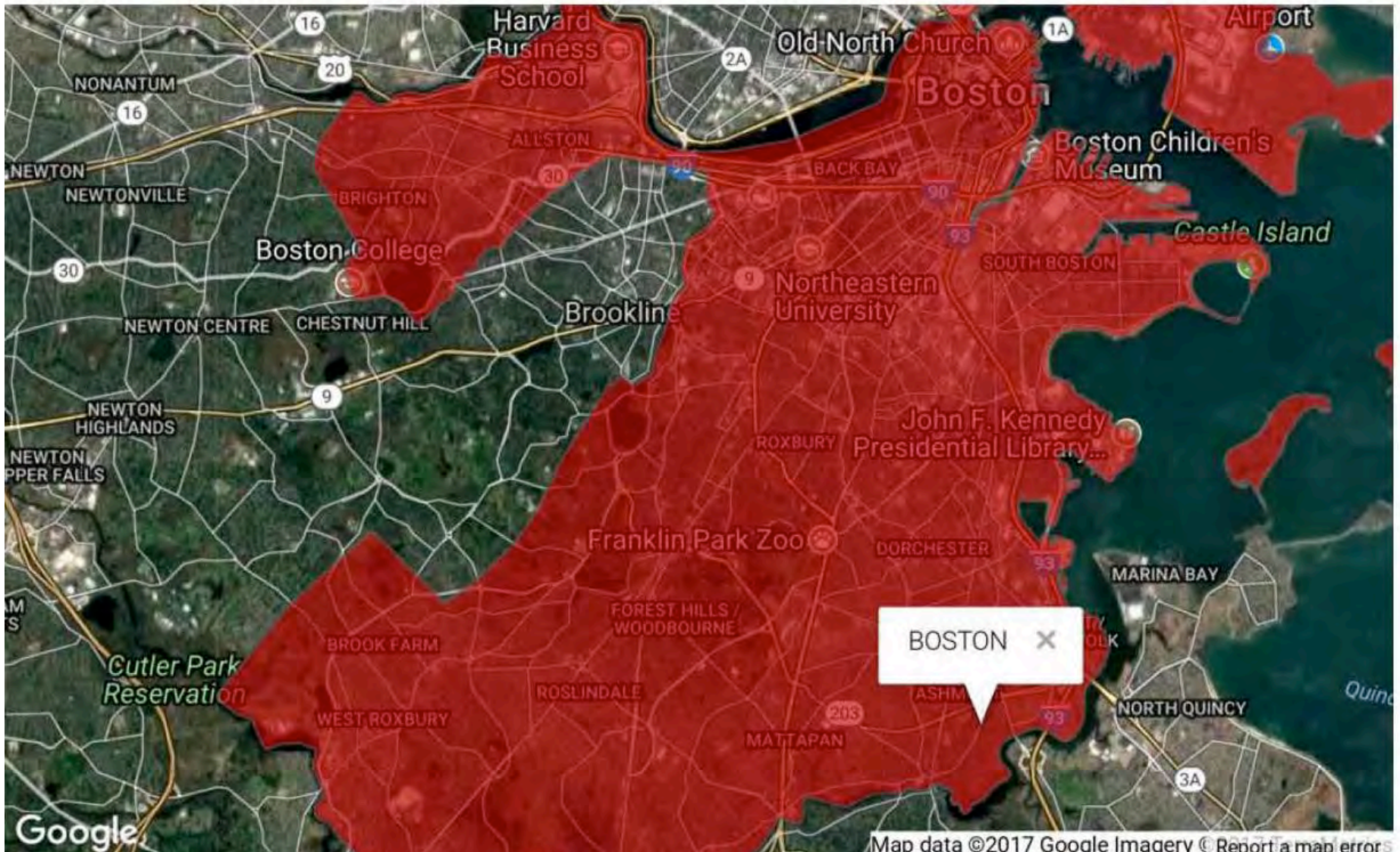
BOSTON

or

Species (Common Name):

or

Species (Scientific Name):



September 13, 2017 Town Species Viewer

<http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/town-species-viewer.html>

ATTACHMENT F:
LABORATORY ANALYTICAL REPORTS

September 25, 2017

Jesse Freeman
Vertex Engineering - Weymouth
400 Libbey Parkway
Weymouth, MA 02189

Project Location: One Congress St.
Client Job Number:
Project Number: [none]
Laboratory Work Order Number: 17I0704

Enclosed are results of analyses for samples received by the laboratory on September 15, 2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Meghan E. Kelley". The signature is written in a cursive, flowing style.

Meghan E. Kelley
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Vertex Engineering - Weymouth
400 Libbey Parkway
Weymouth, MA 02189
ATTN: Jesse Freeman

REPORT DATE: 9/25/2017

PURCHASE ORDER NUMBER:

PROJECT NUMBER: [none]

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 17I0704

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: One Congress St.

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Municipal FH	17I0704-01	Water		EPA 200.7 EPA 624 SM21-22 4500 CL G	
BOS-049	17I0704-02	Surface Water		- EPA 1664B EPA 200.7 EPA 200.8 EPA 245.1 EPA 300.0 EPA 504.1 EPA 608 EPA 624 EPA 625 SM19-22 4500 NH3 C SM21-22 2540D SM21-22 3500 Cr B SM21-22 4500 CL G SW-846 8270D SW-846 9014 Tri Chrome Calc. EPA 624	NH NELAC 2539/ MA M-MA014/CT PH-0494 +others NY11393/MA-MA1138/M A1110 MA M-MA-086/CT PH-0574/NY11148 MA M-MA-086/CT PH-0574/NY11148
Trip Blank	17I0704-03	Trip Blank Water			

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method 8270, only a select list of compounds was requested and reported.

EPA 625**Qualifications:****L-04**

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:**2-Chloronaphthalene**

1710704-02[BOS-049], B186688-BLK1, B186688-BS1, B186688-BSD1

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:**Fluorene**

B186688-BSD1

Pyrene

B186688-BSD1

V-04

Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria.

Analyte & Samples(s) Qualified:**4,6-Dinitro-2-methylphenol**

1710704-02[BOS-049], B186688-BLK1, B186688-BS1, B186688-BSD1

Benzidine

1710704-02[BOS-049], B186688-BLK1, B186688-BS1, B186688-BSD1

V-19

Initial calibration did not meet method specifications. Compound was calibrated using linear regression with correlation coefficient <0.99.

Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:**2,4-Dinitrophenol**

1710704-02[BOS-049], B186688-BLK1, B186688-BS1, B186688-BSD1

V-20

Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:**2,4-Dinitrophenol**

1710704-02[BOS-049], B186688-BLK1, B186688-BS1, B186688-BSD1

4,6-Dinitro-2-methylphenol

1710704-02[BOS-049], B186688-BLK1, B186688-BS1, B186688-BSD1

SM21-22 2540D**Qualifications:****R-04**

Duplicate relative percent difference (RPD) is a less useful indicator of sample precision for sample results that are <5 times the reporting limit (RL).

Analyte & Samples(s) Qualified:**Total Suspended Solids**

1710704-02[BOS-049], B186410-DUP2

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light pink rectangular background.

Lisa A. Worthington
Project Manager

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Field Sample #: Municipal FH

Sampled: 9/15/2017 14:50

Sample ID: 1710704-01

Sample Matrix: Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Methyl tert-Butyl Ether (MTBE)	ND	2.0	0.090	µg/L	1		EPA 624	9/20/17	9/20/17 23:23	EEH
Surrogates	% Recovery		Recovery Limits		Flag/Qual					
1,2-Dichloroethane-d4	98.2		70-130						9/20/17 23:23	
Toluene-d8	100		70-130						9/20/17 23:23	
4-Bromofluorobenzene	95.4		70-130						9/20/17 23:23	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Field Sample #: Municipal FH

Sampled: 9/15/2017 14:50

Sample ID: 1710704-01

Sample Matrix: Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hardness	16			mg/L	1		EPA 200.7	9/21/17	9/22/17 14:12	QNW

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Field Sample #: Municipal FH

Sampled: 9/15/2017 14:50

Sample ID: 1710704-01

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chlorine, Residual	2.1	0.10	mg/L	5		SM21-22 4500 CL G	9/15/17	9/15/17 23:15	DJM

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Field Sample #: BOS-049

Sampled: 9/15/2017 11:30

Sample ID: 1710704-02

Sample Matrix: Surface Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	0.11	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Benzene	ND	1.0	0.12	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
tert-Butyl Alcohol (TBA)	ND	20	2.2	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Carbon Tetrachloride	ND	2.0	0.25	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,2-Dichlorobenzene	ND	2.0	0.17	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,3-Dichlorobenzene	ND	2.0	0.17	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,4-Dichlorobenzene	ND	2.0	0.15	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,2-Dichloroethane	ND	2.0	0.19	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
cis-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,1-Dichloroethane	ND	2.0	0.16	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,1-Dichloroethylene	ND	2.0	0.21	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,4-Dioxane	ND	50	26	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Ethylbenzene	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Methyl tert-Butyl Ether (MTBE)	ND	2.0	0.090	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Methylene Chloride	ND	5.0	3.2	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Tetrachloroethylene	ND	2.0	0.27	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Toluene	ND	1.0	0.17	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,1,1-Trichloroethane	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,1,2-Trichloroethane	ND	2.0	0.24	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Trichloroethylene	ND	2.0	0.20	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Vinyl Chloride	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
m+p Xylene	ND	2.0	0.26	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
o-Xylene	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Surrogates	% Recovery	Recovery Limits	Flag/Qual							
1,2-Dichloroethane-d4	98.6	70-130								
Toluene-d8	100	70-130								
4-Bromofluorobenzene	95.2	70-130								

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Field Sample #: BOS-049

Sampled: 9/15/2017 11:30

Sample ID: 1710704-02

Sample Matrix: Surface Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzo(a)anthracene	ND	0.050	0.050	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Benzo(a)pyrene	ND	0.10	0.10	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Benzo(b)fluoranthene	ND	0.050	0.050	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Benzo(k)fluoranthene	ND	0.20	0.20	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Bis(2-Ethylhexyl)phthalate	0.20	1.0	0.10	µg/L	1	J	SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Chrysene	ND	0.20	0.20	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Dibenz(a,h)anthracene	ND	0.20	0.20	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Indeno(1,2,3-cd)pyrene	ND	0.20	0.20	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Pentachlorophenol	ND	1.0	0.34	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Surrogates	% Recovery		Recovery Limits		Flag/Qual					
2-Fluorophenol	45.2		15-110						9/22/17 16:05	
Phenol-d6	29.9		15-110						9/22/17 16:05	
Nitrobenzene-d5	75.2		30-130						9/22/17 16:05	
2-Fluorobiphenyl	77.8		30-130						9/22/17 16:05	
2,4,6-Tribromophenol	70.6		15-110						9/22/17 16:05	
p-Terphenyl-d14	74.0		30-130						9/22/17 16:05	

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Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Field Sample #: BOS-049

Sampled: 9/15/2017 11:30

Sample ID: 1710704-02

Sample Matrix: Surface Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Acenaphthylene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Anthracene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Benzidine	ND	20	µg/L	1	V-04	EPA 625	9/20/17	9/22/17 11:00	BGL
Benzo(g,h,i)perylene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
4-Bromophenylphenylether	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Butylbenzylphthalate	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
4-Chloro-3-methylphenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Bis(2-chloroethyl)ether	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Bis(2-chloroisopropyl)ether	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2-Chloronaphthalene	ND	10	µg/L	1	L-04	EPA 625	9/20/17	9/22/17 11:00	BGL
2-Chlorophenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
4-Chlorophenylphenylether	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Di-n-butylphthalate	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
1,3-Dichlorobenzene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
1,4-Dichlorobenzene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
1,2-Dichlorobenzene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
3,3-Dichlorobenzidine	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2,4-Dichlorophenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Diethylphthalate	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2,4-Dimethylphenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Dimethylphthalate	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
4,6-Dinitro-2-methylphenol	ND	10	µg/L	1	V-04, V-20	EPA 625	9/20/17	9/22/17 11:00	BGL
2,4-Dinitrophenol	ND	10	µg/L	1	V-19, V-20	EPA 625	9/20/17	9/22/17 11:00	BGL
2,4-Dinitrotoluene	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2,6-Dinitrotoluene	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Di-n-octylphthalate	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
1,2-Diphenylhydrazine (as Azobenzene)	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Bis(2-Ethylhexyl)phthalate	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Fluoranthene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Fluorene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Hexachlorobenzene	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Hexachlorobutadiene	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Hexachlorocyclopentadiene	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Hexachloroethane	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Isophorone	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Naphthalene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Nitrobenzene	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2-Nitrophenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
4-Nitrophenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
N-Nitrosodimethylamine	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
N-Nitrosodiphenylamine	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
N-Nitrosodi-n-propylamine	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2-Methylnaphthalene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Field Sample #: BOS-049

Sampled: 9/15/2017 11:30

Sample ID: 1710704-02

Sample Matrix: Surface Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Phenanthrene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2-Methylphenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Phenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
3/4-Methylphenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Pyrene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
1,2,4-Trichlorobenzene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2,4,6-Trichlorophenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
2-Fluorophenol	44.7	15-110							
Phenol-d6	34.8	15-110							
Nitrobenzene-d5	76.4	30-130							
2-Fluorobiphenyl	71.1	30-130							
2,4,6-Tribromophenol	69.8	15-110							
p-Terphenyl-d14	78.6	30-130							

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Field Sample #: BOS-049

Sampled: 9/15/2017 11:30

Sample ID: 1710704-02

Sample Matrix: Surface Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	0.057	µg/L	1		EPA 608	9/20/17	9/21/17 18:08	KAL
Aroclor-1221 [1]	ND	0.10	0.062	µg/L	1		EPA 608	9/20/17	9/21/17 18:08	KAL
Aroclor-1232 [1]	ND	0.10	0.038	µg/L	1		EPA 608	9/20/17	9/21/17 18:08	KAL
Aroclor-1242 [1]	ND	0.10	0.054	µg/L	1		EPA 608	9/20/17	9/21/17 18:08	KAL
Aroclor-1248 [1]	ND	0.10	0.064	µg/L	1		EPA 608	9/20/17	9/21/17 18:08	KAL
Aroclor-1254 [1]	ND	0.10	0.071	µg/L	1		EPA 608	9/20/17	9/21/17 18:08	KAL
Aroclor-1260 [1]	ND	0.10	0.073	µg/L	1		EPA 608	9/20/17	9/21/17 18:08	KAL
Surrogates	% Recovery		Recovery Limits		Flag/Qual					
Decachlorobiphenyl [1]	81.6		30-150				9/21/17 18:08			
Decachlorobiphenyl [2]	95.6		30-150				9/21/17 18:08			
Tetrachloro-m-xylene [1]	79.3		30-150				9/21/17 18:08			
Tetrachloro-m-xylene [2]	80.4		30-150				9/21/17 18:08			

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Field Sample #: BOS-049

Sampled: 9/15/2017 11:30

Sample ID: 1710704-02

Sample Matrix: Surface Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH
Arsenic	ND	1.0		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH
Cadmium	ND	0.20		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH
Chromium	ND	10		µg/L	1		EPA 200.8	9/19/17	9/20/17 9:43	WSD
Chromium, Trivalent	ND	0.010		mg/L	1		Tri Chrome Calc.	9/20/17	9/22/17 0:03	MJH
Copper	6.2	1.0		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH
Iron	0.13	0.050		mg/L	1		EPA 200.7	9/20/17	9/21/17 14:32	QNW
Lead	1.5	0.50		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH
Mercury	ND	0.00010		mg/L	1		EPA 245.1	9/19/17	9/20/17 9:25	TJK
Nickel	ND	5.0		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH
Selenium	2.3	5.0	2.1	µg/L	1	J	EPA 200.8	9/20/17	9/21/17 6:15	MJH
Silver	ND	0.20		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH
Zinc	ND	20		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH

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Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Field Sample #: BOS-049

Sampled: 9/15/2017 11:30

Sample ID: 1710704-02

Sample Matrix: Surface Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chlorine, Residual	0.028	0.020	mg/L	1		SM21-22 4500 CL G	9/15/17	9/15/17 23:15	DJM
Hexavalent Chromium	ND	0.0040	mg/L	1		SM21-22 3500 Cr B	9/15/17	9/15/17 23:45	DJM
Total Suspended Solids	17	5.0	mg/L	1	R-04	SM21-22 2540D	9/18/17	9/18/17 14:05	LL
Silica Gel Treated HEM (SGT-HEM)	ND	1.6	mg/L	1		EPA 1664B	9/21/17	9/21/17 13:15	LL

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Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Field Sample #: BOS-049

Sampled: 9/15/2017 11:30

Sample ID: 1710704-02

Sample Matrix: Surface Water

Drinking Water Organics EPA 504.1

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,2-Dibromoethane (EDB) (1)	ND	0.020	µg/L	1		EPA 504.1	9/21/17	9/21/17 16:34	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
1,3-Dibromopropane (1)	82.0	70-130						9/21/17 16:34	
1,3-Dibromopropane (2)	85.2	70-130						9/21/17 16:34	

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Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Field Sample #: BOS-049

Sampled: 9/15/2017 11:30

Sample ID: 1710704-02

Sample Matrix: Surface Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	0.063	0.075	mg/L	1		SM19-22 4500 NH3 C		9/20/17 0:00	AAL
Cyanide	ND	0.005	mg/L	1		SW-846 9014		9/20/17 0:00	AAL

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Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Sampled: 9/15/2017 11:30

Field Sample #: BOS-049

Sample ID: 1710704-02

Sample Matrix: Surface Water

Ethanol by 1671A

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethanol	ND	2000	ug/L	1		1671A		9/21/17 0:00	TAN

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Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Field Sample #: BOS-049

Sampled: 9/15/2017 11:30

Sample ID: 1710704-02

Sample Matrix: Surface Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	501	20	mg/L	20		EPA 300.0		9/20/17 0:00	EURO

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Project Location: One Congress St.

Sample Description:

Work Order: 1710704

Date Received: 9/15/2017

Field Sample #: Trip Blank

Sampled: 9/15/2017 00:00

Sample ID: 1710704-03

Sample Matrix: Trip Blank Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	0.11	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Benzene	ND	1.0	0.12	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
tert-Butyl Alcohol (TBA)	ND	20	2.2	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Carbon Tetrachloride	ND	2.0	0.25	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,2-Dichlorobenzene	ND	2.0	0.17	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,3-Dichlorobenzene	ND	2.0	0.17	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,4-Dichlorobenzene	ND	2.0	0.15	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,2-Dichloroethane	ND	2.0	0.19	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
cis-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,1-Dichloroethane	ND	2.0	0.16	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,1-Dichloroethylene	ND	2.0	0.21	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,4-Dioxane	ND	50	26	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Ethylbenzene	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Methyl tert-Butyl Ether (MTBE)	ND	2.0	0.090	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Methylene Chloride	ND	5.0	3.2	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Tetrachloroethylene	ND	2.0	0.27	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Toluene	ND	1.0	0.17	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,1,1-Trichloroethane	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,1,2-Trichloroethane	ND	2.0	0.24	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Trichloroethylene	ND	2.0	0.20	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Vinyl Chloride	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
m+p Xylene	ND	2.0	0.26	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
o-Xylene	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	97.0	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	94.6	70-130	

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Sample Extraction Data

EPA 1664B

Lab Number [Field ID]	Batch	Initial [mL]	Date
17I0704-02 [BOS-049]	B186770	900	09/21/17

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186704	50.0	50.0	09/20/17

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-01 [Municipal FH]	B186801	50.0	50.0	09/21/17

Prep Method: EPA 200.8-EPA 200.8

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186543	50.0	50.0	09/19/17

Prep Method: EPA 200.8-EPA 200.8

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186706	50.0	50.0	09/20/17

Prep Method: EPA 245.1-EPA 245.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186577	6.00	6.00	09/19/17

Prep Method: EPA 504 water-EPA 504.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186764	34.9	35.0	09/21/17

Prep Method: SW-846 3510C-EPA 608

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186668	1000	5.00	09/20/17

Prep Method: SW-846 5030B-EPA 624

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-01 [Municipal FH]	B186621	5	5.00	09/20/17
17I0704-02 [BOS-049]	B186621	5	5.00	09/20/17
17I0704-03 [Trip Blank]	B186621	5	5.00	09/20/17

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Sample Extraction Data**Prep Method: SW-846 3510C-EPA 625**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186688	1000	1.00	09/20/17

SM21-22 2540D

Lab Number [Field ID]	Batch	Initial [mL]		Date
17I0704-02 [BOS-049]	B186410	100		09/18/17

SM21-22 3500 Cr B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186370	50.0	50.0	09/15/17

SM21-22 4500 CL G

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-01 [Municipal FH]	B186372	100	100	09/15/17
17I0704-02 [BOS-049]	B186372	100	100	09/15/17

Prep Method: SW-846 3510C-SW-846 8270D

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186981	1000	1.00	09/20/17

Prep Method: SW-846 3005A-Tri Chrome Calc.

Lab Number [Field ID]	Batch	Initial [mL]		Date
17I0704-02 [BOS-049]	B186740	1.00		09/20/17

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QUALITY CONTROL
Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B186621 - SW-846 5030B
Blank (B186621-BLK1)

Prepared & Analyzed: 09/20/17

Acetone	ND	50	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	1.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	20	µg/L							
Carbon Tetrachloride	ND	2.0	µg/L							
1,2-Dichlorobenzene	ND	2.0	µg/L							
1,3-Dichlorobenzene	ND	2.0	µg/L							
1,4-Dichlorobenzene	ND	2.0	µg/L							
1,2-Dichloroethane	ND	2.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
1,1-Dichloroethane	ND	2.0	µg/L							
1,1-Dichloroethylene	ND	2.0	µg/L							
1,4-Dioxane	ND	50	µg/L							
Ethylbenzene	ND	2.0	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	2.0	µg/L							
Methylene Chloride	ND	5.0	µg/L							
Tetrachloroethylene	ND	2.0	µg/L							
Toluene	ND	1.0	µg/L							
1,1,1-Trichloroethane	ND	2.0	µg/L							
1,1,2-Trichloroethane	ND	2.0	µg/L							
Trichloroethylene	ND	2.0	µg/L							
Vinyl Chloride	ND	2.0	µg/L							
m+p Xylene	ND	2.0	µg/L							
o-Xylene	ND	2.0	µg/L							
Surrogate: 1,2-Dichloroethane-d4	25.0		µg/L	25.0		99.8	70-130			
Surrogate: Toluene-d8	25.2		µg/L	25.0		101	70-130			
Surrogate: 4-Bromofluorobenzene	23.6		µg/L	25.0		94.2	70-130			

LCS (B186621-BS1)

Prepared & Analyzed: 09/20/17

Acetone	61.8	50	µg/L	100		61.8	60-160			†
tert-Amyl Methyl Ether (TAME)	9.53	0.50	µg/L	10.0		95.3	70-130			
Benzene	11.5	1.0	µg/L	10.0		115	37-151			
tert-Butyl Alcohol (TBA)	68.5	20	µg/L	100		68.5	40-160			†
Carbon Tetrachloride	10.8	2.0	µg/L	10.0		108	70-140			
1,2-Dichlorobenzene	11.6	2.0	µg/L	10.0		116	18-190			
1,3-Dichlorobenzene	11.4	2.0	µg/L	10.0		114	59-156			
1,4-Dichlorobenzene	10.8	2.0	µg/L	10.0		108	18-190			
1,2-Dichloroethane	9.40	2.0	µg/L	10.0		94.0	49-155			
cis-1,2-Dichloroethylene	11.0	1.0	µg/L	10.0		110	70-130			
1,1-Dichloroethane	12.3	2.0	µg/L	10.0		123	59-155			
1,1-Dichloroethylene	7.71	2.0	µg/L	10.0		77.1	20-234			
1,4-Dioxane	99.4	50	µg/L	100		99.4	40-130			†
Ethylbenzene	10.9	2.0	µg/L	10.0		109	37-162			
Methyl tert-Butyl Ether (MTBE)	10.6	2.0	µg/L	10.0		106	70-130			
Methylene Chloride	7.28	5.0	µg/L	10.0		72.8	50-221			
Tetrachloroethylene	10.8	2.0	µg/L	10.0		108	64-148			
Toluene	10.5	1.0	µg/L	10.0		105	47-150			
1,1,1-Trichloroethane	10.9	2.0	µg/L	10.0		109	52-162			
1,1,2-Trichloroethane	10.5	2.0	µg/L	10.0		105	52-150			
Trichloroethylene	10.2	2.0	µg/L	10.0		102	71-157			
Vinyl Chloride	2.97	2.0	µg/L	10.0		29.7	20-251			
m+p Xylene	21.8	2.0	µg/L	20.0		109	70-130			

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QUALITY CONTROL
Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B186621 - SW-846 5030B
LCS (B186621-BS1)

Prepared & Analyzed: 09/20/17

o-Xylene	10.6	2.0	µg/L	10.0		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	24.6		µg/L	25.0		98.3	70-130			
Surrogate: Toluene-d8	24.9		µg/L	25.0		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	24.5		µg/L	25.0		98.0	70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186981 - SW-846 3510C										
Blank (B186981-BLK1)				Prepared: 09/20/17 Analyzed: 09/22/17						
Benzo(a)anthracene	ND	0.050	µg/L							
Benzo(a)pyrene	ND	0.10	µg/L							
Benzo(b)fluoranthene	ND	0.050	µg/L							
Benzo(k)fluoranthene	ND	0.20	µg/L							
Bis(2-Ethylhexyl)phthalate	0.13	1.0	µg/L							J
Chrysene	ND	0.20	µg/L							
Dibenz(a,h)anthracene	ND	0.20	µg/L							
Indeno(1,2,3-cd)pyrene	ND	0.20	µg/L							
Pentachlorophenol	ND	1.0	µg/L							
Surrogate: 2-Fluorophenol	77.6		µg/L	200		38.8	15-110			
Surrogate: Phenol-d6	49.0		µg/L	200		24.5	15-110			
Surrogate: Nitrobenzene-d5	69.9		µg/L	100		69.9	30-130			
Surrogate: 2-Fluorobiphenyl	74.5		µg/L	100		74.5	30-130			
Surrogate: 2,4,6-Tribromophenol	130		µg/L	200		65.2	15-110			
Surrogate: p-Terphenyl-d14	70.0		µg/L	100		70.0	30-130			
LCS (B186981-BS1)				Prepared: 09/20/17 Analyzed: 09/22/17						
Benzo(a)anthracene	78.9	1.2	µg/L	100		78.9	40-140			
Benzo(a)pyrene	82.4	2.5	µg/L	100		82.4	40-140			
Benzo(b)fluoranthene	83.2	1.2	µg/L	100		83.2	40-140			
Benzo(k)fluoranthene	80.7	5.0	µg/L	100		80.7	40-140			
Bis(2-Ethylhexyl)phthalate	82.2	25	µg/L	100		82.2	40-140			
Chrysene	78.5	5.0	µg/L	100		78.5	40-140			
Dibenz(a,h)anthracene	74.5	5.0	µg/L	100		74.5	40-140			
Indeno(1,2,3-cd)pyrene	75.2	5.0	µg/L	100		75.2	40-140			
Pentachlorophenol	44.7	25	µg/L	100		44.7	30-130			
Surrogate: 2-Fluorophenol	93.0		µg/L	200		46.5	15-110			
Surrogate: Phenol-d6	59.0		µg/L	200		29.5	15-110			
Surrogate: Nitrobenzene-d5	81.3		µg/L	100		81.3	30-130			
Surrogate: 2-Fluorobiphenyl	83.4		µg/L	100		83.4	30-130			
Surrogate: 2,4,6-Tribromophenol	101		µg/L	200		50.7	15-110			
Surrogate: p-Terphenyl-d14	73.6		µg/L	100		73.6	30-130			
LCS Dup (B186981-BSD1)				Prepared: 09/20/17 Analyzed: 09/22/17						
Benzo(a)anthracene	74.0	1.2	µg/L	100		74.0	40-140	6.44	20	
Benzo(a)pyrene	77.3	2.5	µg/L	100		77.3	40-140	6.39	20	
Benzo(b)fluoranthene	78.4	1.2	µg/L	100		78.4	40-140	5.82	20	
Benzo(k)fluoranthene	75.6	5.0	µg/L	100		75.6	40-140	6.59	20	
Bis(2-Ethylhexyl)phthalate	75.2	25	µg/L	100		75.2	40-140	8.83	20	
Chrysene	73.8	5.0	µg/L	100		73.8	40-140	6.10	20	
Dibenz(a,h)anthracene	69.0	5.0	µg/L	100		69.0	40-140	7.70	20	
Indeno(1,2,3-cd)pyrene	70.6	5.0	µg/L	100		70.6	40-140	6.35	50	‡
Pentachlorophenol	41.7	25	µg/L	100		41.7	30-130	6.95	50	‡
Surrogate: 2-Fluorophenol	90.4		µg/L	200		45.2	15-110			
Surrogate: Phenol-d6	56.4		µg/L	200		28.2	15-110			
Surrogate: Nitrobenzene-d5	73.0		µg/L	100		73.0	30-130			
Surrogate: 2-Fluorobiphenyl	76.3		µg/L	100		76.3	30-130			
Surrogate: 2,4,6-Tribromophenol	102		µg/L	200		50.9	15-110			
Surrogate: p-Terphenyl-d14	66.2		µg/L	100		66.2	30-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186688 - SW-846 3510C										
Blank (B186688-BLK1)				Prepared: 09/20/17 Analyzed: 09/22/17						
Acenaphthene	ND	5.0	µg/L							
Acenaphthylene	ND	5.0	µg/L							
Anthracene	ND	5.0	µg/L							
Benzidine	ND	20	µg/L							V-04
Benzo(g,h,i)perylene	ND	5.0	µg/L							
4-Bromophenylphenylether	ND	10	µg/L							
Butylbenzylphthalate	ND	10	µg/L							
4-Chloro-3-methylphenol	ND	10	µg/L							
Bis(2-chloroethyl)ether	ND	10	µg/L							
Bis(2-chloroisopropyl)ether	ND	10	µg/L							
2-Chloronaphthalene	ND	10	µg/L							L-04
2-Chlorophenol	ND	10	µg/L							
4-Chlorophenylphenylether	ND	10	µg/L							
Di-n-butylphthalate	ND	10	µg/L							
1,3-Dichlorobenzene	ND	5.0	µg/L							
1,4-Dichlorobenzene	ND	5.0	µg/L							
1,2-Dichlorobenzene	ND	5.0	µg/L							
3,3-Dichlorobenzidine	ND	10	µg/L							
2,4-Dichlorophenol	ND	10	µg/L							
Diethylphthalate	ND	10	µg/L							
2,4-Dimethylphenol	ND	10	µg/L							
Dimethylphthalate	ND	10	µg/L							
4,6-Dinitro-2-methylphenol	ND	10	µg/L							V-04, V-20
2,4-Dinitrophenol	ND	10	µg/L							V-19, V-20
2,4-Dinitrotoluene	ND	10	µg/L							
2,6-Dinitrotoluene	ND	10	µg/L							
Di-n-octylphthalate	ND	10	µg/L							
1,2-Diphenylhydrazine (as Azobenzene)	ND	10	µg/L							
Bis(2-Ethylhexyl)phthalate	ND	10	µg/L							
Fluoranthene	ND	5.0	µg/L							
Fluorene	ND	5.0	µg/L							
Hexachlorobenzene	ND	10	µg/L							
Hexachlorobutadiene	ND	10	µg/L							
Hexachlorocyclopentadiene	ND	10	µg/L							
Hexachloroethane	ND	10	µg/L							
Isophorone	ND	10	µg/L							
Naphthalene	ND	5.0	µg/L							
Nitrobenzene	ND	10	µg/L							
2-Nitrophenol	ND	10	µg/L							
4-Nitrophenol	ND	10	µg/L							
N-Nitrosodimethylamine	ND	10	µg/L							
N-Nitrosodiphenylamine	ND	10	µg/L							
N-Nitrosodi-n-propylamine	ND	10	µg/L							
2-Methylnaphthalene	ND	5.0	µg/L							
Phenanthrene	ND	5.0	µg/L							
2-Methylphenol	ND	10	µg/L							
Phenol	ND	10	µg/L							
3/4-Methylphenol	ND	10	µg/L							
Pyrene	ND	5.0	µg/L							
1,2,4-Trichlorobenzene	ND	5.0	µg/L							
2,4,6-Trichlorophenol	ND	10	µg/L							
Surrogate: 2-Fluorophenol	84.2		µg/L	200		42.1	15-110			

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QUALITY CONTROL
Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B186688 - SW-846 3510C
Blank (B186688-BLK1)

Prepared: 09/20/17 Analyzed: 09/22/17

Surrogate: Phenol-d6	63.2		µg/L	200		31.6	15-110			
Surrogate: Nitrobenzene-d5	71.3		µg/L	100		71.3	30-130			
Surrogate: 2-Fluorobiphenyl	66.6		µg/L	100		66.6	30-130			
Surrogate: 2,4,6-Tribromophenol	132		µg/L	200		65.9	15-110			
Surrogate: p-Terphenyl-d14	83.0		µg/L	100		83.0	30-130			

LCS (B186688-BS1)

Prepared: 09/20/17 Analyzed: 09/22/17

Acenaphthene	62.4	5.0	µg/L	100		62.4	47-145			
Acenaphthylene	58.9	5.0	µg/L	100		58.9	33-145			
Anthracene	62.1	5.0	µg/L	100		62.1	27-133			
Benzidine	69.8	20	µg/L	100		69.8	40-140			V-04
Benzo(g,h,i)perylene	57.6	5.0	µg/L	100		57.6	1-219			
4-Bromophenylphenylether	64.8	10	µg/L	100		64.8	53-127			
Butylbenzylphthalate	76.6	10	µg/L	100		76.6	1-152			
4-Chloro-3-methylphenol	70.2	10	µg/L	100		70.2	22-147			
Bis(2-chloroethyl)ether	78.7	10	µg/L	100		78.7	12-158			
Bis(2-chloroisopropyl)ether	85.3	10	µg/L	100		85.3	36-166			
2-Chloronaphthalene	57.4	10	µg/L	100		57.4 *	60-118			L-04
2-Chlorophenol	69.6	10	µg/L	100		69.6	23-134			
4-Chlorophenylphenylether	63.9	10	µg/L	100		63.9	25-158			
Di-n-butylphthalate	70.6	10	µg/L	100		70.6	1-118			
1,3-Dichlorobenzene	66.3	5.0	µg/L	100		66.3	1-172			
1,4-Dichlorobenzene	67.3	5.0	µg/L	100		67.3	20-124			
1,2-Dichlorobenzene	67.9	5.0	µg/L	100		67.9	32-129			
3,3-Dichlorobenzidine	75.8	10	µg/L	100		75.8	1-262			
2,4-Dichlorophenol	68.6	10	µg/L	100		68.6	39-135			
Diethylphthalate	64.6	10	µg/L	100		64.6	1-114			
2,4-Dimethylphenol	65.4	10	µg/L	100		65.4	32-119			
Dimethylphthalate	65.1	10	µg/L	100		65.1	1-112			
4,6-Dinitro-2-methylphenol	86.3	10	µg/L	100		86.3	1-181			V-04, V-20
2,4-Dinitrophenol	84.8	10	µg/L	100		84.8	1-191			V-19, V-20
2,4-Dinitrotoluene	77.4	10	µg/L	100		77.4	39-139			
2,6-Dinitrotoluene	81.1	10	µg/L	100		81.1	50-158			
Di-n-octylphthalate	81.4	10	µg/L	100		81.4	4-146			
1,2-Diphenylhydrazine (as Azobenzene)	74.6	10	µg/L	100		74.6	40-140			
Bis(2-Ethylhexyl)phthalate	75.1	10	µg/L	100		75.1	8-158			
Fluoranthene	63.9	5.0	µg/L	100		63.9	26-137			
Fluorene	60.5	5.0	µg/L	100		60.5	59-121			
Hexachlorobenzene	63.6	10	µg/L	100		63.6	1-152			
Hexachlorobutadiene	58.7	10	µg/L	100		58.7	24-116			
Hexachlorocyclopentadiene	63.2	10	µg/L	100		63.2	40-140			
Hexachloroethane	69.6	10	µg/L	100		69.6	40-113			
Isophorone	77.5	10	µg/L	100		77.5	21-196			
Naphthalene	61.1	5.0	µg/L	100		61.1	21-133			
Nitrobenzene	71.1	10	µg/L	100		71.1	35-180			
2-Nitrophenol	74.9	10	µg/L	100		74.9	29-182			
4-Nitrophenol	36.6	10	µg/L	100		36.6	1-132			
N-Nitrosodimethylamine	44.4	10	µg/L	100		44.4	40-140			
N-Nitrosodiphenylamine	82.3	10	µg/L	100		82.3	40-140			
N-Nitrosodi-n-propylamine	76.4	10	µg/L	100		76.4	1-230			
2-Methylnaphthalene	65.2	5.0	µg/L	100		65.2	40-140			
Phenanthrene	61.9	5.0	µg/L	100		61.9	54-120			

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QUALITY CONTROL
Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186688 - SW-846 3510C										
LCS (B186688-BS1)										
Prepared: 09/20/17 Analyzed: 09/22/17										
2-Methylphenol	67.0	10	µg/L	100		67.0	30-130			
Phenol	34.1	10	µg/L	100		34.1	5-112			
3/4-Methylphenol	63.1	10	µg/L	100		63.1	30-130			
Pyrene	64.6	5.0	µg/L	100		64.6	52-115			
1,2,4-Trichlorobenzene	64.2	5.0	µg/L	100		64.2	44-142			
2,4,6-Trichlorophenol	67.6	10	µg/L	100		67.6	37-144			
Surrogate: 2-Fluorophenol	101		µg/L	200		50.4	15-110			
Surrogate: Phenol-d6	71.3		µg/L	200		35.6	15-110			
Surrogate: Nitrobenzene-d5	78.3		µg/L	100		78.3	30-130			
Surrogate: 2-Fluorobiphenyl	69.2		µg/L	100		69.2	30-130			
Surrogate: 2,4,6-Tribromophenol	142		µg/L	200		70.8	15-110			
Surrogate: p-Terphenyl-d14	73.9		µg/L	100		73.9	30-130			
LCS Dup (B186688-BSD1)										
Prepared: 09/20/17 Analyzed: 09/22/17										
Acenaphthene	56.3	5.0	µg/L	100		56.3	47-145	10.2		
Acenaphthylene	53.7	5.0	µg/L	100		53.7	33-145	9.32		
Anthracene	55.8	5.0	µg/L	100		55.8	27-133	10.7		
Benzidine	56.0	20	µg/L	100		56.0	40-140	21.9		V-04
Benzo(g,h,i)perylene	51.1	5.0	µg/L	100		51.1	1-219	12.0		
4-Bromophenylphenylether	55.2	10	µg/L	100		55.2	53-127	15.9		
Butylbenzylphthalate	62.5	10	µg/L	100		62.5	1-152	20.2		
4-Chloro-3-methylphenol	61.3	10	µg/L	100		61.3	22-147	13.4		
Bis(2-chloroethyl)ether	64.7	10	µg/L	100		64.7	12-158	19.4		
Bis(2-chloroisopropyl)ether	69.8	10	µg/L	100		69.8	36-166	20.0		
2-Chloronaphthalene	53.0	10	µg/L	100		53.0	* 60-118	8.10		L-04
2-Chlorophenol	59.0	10	µg/L	100		59.0	23-134	16.6		
4-Chlorophenylphenylether	56.1	10	µg/L	100		56.1	25-158	12.9		
Di-n-butylphthalate	59.8	10	µg/L	100		59.8	1-118	16.5		
1,3-Dichlorobenzene	56.8	5.0	µg/L	100		56.8	1-172	15.3		
1,4-Dichlorobenzene	56.7	5.0	µg/L	100		56.7	20-124	17.0		
1,2-Dichlorobenzene	57.6	5.0	µg/L	100		57.6	32-129	16.4		
3,3-Dichlorobenzidine	67.9	10	µg/L	100		67.9	1-262	11.0		
2,4-Dichlorophenol	59.2	10	µg/L	100		59.2	39-135	14.7		
Diethylphthalate	56.0	10	µg/L	100		56.0	1-114	14.3		
2,4-Dimethylphenol	57.7	10	µg/L	100		57.7	32-119	12.6		
Dimethylphthalate	58.6	10	µg/L	100		58.6	1-112	10.6		
4,6-Dinitro-2-methylphenol	74.7	10	µg/L	100		74.7	1-181	14.5		V-04, V-20
2,4-Dinitrophenol	81.4	10	µg/L	100		81.4	1-191	4.20		V-19, V-20
2,4-Dinitrotoluene	69.4	10	µg/L	100		69.4	39-139	10.8		
2,6-Dinitrotoluene	72.8	10	µg/L	100		72.8	50-158	10.8		
Di-n-octylphthalate	67.5	10	µg/L	100		67.5	4-146	18.7		
1,2-Diphenylhydrazine (as Azobenzene)	64.8	10	µg/L	100		64.8	40-140	14.2		
Bis(2-Ethylhexyl)phthalate	59.3	10	µg/L	100		59.3	8-158	23.4		
Fluoranthene	60.1	5.0	µg/L	100		60.1	26-137	6.09		
Fluorene	54.9	5.0	µg/L	100		54.9	* 59-121	9.60		L-07
Hexachlorobenzene	55.5	10	µg/L	100		55.5	1-152	13.5		
Hexachlorobutadiene	50.3	10	µg/L	100		50.3	24-116	15.5		
Hexachlorocyclopentadiene	53.9	10	µg/L	100		53.9	40-140	15.7		
Hexachloroethane	58.8	10	µg/L	100		58.8	40-113	16.9		
Isophorone	66.8	10	µg/L	100		66.8	21-196	14.8		
Naphthalene	53.7	5.0	µg/L	100		53.7	21-133	12.8		
Nitrobenzene	62.7	10	µg/L	100		62.7	35-180	12.5		

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QUALITY CONTROL
Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186688 - SW-846 3510C										
LCS Dup (B186688-BSD1)					Prepared: 09/20/17 Analyzed: 09/22/17					
2-Nitrophenol	66.7	10	µg/L	100		66.7	29-182	11.6		
4-Nitrophenol	35.0	10	µg/L	100		35.0	1-132	4.52		
N-Nitrosodimethylamine	40.8	10	µg/L	100		40.8	40-140	8.33		
N-Nitrosodiphenylamine	71.9	10	µg/L	100		71.9	40-140	13.6		
N-Nitrosodi-n-propylamine	62.0	10	µg/L	100		62.0	1-230	20.8		
2-Methylnaphthalene	56.8	5.0	µg/L	100		56.8	40-140	13.8	20	
Phenanthrene	56.1	5.0	µg/L	100		56.1	54-120	9.79		
2-Methylphenol	56.4	10	µg/L	100		56.4	30-130	17.2	20	
Phenol	28.8	10	µg/L	100		28.8	5-112	16.9		
3/4-Methylphenol	52.6	10	µg/L	100		52.6	30-130	18.2	20	
Pyrene	51.8	5.0	µg/L	100		51.8	* 52-115	22.0		L-07
1,2,4-Trichlorobenzene	56.0	5.0	µg/L	100		56.0	44-142	13.7		
2,4,6-Trichlorophenol	60.5	10	µg/L	100		60.5	37-144	11.1		
Surrogate: 2-Fluorophenol	86.4		µg/L	200		43.2	15-110			
Surrogate: Phenol-d6	60.6		µg/L	200		30.3	15-110			
Surrogate: Nitrobenzene-d5	67.7		µg/L	100		67.7	30-130			
Surrogate: 2-Fluorobiphenyl	61.4		µg/L	100		61.4	30-130			
Surrogate: 2,4,6-Tribromophenol	125		µg/L	200		62.5	15-110			
Surrogate: p-Terphenyl-d14	56.3		µg/L	100		56.3	30-130			

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QUALITY CONTROL
Polychlorinated Biphenyls By GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186668 - SW-846 3510C										
Blank (B186668-BLK1)										
Prepared: 09/20/17 Analyzed: 09/21/17										
Aroclor-1016	ND	0.10	µg/L							
Aroclor-1016 [2C]	ND	0.10	µg/L							
Aroclor-1221	ND	0.10	µg/L							
Aroclor-1221 [2C]	ND	0.10	µg/L							
Aroclor-1232	ND	0.10	µg/L							
Aroclor-1232 [2C]	ND	0.10	µg/L							
Aroclor-1242	ND	0.10	µg/L							
Aroclor-1242 [2C]	ND	0.10	µg/L							
Aroclor-1248	ND	0.10	µg/L							
Aroclor-1248 [2C]	ND	0.10	µg/L							
Aroclor-1254	ND	0.10	µg/L							
Aroclor-1254 [2C]	ND	0.10	µg/L							
Aroclor-1260	ND	0.10	µg/L							
Aroclor-1260 [2C]	ND	0.10	µg/L							
Surrogate: Decachlorobiphenyl	1.90		µg/L	2.00		94.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.15		µg/L	2.00		107	30-150			
Surrogate: Tetrachloro-m-xylene	1.93		µg/L	2.00		96.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.92		µg/L	2.00		96.2	30-150			
LCS (B186668-BS1)										
Prepared: 09/20/17 Analyzed: 09/21/17										
Aroclor-1016	0.51	0.20	µg/L	0.500		103	50-114			
Aroclor-1016 [2C]	0.52	0.20	µg/L	0.500		105	50-114			
Aroclor-1260	0.47	0.20	µg/L	0.500		93.8	8-127			
Aroclor-1260 [2C]	0.47	0.20	µg/L	0.500		94.1	8-127			
Surrogate: Decachlorobiphenyl	1.73		µg/L	2.00		86.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.95		µg/L	2.00		97.3	30-150			
Surrogate: Tetrachloro-m-xylene	1.83		µg/L	2.00		91.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.82		µg/L	2.00		91.2	30-150			
LCS Dup (B186668-BSD1)										
Prepared: 09/20/17 Analyzed: 09/21/17										
Aroclor-1016	0.52	0.20	µg/L	0.500		103	50-114	0.301		
Aroclor-1016 [2C]	0.54	0.20	µg/L	0.500		108	50-114	3.01		
Aroclor-1260	0.48	0.20	µg/L	0.500		96.9	8-127	3.22		
Aroclor-1260 [2C]	0.48	0.20	µg/L	0.500		95.2	8-127	1.16		
Surrogate: Decachlorobiphenyl	1.72		µg/L	2.00		85.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.95		µg/L	2.00		97.5	30-150			
Surrogate: Tetrachloro-m-xylene	1.82		µg/L	2.00		90.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.80		µg/L	2.00		90.2	30-150			

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QUALITY CONTROL
Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186543 - EPA 200.8										
Blank (B186543-BLK1)				Prepared: 09/19/17 Analyzed: 09/20/17						
Chromium	ND	10	µg/L							
LCS (B186543-BS1)				Prepared: 09/19/17 Analyzed: 09/20/17						
Chromium	502	100	µg/L	500		100	85-115			
LCS Dup (B186543-BSD1)				Prepared: 09/19/17 Analyzed: 09/20/17						
Chromium	508	100	µg/L	500		102	85-115	1.12	20	
Batch B186577 - EPA 245.1										
Blank (B186577-BLK1)				Prepared: 09/19/17 Analyzed: 09/20/17						
Mercury	ND	0.00010	mg/L							
LCS (B186577-BS1)				Prepared: 09/19/17 Analyzed: 09/20/17						
Mercury	0.00186	0.00010	mg/L	0.00200		92.9	85-115			
LCS Dup (B186577-BSD1)				Prepared: 09/19/17 Analyzed: 09/20/17						
Mercury	0.00190	0.00010	mg/L	0.00200		94.8	85-115	2.03	20	
Batch B186704 - EPA 200.7										
Blank (B186704-BLK1)				Prepared: 09/20/17 Analyzed: 09/21/17						
Iron	ND	0.050	mg/L							
LCS (B186704-BS1)				Prepared: 09/20/17 Analyzed: 09/21/17						
Iron	4.00	0.050	mg/L	4.00		99.9	85-115			
LCS Dup (B186704-BSD1)				Prepared: 09/20/17 Analyzed: 09/21/17						
Iron	4.05	0.050	mg/L	4.00		101	85-115	1.32	20	
Batch B186706 - EPA 200.8										
Blank (B186706-BLK1)				Prepared: 09/20/17 Analyzed: 09/21/17						
Antimony	ND	1.0	µg/L							
Arsenic	ND	1.0	µg/L							
Cadmium	ND	0.20	µg/L							
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							
Nickel	ND	5.0	µg/L							
Selenium	ND	5.0	µg/L							
Silver	ND	0.20	µg/L							
Zinc	ND	20	µg/L							

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QUALITY CONTROL
Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B186706 - EPA 200.8
LCS (B186706-BS1)

Prepared: 09/20/17 Analyzed: 09/21/17

Antimony	518	10	µg/L	500		104	85-115			
Arsenic	521	10	µg/L	500		104	85-115			
Cadmium	508	2.0	µg/L	500		102	85-115			
Copper	998	10	µg/L	1000		99.8	85-115			
Lead	517	5.0	µg/L	500		103	85-115			
Nickel	501	50	µg/L	500		100	85-115			
Selenium	519	50	µg/L	500		104	85-115			
Silver	486	2.0	µg/L	500		97.3	85-115			
Zinc	1070	200	µg/L	1000		107	85-115			

LCS Dup (B186706-BSD1)

Prepared: 09/20/17 Analyzed: 09/21/17

Antimony	533	10	µg/L	500		107	85-115	2.88	20	
Arsenic	543	10	µg/L	500		109	85-115	4.08	20	
Cadmium	524	2.0	µg/L	500		105	85-115	3.03	20	
Copper	1050	10	µg/L	1000		105	85-115	4.73	20	
Lead	537	5.0	µg/L	500		107	85-115	3.90	20	
Nickel	526	50	µg/L	500		105	85-115	4.78	20	
Selenium	544	50	µg/L	500		109	85-115	4.73	20	
Silver	502	2.0	µg/L	500		100	85-115	3.11	20	
Zinc	1110	200	µg/L	1000		111	85-115	3.61	20	

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QUALITY CONTROL
Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186370 - SM21-22 3500 Cr B										
Blank (B186370-BLK1)				Prepared & Analyzed: 09/15/17						
Hexavalent Chromium	ND	0.0040	mg/L							
LCS (B186370-BS1)				Prepared & Analyzed: 09/15/17						
Hexavalent Chromium	0.098	0.0040	mg/L	0.100		97.8	86.6-115			
LCS Dup (B186370-BSD1)				Prepared & Analyzed: 09/15/17						
Hexavalent Chromium	0.10	0.0040	mg/L	0.100		100	86.6-115	2.47	6.61	
Batch B186372 - SM21-22 4500 CL G										
Blank (B186372-BLK1)				Prepared & Analyzed: 09/15/17						
Chlorine, Residual	ND	0.020	mg/L							
LCS (B186372-BS1)				Prepared & Analyzed: 09/15/17						
Chlorine, Residual	1.4	0.020	mg/L	1.30		109	82.5-130			
LCS Dup (B186372-BSD1)				Prepared & Analyzed: 09/15/17						
Chlorine, Residual	1.4	0.020	mg/L	1.30		108	82.5-130	1.17	6.2	
Batch B186410 - SM21-22 2540D										
Blank (B186410-BLK1)				Prepared & Analyzed: 09/18/17						
Total Suspended Solids	ND	2.5	mg/L							
LCS (B186410-BS1)				Prepared & Analyzed: 09/18/17						
Total Suspended Solids	202	10	mg/L	200		101	66.7-117			
Duplicate (B186410-DUP2)				Prepared & Analyzed: 09/18/17						
Total Suspended Solids	22	5.0	mg/L		17			25.6 *	5	R-04
Batch B186770 - EPA 1664B										
Blank (B186770-BLK1)				Prepared & Analyzed: 09/21/17						
Silica Gel Treated HEM (SGT-HEM)	ND	1.4	mg/L							
LCS (B186770-BS1)				Prepared & Analyzed: 09/21/17						
Silica Gel Treated HEM (SGT-HEM)	8.9		mg/L	10.0		89.0	64-132			
Duplicate (B186770-DUP1)				Prepared & Analyzed: 09/21/17						
Silica Gel Treated HEM (SGT-HEM)	ND	1.6	mg/L		ND			NC	18	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL
Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B186770 - EPA 1664B
Matrix Spike (B186770-MS1)
Source: 1710704-02

Prepared & Analyzed: 09/21/17

Silica Gel Treated HEM (SGT-HEM)	87	14	mg/L	100	ND	87.0	64-132			
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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL
Drinking Water Organics EPA 504.1 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B186764 - EPA 504 water
Blank (B186764-BLK1)

Prepared & Analyzed: 09/21/17

1,2-Dibromoethane (EDB)	ND	0.021	µg/L							
1,2-Dibromoethane (EDB) [2C]	ND	0.021	µg/L							

LCS (B186764-BS1)

Prepared & Analyzed: 09/21/17

1,2-Dibromoethane (EDB)	0.168	0.021	µg/L	0.180		93.1	70-130			
1,2-Dibromoethane (EDB) [2C]	0.166	0.021	µg/L	0.180		92.0	70-130			

LCS Dup (B186764-BSD1)

Prepared & Analyzed: 09/21/17

1,2-Dibromoethane (EDB)	0.176	0.021	µg/L	0.183		96.6	70-130	4.89		
1,2-Dibromoethane (EDB) [2C]	0.172	0.021	µg/L	0.183		94.3	70-130	3.73		

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit
DL	Method Detection Limit
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
L-04	Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
R-04	Duplicate relative percent difference (RPD) is a less useful indicator of sample precision for sample results that are <5 times the reporting limit (RL).
V-04	Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria.
V-19	Initial calibration did not meet method specifications. Compound was calibrated using linear regression with correlation coefficient <0.99. Reduced precision and accuracy may be associated with reported result.
V-20	Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 200.7 in Water</i>	
Iron	CT,MA,NH,NY,RI,NC,ME,VA
Hardness	CT,MA,NH,NY,RI,VA
<i>EPA 200.8 in Water</i>	
Antimony	CT,MA,NH,NY,RI,NC,ME,VA
Arsenic	CT,MA,NH,NY,RI,NC,ME,VA
Cadmium	CT,MA,NH,NY,RI,NC,ME,VA
Chromium	CT,MA,NH,NY,RI,NC,ME,VA
Copper	CT,MA,NH,NY,RI,NC,ME,VA
Lead	CT,MA,NH,NY,RI,NC,ME,VA
Nickel	CT,MA,NH,NY,RI,NC,ME,VA
Selenium	CT,MA,NH,NY,RI,NC,ME,VA
Silver	CT,MA,NH,NY,RI,NC,ME,VA
Zinc	CT,MA,NH,NY,RI,NC,ME,VA
<i>EPA 245.1 in Water</i>	
Mercury	CT,MA,NH,RI,NY,NC,ME,VA
<i>EPA 300.0 in Water</i>	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
<i>EPA 608 in Water</i>	
Aroclor-1016	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1016 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1221	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1221 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1232	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1232 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1242	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1242 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1248	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1248 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1254	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1254 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1260	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1260 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
<i>EPA 624 in Water</i>	
Acetone	NH,NY
Benzene	CT,MA,NH,NY,RI,NC,ME,VA
Carbon Tetrachloride	CT,MA,NH,NY,RI,NC,ME,VA
1,2-Dichlorobenzene	CT,MA,NH,NY,RI,NC,ME,VA
1,3-Dichlorobenzene	CT,MA,NH,NY,RI,NC,ME,VA
1,4-Dichlorobenzene	CT,MA,NH,NY,RI,NC,ME,VA
1,2-Dichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
1,1-Dichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
1,1-Dichloroethylene	CT,MA,NH,NY,RI,NC,ME,VA
Ethylbenzene	CT,MA,NH,NY,RI,NC,ME,VA
Methyl tert-Butyl Ether (MTBE)	NH,NY,NC
Methylene Chloride	CT,MA,NH,NY,RI,NC,ME,VA

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 624 in Water</i>	
Naphthalene	NC
Tetrachloroethylene	CT,MA,NH,NY,RI,NC,ME,VA
Toluene	CT,MA,NH,NY,RI,NC,ME,VA
1,2,4-Trichlorobenzene	NC
1,1,1-Trichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
1,1,2-Trichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
Trichloroethylene	CT,MA,NH,NY,RI,NC,ME,VA
Vinyl Chloride	CT,MA,NH,NY,RI,NC,ME,VA
m+p Xylene	CT,MA,NH,NY,RI,NC,VA
o-Xylene	CT,MA,NH,NY,RI,NC,VA
<i>EPA 625 in Water</i>	
Acenaphthene	CT,MA,NH,NY,NC,RI,ME,VA
Acenaphthylene	CT,MA,NH,NY,NC,RI,ME,VA
Anthracene	CT,MA,NH,NY,NC,RI,ME,VA
Benzidine	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(a)anthracene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(a)pyrene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(b)fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(g,h,i)perylene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(k)fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
4-Bromophenylphenylether	CT,MA,NH,NY,NC,RI,ME,VA
Butylbenzylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
4-Chloro-3-methylphenol	CT,MA,NH,NY,NC,RI,VA
Bis(2-chloroethyl)ether	CT,MA,NH,NY,NC,RI,ME,VA
Bis(2-chloroisopropyl)ether	CT,MA,NH,NY,NC,RI,ME,VA
2-Chloronaphthalene	CT,MA,NH,NY,NC,RI,ME,VA
2-Chlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
4-Chlorophenylphenylether	CT,MA,NH,NY,NC,RI,ME,VA
Chrysene	CT,MA,NH,NY,NC,RI,ME,VA
Dibenz(a,h)anthracene	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-butylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
1,3-Dichlorobenzene	MA,NC
1,4-Dichlorobenzene	MA,NC
1,2-Dichlorobenzene	MA,NC
3,3-Dichlorobenzidine	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dichlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
Diethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dimethylphenol	CT,MA,NH,NY,NC,RI,ME,VA
Dimethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
4,6-Dinitro-2-methylphenol	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dinitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dinitrotoluene	CT,MA,NH,NY,NC,RI,ME,VA
2,6-Dinitrotoluene	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-octylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
1,2-Diphenylhydrazine (as Azobenzene)	NC
Bis(2-Ethylhexyl)phthalate	CT,MA,NH,NY,NC,RI,ME,VA

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 625 in Water</i>	
Fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
Fluorene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorobenzene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorobutadiene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorocyclopentadiene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachloroethane	CT,MA,NH,NY,NC,RI,ME,VA
Indeno(1,2,3-cd)pyrene	CT,MA,NH,NY,NC,RI,ME,VA
Isophorone	CT,MA,NH,NY,NC,RI,ME,VA
Naphthalene	CT,MA,NH,NY,NC,RI,ME,VA
Nitrobenzene	CT,MA,NH,NY,NC,RI,ME,VA
2-Nitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
4-Nitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodimethylamine	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodiphenylamine	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodi-n-propylamine	CT,MA,NH,NY,NC,RI,ME,VA
Pentachlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
2-Methylnaphthalene	NC
Phenanthrene	CT,MA,NH,NY,NC,RI,ME,VA
2-Methylphenol	NY,NC
Phenol	CT,MA,NH,NY,NC,RI,ME,VA
3/4-Methylphenol	NY,NC
Pyrene	CT,MA,NH,NY,NC,RI,ME,VA
1,2,4-Trichlorobenzene	CT,MA,NH,NY,NC,RI,ME,VA
2,4,6-Trichlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
2-Fluorophenol	NC
<i>SM19-22 4500 NH3 C in Water</i>	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
<i>SM21-22 2540D in Water</i>	
Total Suspended Solids	CT,MA,NH,NY,RI,NC,ME,VA
<i>SM21-22 3500 Cr B in Water</i>	
Hexavalent Chromium	NY,CT,NH,RI,ME,VA,NC
<i>SM21-22 4500 CL G in Water</i>	
Chlorine, Residual	CT,MA,RI,ME
<i>SW-846 8270D in Water</i>	
Acenaphthene	CT,NY,NC,ME,NH,VA,NJ
Acenaphthylene	CT,NY,NC,ME,NH,VA,NJ
Anthracene	CT,NY,NC,ME,NH,VA,NJ
Benzidine	CT,NY,NC,ME,NH,VA,NJ
Benzo(a)anthracene	CT,NY,NC,ME,NH,VA,NJ
Benzo(a)pyrene	CT,NY,NC,ME,NH,VA,NJ
Benzo(b)fluoranthene	CT,NY,NC,ME,NH,VA,NJ
Benzo(g,h,i)perylene	CT,NY,NC,ME,NH,VA,NJ
Benzo(k)fluoranthene	CT,NY,NC,ME,NH,VA,NJ
Bis(2-chloroethyl)ether	CT,NY,NC,ME,NH,VA,NJ
Bis(2-chloroisopropyl)ether	CT,NY,NC,ME,NH,VA,NJ

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8270D in Water</i>	
Bis(2-Ethylhexyl)phthalate	CT,NY,NC,ME,NH,VA,NJ
4-Bromophenylphenylether	CT,NY,NC,ME,NH,VA,NJ
Butylbenzylphthalate	CT,NY,NC,ME,NH,VA,NJ
4-Chloro-3-methylphenol	CT,NY,NC,ME,NH,VA,NJ
2-Chloronaphthalene	CT,NY,NC,ME,NH,VA,NJ
2-Chlorophenol	CT,NY,NC,ME,NH,VA,NJ
4-Chlorophenylphenylether	CT,NY,NC,ME,NH,VA,NJ
Chrysene	CT,NY,NC,ME,NH,VA,NJ
Dibenz(a,h)anthracene	CT,NY,NC,ME,NH,VA,NJ
Di-n-butylphthalate	CT,NY,NC,ME,NH,VA,NJ
1,2-Dichlorobenzene	CT,NY,NC,ME,NH,VA,NJ
1,3-Dichlorobenzene	CT,NY,NC,ME,NH,VA,NJ
1,4-Dichlorobenzene	CT,NY,NC,ME,NH,VA,NJ
3,3-Dichlorobenzidine	CT,NY,NC,ME,NH,VA,NJ
2,4-Dichlorophenol	CT,NY,NC,ME,NH,VA,NJ
Diethylphthalate	CT,NY,NC,ME,NH,VA,NJ
2,4-Dimethylphenol	CT,NY,NC,ME,NH,VA,NJ
Dimethylphthalate	CT,NY,NC,ME,NH,VA,NJ
4,6-Dinitro-2-methylphenol	CT,NY,NC,ME,NH,VA,NJ
2,4-Dinitrophenol	CT,NY,NC,ME,NH,VA,NJ
2,4-Dinitrotoluene	CT,NY,NC,ME,NH,VA,NJ
2,6-Dinitrotoluene	CT,NY,NC,ME,NH,VA,NJ
Di-n-octylphthalate	CT,NY,NC,ME,NH,VA,NJ
1,2-Diphenylhydrazine (as Azobenzene)	NY,NC,ME
Fluoranthene	CT,NY,NC,ME,NH,VA,NJ
Fluorene	NY,NC,ME,NH,VA,NJ
Hexachlorobenzene	CT,NY,NC,ME,NH,VA,NJ
Hexachlorobutadiene	CT,NY,NC,ME,NH,VA,NJ
Hexachlorocyclopentadiene	CT,NY,NC,ME,NH,VA,NJ
Hexachloroethane	CT,NY,NC,ME,NH,VA,NJ
Indeno(1,2,3-cd)pyrene	CT,NY,NC,ME,NH,VA,NJ
Isophorone	CT,NY,NC,ME,NH,VA,NJ
2-Methylnaphthalene	CT,NY,NC,ME,NH,VA,NJ
2-Methylphenol	CT,NY,NC,NH,VA,NJ
3/4-Methylphenol	CT,NY,NC,NH,VA,NJ
Naphthalene	CT,NY,NC,ME,NH,VA,NJ
Nitrobenzene	CT,NY,NC,ME,NH,VA,NJ
2-Nitrophenol	CT,NY,NC,ME,NH,VA,NJ
4-Nitrophenol	CT,NY,NC,ME,NH,VA,NJ
N-Nitrosodimethylamine	CT,NY,NC,ME,NH,VA,NJ
N-Nitrosodiphenylamine	CT,NY,NC,ME,NH,VA,NJ
N-Nitrosodi-n-propylamine	CT,NY,NC,ME,NH,VA,NJ
Pentachlorophenol	CT,NY,NC,ME,NH,VA,NJ
Phenanthrene	CT,NY,NC,ME,NH,VA,NJ
Phenol	CT,NY,NC,ME,NH,VA,NJ
Pyrene	CT,NY,NC,ME,NH,VA,NJ
1,2,4-Trichlorobenzene	CT,NY,NC,ME,NH,VA,NJ

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8270D in Water	
2,4,6-Trichlorophenol	CT,NY,NC,ME,NH,VA,NJ
2-Fluorophenol	NC,VA
Phenol-d6	VA
Nitrobenzene-d5	VA
SW-846 9014 in Water	
Cyanide	NY,CT,NH,NC,ME,VA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	02/1/2018
MA	Massachusetts DEP	M-MA100	06/30/2018
CT	Connecticut Department of Public Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2018
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2018
RI	Rhode Island Department of Health	LAO00112	12/30/2017
NC	North Carolina Div. of Water Quality	652	12/31/2017
NJ	New Jersey DEP	MA007 NELAP	06/30/2018
FL	Florida Department of Health	E871027 NELAP	06/30/2018
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2018
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2017
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2017
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2018
NC-DW	North Carolina Department of Health	25703	07/31/2018



Phone: 413-525-2332

Fax: 413-525-6405

Email: info@contestlabs.com

Varex

Boston, MA

Company Name:

Address:

Phone:

Project Name:

Project Location:

Project Number:

Project Manager:

Con-Test Quote Name/Number:

Invoice Recipient:

Sampled By:

Con-Test Work Order #

Client Sample ID / Description

Beginning Date/Time

Ending Date/Time

Composite

Grab

Matrix Code

Conc Code

Request Turnaround Time

Due Date:

Rush Approval Required

Data Delivery

Format: PDF

Other: EXCEL

CLP Like Data Pkg Required:

Email To:

Fax To #:

Hardness

MTRC

TRC

TPH, TSS, TRC

Chloride, total metals

to/hex chromium

cyanide, ethanal

Amenity, EOB, PAH

625, 624, PCBs

ANALYSIS REQUESTED

Dissolved Metals Samples

Field Filtered

Lab to Filter

Orthophosphate Samples

Field Filtered

Lab to Filter

7-Day

Due Date:

1-Day

2-Day

3-Day

4-Day

Data Delivery

Format: PDF

Other: EXCEL

CLP Like Data Pkg Required:

Email To:

Fax To #:

Hardness

MTRC

TRC

TPH, TSS, TRC

Chloride, total metals

to/hex chromium

cyanide, ethanal

Amenity, EOB, PAH

625, 624, PCBs

ANALYSIS REQUESTED

Dissolved Metals Samples

Field Filtered

Lab to Filter

Orthophosphate Samples

Field Filtered

Lab to Filter

Matrix Codes:

GW = Ground Water

WW = Waste Water

DW = Drinking Water

A = Air

S = Soil

SL = Sludge

SOL = Solid

O = Other (please define)

Matrix Code

Preservation Codes:

I = Iced

H = HCL

M = Methanol

N = Nitric Acid

S = Sulfuric Acid

B = Sodium Bisulfate

X = Sodium Hydroxide

T = Sodium

Thiosulfate

O = Other (please define)

Container Codes:

A = Amber Glass

G = Glass

P = Plastic

ST = Sterile

V = Vial

S = Summa Canister

T = Tedlar Bag

O = Other (please define)

PCB ONLY

Soxhlet

Non Soxhlet

Comments:

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)

Date/Time:

Received by: (signature)

Date/Time:

Relinquished by: (signature)

Date/Time:

Received by: (signature)

Date/Time:

Relinquished by: (signature)

Date/Time:

Received by: (signature)

Date/Time:

Relinquished by: (signature)

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Detection Limit Requirements

MA

CT

Other

MA MCP Required

MCP Certification Form Required

CT RCP Required

RCP Certification Form Required

MA State BW Required

PMSID #

Project Entity

Government

Federal

City

Municipality

21 J

Brownfield

MWRA

School

MBTA

WRTA

Chromatogram

AIHA-LAP, LLC



www.contestlabs.com

NELAP and AIHA-LAP, LLC Accredited

Other

Chromatogram

AIHA-LAP, LLC

39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.contestlabs.com



con-test®
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Vertex

Received By A.F Date 9/15/17 Time 2030

How were the samples received? In Cooler T No Cooler On Ice T No Ice
Direct from Sampling Ambient Melted Ice

Were samples within Temperature? 2-6°C T By Gun # 1 Actual Temp - 4.2
By Blank # Actual Temp -

Was Custody Seal Intact? N/A Were Samples Tampered with? N/A

Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project F ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? N/A Who was notified? N/A

Are there Rushes? N/A Who was notified? N/A

Are there Short Holds? T Who was notified? David

Is there enough Volume? T

Is there Headspace where applicable? T

Proper Media/Containers Used? T MS/MSD? N/A

Were trip blanks received? T Is splitting samples required? N/A

Do all samples have the proper pH? On COC? T Acid T Base T

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.	<u>10</u>	1 Liter Plastic	<u>1</u>	16 oz Amb.	
HCL-	<u>10</u>	500 mL Amb.		500 mL Plastic	<u>2</u>	8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	<u>3</u>	4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-	<u>5</u>	SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:



CERTIFICATE OF ANALYSIS

Jesse Freeman
The Vertex Companies
1 Congress St
Boston, MA 02114

RE: 1 Congress St - NPDES (20026)
ESS Laboratory Work Order Number: 1606245

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

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 3:28 pm, Jun 21, 2016

Analytical Summary

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

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



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

SAMPLE RECEIPT

The following samples were received on June 09, 2016 for the analyses specified on the enclosed Chain of Custody Record.

The samples and analyses listed below were analyzed in accordance with the Guidelines Establishing Test Procedures for the Analysis of Pollutants, 40 CFR Part 136, as amended.

Lab Number	Sample Name	Matrix	Analysis
1606245-01	NPDES-T2-100	Waste Water	1664A, 245.1, 2540D, 420.1, 4500 CN CE, 4500-Cl E, 504.1, 6010C, 608, 624, 7010, 7196A, 8270D, 8270D SIM



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

PROJECT NARRATIVE

608 Polychlorinated Biphenyls (PCB)

1606245-01 Surrogate recovery(ies) outside of criteria. Reextraction/Reanalysis confirms results (SC).
Decachlorobiphenyl (20% @ 30-150%), Decachlorobiphenyl [2C] (12% @ 30-150%)

608/6630C Organochlorine Pesticides

1606245-01 Percent difference between primary and confirmation results exceeds 40% (P).
Endosulfan I [2C]

1606245-01 Surrogate recovery(ies) outside of criteria. Reextraction/Reanalysis confirms results (SC).
Decachlorobiphenyl (11% @ 30-150%)

CF61439-BSD1 Relative percent difference for duplicate is outside of criteria (D+).
Endrin Aldehyde (22% @ 20%)

CZF0252-CCV3 Continuing Calibration %Diff/Drift is above control limit (CD+).
Decachlorobiphenyl [2C] (16% @ 15%), delta-BHC [2C] (18% @ 15%), Endosulfan Sulfate [2C] (17% @ 15%), Methoxychlor [2C] (36% @ 15%)

624 Volatile Organic Compounds

CF61028-BSD1 Blank Spike recovery is below lower control limit (B-).
Acrolein - Screen (29% @ 70-130%)

CF61028-BSD1 Relative percent difference for duplicate is outside of criteria (D+).
Acrolein - Screen (88% @ 25%), Tetrachloroethene (32% @ 25%)

8270C Semi-Volatile Organic Compounds

CZF0245-CCV1 Calibration required quadratic regression (Q).
2,4-Dinitrophenol (88% @ 80-120%), Di-n-octylphthalate (92% @ 80-120%)

CZF0247-CCV1 Calibration required quadratic regression (Q).
2,4-Dinitrophenol (98% @ 80-120%), Di-n-octylphthalate (89% @ 80-120%)

8270D(SIM) Semi-Volatile Organic Compounds

CZF0248-CCV1 Calibration required quadratic regression (Q).
Pentachlorophenol (120% @ 80-120%)

CZF0248-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).
2,4,6-Tribromophenol (32% @ 20%)

Classical Chemistry

1606245-01 The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.

CF61020-BLK1 The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.

CF61020-BS1 The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)
[Semivolatile Organics Internal Standard Information](#)
[Semivolatile Organics Surrogate Information](#)
[Volatile Organics Internal Standard Information](#)
[Volatile Organics Surrogate Information](#)
[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015D - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L

Extraction Method: 3005A

All methods used are in accordance with 40 CFR 136.

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (10.0)		7010		1	KJK	06/15/16 12:26	50	50	CF61019
Arsenic	ND (10.0)		7010		1	KJK	06/16/16 16:52	50	50	CF61019
Cadmium	ND (1.0)		7010		1	KJK	06/17/16 14:34	50	50	CF61019
Chromium	ND (20.0)		6010C		1	KJK	06/10/16 19:28	50	50	CF61019
Chromium III	ND (20)		6010C		1	MJV	06/10/16 19:28	1	1	[CALC]
Copper	55.6 (10.0)		6010C		1	KJK	06/10/16 19:28	50	50	CF61019
Iron	6910 (100)		6010C		1	KJK	06/10/16 19:28	50	50	CF61019
Lead	10.0 (5.0)		7010		1	KJK	06/15/16 2:03	50	50	CF61019
Mercury	ND (0.20)		245.1		1	AA	06/10/16 12:26	20	40	CF60908
Nickel	ND (20.0)		6010C		1	KJK	06/10/16 19:28	50	50	CF61019
Selenium	ND (10.0)		7010		1	KJK	06/14/16 21:35	50	50	CF61019
Silver	ND (0.5)		7010		1	DEL	06/20/16 13:37	50	50	CF61019
Zinc	ND (50.0)		6010C		1	KJK	06/10/16 19:28	50	50	CF61019



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: TJ
Prepared: 6/10/16 11:10

All methods used are in accordance with 40 CFR 136.

608 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1221	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1232	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1242	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1248	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1254	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1260	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1262	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1268	ND (0.09)		608		1	06/10/16 17:33		CF61011

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: Decachlorobiphenyl	20 %	SC	30-150
Surrogate: Decachlorobiphenyl [2C]	12 %	SC	30-150
Surrogate: Tetrachloro-m-xylene	66 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	97 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: TJ
Prepared: 6/14/16 15:32

All methods used are in accordance with 40 CFR 136.

608/6630C Organochlorine Pesticides

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
4,4'-DDD	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
4,4'-DDE	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
4,4'-DDT	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Aldrin	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
alpha-BHC	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
beta-BHC	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Chlordane (Total)	ND (0.47)		608		1	06/14/16 22:42	CZF0252	CF61439
delta-BHC	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Dieldrin	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Endosulfan I [2C]	P 0.12 (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Endosulfan II	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Endosulfan Sulfate	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Endrin	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Endrin Aldehyde	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
gamma-BHC (Lindane)	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Heptachlor	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Heptachlor Epoxide	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Methoxychlor	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Toxaphene	ND (1.21)		608		1	06/14/16 22:42	CZF0252	CF61439

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	11 %	SC	30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	59 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies

Client Project ID: 1 Congress St - NPDES

Client Sample ID: NPDES-T2-100

Date Sampled: 06/09/16 12:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1606245

ESS Laboratory Sample ID: 1606245-01

Sample Matrix: Waste Water

Units: ug/L

Analyst: GEM

All methods used are in accordance with 40 CFR 136.

624 Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1-Trichloroethane	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,1,2,2-Tetrachloroethane	ND (0.5)		624		1	06/10/16 14:35	CZF0192	CF61028
1,1,2-Trichloroethane	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,1-Dichloroethane	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,1-Dichloroethene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,2-Dichlorobenzene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,2-Dichloroethane	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,2-Dichloropropane	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,3-Dichlorobenzene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,4-Dichlorobenzene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
2-Chloroethyl vinyl ether	ND (10.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Acrolein - Screen	ND (5.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Acrylonitrile - Screen	ND (5.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Benzene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Bromodichloromethane	1.2 (0.6)		624		1	06/10/16 14:35	CZF0192	CF61028
Bromoform	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Bromomethane	ND (2.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Carbon Tetrachloride	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Chlorobenzene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Chloroethane	ND (2.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Chloroform	3.9 (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Chloromethane	ND (2.0)		624		1	06/10/16 14:35	CZF0192	CF61028
cis-1,2-Dichloroethene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
cis-1,3-Dichloropropene	ND (0.4)		624		1	06/10/16 14:35	CZF0192	CF61028
Dibromochloromethane	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Ethylbenzene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Methylene Chloride	ND (4.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Tetrachloroethene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Toluene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
trans-1,2-Dichloroethene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
trans-1,3-Dichloropropene	ND (0.5)		624		1	06/10/16 14:35	CZF0192	CF61028
Trichloroethene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: GEM

All methods used are in accordance with 40 CFR 136.

624 Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Trichlorofluoromethane	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Vinyl Chloride	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	98 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	107 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	99 %		70-130
<i>Surrogate: Toluene-d8</i>	93 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 1030
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: IBM
Prepared: 6/13/16 19:04

All methods used are in accordance with 40 CFR 136.

8270C Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,2,4-Trichlorobenzene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
1,2-Dichlorobenzene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
1,3-Dichlorobenzene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
1,4-Dichlorobenzene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2,4,5-Trichlorophenol	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2,4,6-Trichlorophenol	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2,4-Dichlorophenol	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2,4-Dimethylphenol	ND (48.5)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2,4-Dinitrophenol	ND (48.5)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2,4-Dinitrotoluene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2,6-Dinitrotoluene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2-Chloronaphthalene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2-Chlorophenol	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2-Methylphenol	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2-Nitrophenol	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
3,3'-Dichlorobenzidine	ND (19.4)		8270D		1	06/15/16 8:29	CZF0247	CF61340
3+4-Methylphenol	ND (19.4)		8270D		1	06/15/16 8:29	CZF0247	CF61340
4-Bromophenyl-phenylether	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
4-Chloroaniline	ND (19.4)		8270D		1	06/15/16 8:29	CZF0247	CF61340
4-Nitrophenol	ND (48.5)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Acetophenone	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Aniline	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Azobenzene	ND (19.4)		8270D		1	06/15/16 8:29	CZF0247	CF61340
bis(2-Chloroethoxy)methane	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
bis(2-Chloroethyl)ether	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
bis(2-chloroisopropyl)Ether	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
bis(2-Ethylhexyl)phthalate	230 (5.8)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Butylbenzylphthalate	11.7 (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Dibenzofuran	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Diethylphthalate	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Dimethylphthalate	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Di-n-butylphthalate	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 1030
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: IBM
Prepared: 6/13/16 19:04

All methods used are in accordance with 40 CFR 136.

8270C Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Di-n-octylphthalate	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Hexachlorobutadiene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Hexachloroethane	ND (4.9)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Isophorone	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Nitrobenzene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
N-Nitrosodimethylamine	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Phenol	14.5 (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	49 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	43 %		15-110
<i>Surrogate: 2-Chlorophenol-d4</i>	45 %		15-110
<i>Surrogate: 2-Fluorobiphenyl</i>	47 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	35 %		15-110
<i>Surrogate: Nitrobenzene-d5</i>	51 %		30-130
<i>Surrogate: Phenol-d6</i>	46 %		15-110
<i>Surrogate: p-Terphenyl-d14</i>	55 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 1030
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: IBM
Prepared: 6/13/16 19:04

All methods used are in accordance with 40 CFR 136.

8270D(SIM) Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Acenaphthene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Acenaphthylene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Anthracene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Benzo(a)anthracene	ND (0.97)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Benzo(a)pyrene	ND (0.97)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Benzo(b)fluoranthene	ND (0.97)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Benzo(g,h,i)perylene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Benzo(k)fluoranthene	ND (0.97)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Chrysene	ND (0.97)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Dibenzo(a,h)Anthracene	ND (0.97)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Fluoranthene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Fluorene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Hexachlorobenzene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Indeno(1,2,3-cd)Pyrene	ND (0.97)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Naphthalene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Pentachlorophenol	ND (17.5)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Phenanthrene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Pyrene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340

%Recovery

Qualifier

Limits



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Hexavalent Chromium	ND (10)		7196A		1	MJV	06/09/16 18:55	ug/L	CF60951
Phenols	ND (100)		420.1		1	EEM	06/16/16 13:35	ug/L	CF61630
Total Cyanide (LL)	ND (5.00)		4500 CN CE		1	EEM	06/16/16 11:40	ug/L	CF61628
Total Petroleum Hydrocarbon	169 (5)		1664A		1	CRR	06/15/16 14:52	mg/L	CF61440
Total Residual Chlorine	280 (10)		4500-Cl E		1	EEM	06/10/16 11:20	ug/L	CF61020
Total Suspended Solids	178 (10)		2540D		1	JLK	06/14/16 21:07	mg/L	CF61427



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 35
Final Volume: 2
Extraction Method: 504/8011

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: JXS
Prepared: 6/13/16 11:00

All methods used are in accordance with 40 CFR 136.

504.1 1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,2-Dibromoethane	ND (0.015)		504.1		1	06/13/16 14:03		CF61311
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: Pentachloroethane</i>		<i>107 %</i>		<i>30-150</i>				
<i>Surrogate: Pentachloroethane [2C]</i>		<i>107 %</i>		<i>30-150</i>				



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CF60908 - 245.1/7470A

Blank

Mercury	ND	0.20	ug/L
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Blank

Mercury	ND	0.20	ug/L
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Blank

Mercury	ND	0.20	ug/L
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LCS

Mercury	5.92	0.20	ug/L	6.000	99	85-115
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LCS Dup

Mercury	5.85	0.20	ug/L	6.000	97	85-115	1	20
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Batch CF60951 - [CALC]

Blank

Chromium III	ND	10	ug/L
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LCS

Chromium III	ND		ug/L
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LCS Dup

Chromium III	ND		ug/L
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Batch CF61019 - 3005A

Blank

Antimony	ND	10.0	ug/L
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Arsenic	ND	10.0	ug/L
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Cadmium	ND	1.0	ug/L
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Chromium	ND	20.0	ug/L
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Chromium III	ND	20	ug/L
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Copper	ND	10.0	ug/L
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Iron	ND	100	ug/L
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Lead	ND	5.0	ug/L
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Nickel	ND	20.0	ug/L
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Selenium	ND	10.0	ug/L
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Silver	ND	0.5	ug/L
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Silver	ND	5.0	ug/L
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Zinc	ND	50.0	ug/L
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LCS

Antimony	464	250	ug/L	500.0	93	80-120
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Arsenic	578	250	ug/L	500.0	116	80-120
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Cadmium	253	500	ug/L	250.0	101	80-120
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Chromium	503	20.0	ug/L	500.0	101	80-120
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Chromium III	503	20	ug/L			
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Copper	479	10.0	ug/L	500.0	96	80-120
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Iron	2510	100	ug/L	2500	100	80-120
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Lead	493	125	ug/L	500.0	99	80-120
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Nickel	496	20.0	ug/L	500.0	99	80-120
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Selenium	1030	250	ug/L	1000	103	80-120
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CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CF61019 - 3005A

Silver	249	5.0	ug/L	250.0		100	80-120			
Silver	271	50.0	ug/L	250.0		108	80-120			
Zinc	563	50.0	ug/L	500.0		113	80-120			

LCS Dup

Antimony	469	250	ug/L	500.0		94	80-120	1	20	
Arsenic	586	250	ug/L	500.0		117	80-120	1	20	
Cadmium	263	500	ug/L	250.0		105	80-120	4	20	
Chromium	492	20.0	ug/L	500.0		98	80-120	2	20	
Chromium III	492	20	ug/L							
Copper	473	10.0	ug/L	500.0		95	80-120	1	20	
Iron	2470	100	ug/L	2500		99	80-120	2	20	
Lead	496	125	ug/L	500.0		99	80-120	0.5	20	
Nickel	489	20.0	ug/L	500.0		98	80-120	2	20	
Selenium	1060	250	ug/L	1000		106	80-120	2	20	
Silver	244	5.0	ug/L	250.0		98	80-120	2	20	
Silver	268	50.0	ug/L	250.0		107	80-120	1	20	
Zinc	493	50.0	ug/L	500.0		99	80-120	13	20	

608 Polychlorinated Biphenyls (PCB)

Batch CF61011 - 3510C

Blank

Aroclor 1016	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							

Surrogate: Decachlorobiphenyl	0.0300		ug/L	0.05000		60	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0401		ug/L	0.05000		80	30-150			
Surrogate: Tetrachloro-m-xylene	0.0181		ug/L	0.05000		36	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0210		ug/L	0.05000		42	30-150			

LCS

Aroclor 1016	0.62	0.10	ug/L	1.000		62	40-140			
Aroclor 1260	0.71	0.10	ug/L	1.000		71	40-140			

Surrogate: Decachlorobiphenyl	0.0346		ug/L	0.05000		69	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0395		ug/L	0.05000		79	30-150			
Surrogate: Tetrachloro-m-xylene	0.0211		ug/L	0.05000		42	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0229		ug/L	0.05000		46	30-150			

LCS Dup

Aroclor 1016	0.65	0.10	ug/L	1.000		65	40-140	4	50	
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CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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608 Polychlorinated Biphenyls (PCB)

Batch CF61011 - 3510C

Aroclor 1260	0.72	0.10	ug/L	1.000		72	40-140	2	50	
Surrogate: Decachlorobiphenyl	0.0343		ug/L	0.05000		69	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0410		ug/L	0.05000		82	30-150			
Surrogate: Tetrachloro-m-xylene	0.0211		ug/L	0.05000		42	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0231		ug/L	0.05000		46	30-150			

608/6630C Organochlorine Pesticides

Batch CF61439 - 3510C

Blank										
4,4'-DDD	ND	0.05	ug/L							
4,4'-DDD [2C]	ND	0.05	ug/L							
4,4'-DDE	ND	0.05	ug/L							
4,4'-DDE [2C]	ND	0.05	ug/L							
4,4'-DDT	ND	0.05	ug/L							
4,4'-DDT [2C]	ND	0.05	ug/L							
Aldrin	ND	0.05	ug/L							
Aldrin [2C]	ND	0.05	ug/L							
alpha-BHC	ND	0.05	ug/L							
alpha-BHC [2C]	ND	0.05	ug/L							
beta-BHC	ND	0.05	ug/L							
beta-BHC [2C]	ND	0.05	ug/L							
Chlordane (Total)	ND	0.50	ug/L							
Chlordane (Total) [2C]	ND	0.50	ug/L							
delta-BHC	ND	0.05	ug/L							
delta-BHC [2C]	ND	0.05	ug/L							
Dieldrin	ND	0.05	ug/L							
Dieldrin [2C]	ND	0.05	ug/L							
Endosulfan I	ND	0.05	ug/L							
Endosulfan I [2C]	ND	0.05	ug/L							
Endosulfan II	ND	0.05	ug/L							
Endosulfan II [2C]	ND	0.05	ug/L							
Endosulfan Sulfate	ND	0.05	ug/L							
Endosulfan Sulfate [2C]	ND	0.05	ug/L							
Endrin	ND	0.05	ug/L							
Endrin [2C]	ND	0.05	ug/L							
Endrin Aldehyde	ND	0.05	ug/L							
Endrin Aldehyde [2C]	ND	0.05	ug/L							
gamma-BHC (Lindane)	ND	0.05	ug/L							
gamma-BHC (Lindane) [2C]	ND	0.05	ug/L							
Heptachlor	ND	0.05	ug/L							
Heptachlor [2C]	ND	0.05	ug/L							
Heptachlor Epoxide	ND	0.05	ug/L							
Heptachlor Epoxide [2C]	ND	0.05	ug/L							
Methoxychlor	ND	0.05	ug/L							



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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608/6630C Organochlorine Pesticides

Batch CF61439 - 3510C

Methoxychlor [2C]	ND	0.05	ug/L							
Toxaphene	ND	1.30	ug/L							
Toxaphene [2C]	ND	1.30	ug/L							
Surrogate: Decachlorobiphenyl	0.182		ug/L	0.2500		73	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.253		ug/L	0.2500		101	30-150			
Surrogate: Tetrachloro-m-xylene	0.0957		ug/L	0.2500		38	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0935		ug/L	0.2500		37	30-150			

LCS

4,4'-DDD	0.24	0.05	ug/L	0.2500		98	40-140			
4,4'-DDD [2C]	0.22	0.05	ug/L	0.2500		87	40-140			
4,4'-DDE	0.23	0.05	ug/L	0.2500		92	40-140			
4,4'-DDE [2C]	0.24	0.05	ug/L	0.2500		94	40-140			
4,4'-DDT	0.23	0.05	ug/L	0.2500		93	40-140			
4,4'-DDT [2C]	0.25	0.05	ug/L	0.2500		102	40-140			
Aldrin	0.14	0.05	ug/L	0.2500		56	40-140			
Aldrin [2C]	0.14	0.05	ug/L	0.2500		56	40-140			
alpha-BHC	0.24	0.05	ug/L	0.2500		94	40-140			
alpha-BHC [2C]	0.23	0.05	ug/L	0.2500		92	40-140			
beta-BHC	0.23	0.05	ug/L	0.2500		93	40-140			
beta-BHC [2C]	0.25	0.05	ug/L	0.2500		101	40-140			
delta-BHC	0.23	0.05	ug/L	0.2500		93	40-140			
delta-BHC [2C]	0.26	0.05	ug/L	0.2500		105	40-140			
Dieldrin	0.25	0.05	ug/L	0.2500		100	40-140			
Dieldrin [2C]	0.28	0.05	ug/L	0.2500		110	40-140			
Endosulfan I	0.24	0.05	ug/L	0.2500		94	40-140			
Endosulfan I [2C]	0.25	0.05	ug/L	0.2500		99	40-140			
Endosulfan II	0.23	0.05	ug/L	0.2500		93	40-140			
Endosulfan II [2C]	0.25	0.05	ug/L	0.2500		100	40-140			
Endosulfan Sulfate	0.24	0.05	ug/L	0.2500		95	40-140			
Endosulfan Sulfate [2C]	0.31	0.05	ug/L	0.2500		122	40-140			
Endrin	0.26	0.05	ug/L	0.2500		104	40-140			
Endrin [2C]	0.28	0.05	ug/L	0.2500		110	40-140			
Endrin Aldehyde	0.24	0.05	ug/L	0.2500		95	40-140			
Endrin Aldehyde [2C]	0.23	0.05	ug/L	0.2500		92	40-140			
gamma-BHC (Lindane)	0.24	0.05	ug/L	0.2500		97	40-140			
gamma-BHC (Lindane) [2C]	0.26	0.05	ug/L	0.2500		105	40-140			
Heptachlor	0.16	0.05	ug/L	0.2500		64	40-140			
Heptachlor [2C]	0.17	0.05	ug/L	0.2500		67	40-140			
Heptachlor Epoxide	0.25	0.05	ug/L	0.2500		99	40-140			
Heptachlor Epoxide [2C]	0.26	0.05	ug/L	0.2500		104	40-140			
Methoxychlor	0.26	0.05	ug/L	0.2500		103	40-140			
Methoxychlor [2C]	0.31	0.05	ug/L	0.2500		125	40-140			

Surrogate: Decachlorobiphenyl	0.185		ug/L	0.2500		74	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.225		ug/L	0.2500		90	30-150			



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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608/6630C Organochlorine Pesticides

Batch CF61439 - 3510C

Surrogate: Tetrachloro-m-xylene	0.139		ug/L	0.2500		55	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.126		ug/L	0.2500		50	30-150			
LCS Dup										
4,4'-DDD	0.22	0.05	ug/L	0.2500		86	40-140	13	20	
4,4'-DDD [2C]	0.20	0.05	ug/L	0.2500		80	40-140	9	20	
4,4'-DDE	0.21	0.05	ug/L	0.2500		82	40-140	12	20	
4,4'-DDE [2C]	0.20	0.05	ug/L	0.2500		81	40-140	15	20	
4,4'-DDT	0.20	0.05	ug/L	0.2500		80	40-140	15	20	
4,4'-DDT [2C]	0.22	0.05	ug/L	0.2500		86	40-140	17	20	
Aldrin	0.14	0.05	ug/L	0.2500		57	40-140	2	20	
Aldrin [2C]	0.14	0.05	ug/L	0.2500		56	40-140	0.2	20	
alpha-BHC	0.21	0.05	ug/L	0.2500		83	40-140	13	20	
alpha-BHC [2C]	0.20	0.05	ug/L	0.2500		79	40-140	15	20	
beta-BHC	0.20	0.05	ug/L	0.2500		81	40-140	14	20	
beta-BHC [2C]	0.22	0.05	ug/L	0.2500		87	40-140	15	20	
delta-BHC	0.20	0.05	ug/L	0.2500		81	40-140	15	20	
delta-BHC [2C]	0.22	0.05	ug/L	0.2500		88	40-140	18	20	
Dieldrin	0.21	0.05	ug/L	0.2500		86	40-140	16	20	
Dieldrin [2C]	0.23	0.05	ug/L	0.2500		92	40-140	18	20	
Endosulfan I	0.20	0.05	ug/L	0.2500		79	40-140	18	20	
Endosulfan I [2C]	0.21	0.05	ug/L	0.2500		82	40-140	19	20	
Endosulfan II	0.20	0.05	ug/L	0.2500		81	40-140	13	20	
Endosulfan II [2C]	0.21	0.05	ug/L	0.2500		85	40-140	16	20	
Endosulfan Sulfate	0.20	0.05	ug/L	0.2500		78	40-140	19	20	
Endosulfan Sulfate [2C]	0.26	0.05	ug/L	0.2500		103	40-140	17	20	
Endrin	0.22	0.05	ug/L	0.2500		89	40-140	16	20	
Endrin [2C]	0.23	0.05	ug/L	0.2500		92	40-140	18	20	
Endrin Aldehyde	0.19	0.05	ug/L	0.2500		77	40-140	22	20	D+
Endrin Aldehyde [2C]	0.19	0.05	ug/L	0.2500		77	40-140	18	20	
gamma-BHC (Lindane)	0.21	0.05	ug/L	0.2500		84	40-140	15	20	
gamma-BHC (Lindane) [2C]	0.22	0.05	ug/L	0.2500		89	40-140	17	20	
Heptachlor	0.16	0.05	ug/L	0.2500		62	40-140	3	20	
Heptachlor [2C]	0.16	0.05	ug/L	0.2500		64	40-140	5	20	
Heptachlor Epoxide	0.21	0.05	ug/L	0.2500		86	40-140	14	20	
Heptachlor Epoxide [2C]	0.22	0.05	ug/L	0.2500		87	40-140	17	20	
Methoxychlor	0.22	0.05	ug/L	0.2500		89	40-140	15	20	
Methoxychlor [2C]	0.27	0.05	ug/L	0.2500		106	40-140	16	20	
Surrogate: Decachlorobiphenyl	0.136		ug/L	0.2500		54	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.171		ug/L	0.2500		68	30-150			
Surrogate: Tetrachloro-m-xylene	0.116		ug/L	0.2500		47	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.110		ug/L	0.2500		44	30-150			

624 Volatile Organic Compounds



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
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ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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624 Volatile Organic Compounds

Batch CF61028 - 5030B

Blank

1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
1,1-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	1.0	ug/L							
1,2-Dichlorobenzene	ND	1.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,2-Dichloropropane	ND	1.0	ug/L							
1,3-Dichlorobenzene	ND	1.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
2-Chloroethyl vinyl ether	ND	10.0	ug/L							
Acrolein - Screen	ND	5.0	ug/L							
Acrylonitrile - Screen	ND	5.0	ug/L							
Benzene	ND	1.0	ug/L							
Bromodichloromethane	ND	0.6	ug/L							
Bromoform	ND	1.0	ug/L							
Bromomethane	ND	2.0	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
Chlorobenzene	ND	1.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	1.0	ug/L							
Chloromethane	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	1.0	ug/L							
cis-1,3-Dichloropropene	ND	0.4	ug/L							
Dibromochloromethane	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Methylene Chloride	ND	4.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Toluene	ND	1.0	ug/L							
trans-1,2-Dichloroethene	ND	1.0	ug/L							
trans-1,3-Dichloropropene	ND	0.5	ug/L							
Trichloroethene	ND	1.0	ug/L							
Trichlorofluoromethane	ND	1.0	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	23.6		ug/L	25.00		94	70-130			
Surrogate: 4-Bromofluorobenzene	26.6		ug/L	25.00		106	70-130			
Surrogate: Dibromofluoromethane	24.7		ug/L	25.00		99	70-130			
Surrogate: Toluene-d8	23.3		ug/L	25.00		93	70-130			

LCS

1,1,1-Trichloroethane	10.1		ug/L	10.00		101	70-130			
1,1,2,2-Tetrachloroethane	8.6		ug/L	10.00		86	70-130			
1,1,2-Trichloroethane	8.5		ug/L	10.00		85	70-130			
1,1-Dichloroethane	9.1		ug/L	10.00		91	70-130			
1,1-Dichloroethene	10.4		ug/L	10.00		104	70-130			



CERTIFICATE OF ANALYSIS

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624 Volatile Organic Compounds

Batch CF61028 - 5030B

1,2-Dichlorobenzene	10.6		ug/L	10.00		106	70-130			
1,2-Dichloroethane	9.8		ug/L	10.00		98	70-130			
1,2-Dichloropropane	8.3		ug/L	10.00		83	70-130			
1,3-Dichlorobenzene	10.4		ug/L	10.00		104	70-130			
1,4-Dichlorobenzene	10.4		ug/L	10.00		104	70-130			
2-Chloroethyl vinyl ether	46.2		ug/L	50.00		92	70-130			
Acrolein - Screen	7.5		ug/L	10.00		75	70-130			
Acrylonitrile - Screen	8.3		ug/L	10.00		83	70-130			
Benzene	9.6		ug/L	10.00		96	70-130			
Bromodichloromethane	9.4		ug/L	10.00		94	70-130			
Bromoform	9.1		ug/L	10.00		91	70-130			
Bromomethane	11.9		ug/L	10.00		119	70-130			
Carbon Tetrachloride	10.2		ug/L	10.00		102	70-130			
Chlorobenzene	11.0		ug/L	10.00		110	70-130			
Chloroethane	8.7		ug/L	10.00		87	70-130			
Chloroform	9.5		ug/L	10.00		95	70-130			
Chloromethane	8.4		ug/L	10.00		84	70-130			
cis-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130			
cis-1,3-Dichloropropene	9.9		ug/L	10.00		99	70-130			
Dibromochloromethane	10.8		ug/L	10.00		108	70-130			
Ethylbenzene	10.1		ug/L	10.00		101	70-130			
Methylene Chloride	9.2		ug/L	10.00		92	70-130			
Tetrachloroethene	10.0		ug/L	10.00		100	70-130			
Toluene	10.3		ug/L	10.00		103	70-130			
trans-1,2-Dichloroethene	9.9		ug/L	10.00		99	70-130			
trans-1,3-Dichloropropene	9.2		ug/L	10.00		92	70-130			
Trichloroethene	9.2		ug/L	10.00		92	70-130			
Trichlorofluoromethane	9.4		ug/L	10.00		94	70-130			
Vinyl Chloride	9.7		ug/L	10.00		97	70-130			
Surrogate: 1,2-Dichloroethane-d4	25.2		ug/L	25.00		101	70-130			
Surrogate: 4-Bromofluorobenzene	25.7		ug/L	25.00		103	70-130			
Surrogate: Dibromofluoromethane	25.4		ug/L	25.00		102	70-130			
Surrogate: Toluene-d8	24.6		ug/L	25.00		98	70-130			

LCS Dup

1,1,1-Trichloroethane	9.6		ug/L	10.00		96	70-130	5	25	
1,1,2,2-Tetrachloroethane	9.8		ug/L	10.00		98	70-130	13	25	
1,1,2-Trichloroethane	9.4		ug/L	10.00		94	70-130	10	25	
1,1-Dichloroethane	9.7		ug/L	10.00		97	70-130	7	25	
1,1-Dichloroethene	9.7		ug/L	10.00		97	70-130	7	25	
1,2-Dichlorobenzene	10.4		ug/L	10.00		104	70-130	2	25	
1,2-Dichloroethane	9.8		ug/L	10.00		98	70-130	0.7	25	
1,2-Dichloropropane	8.8		ug/L	10.00		88	70-130	7	25	
1,3-Dichlorobenzene	10.3		ug/L	10.00		103	70-130	0.6	25	
1,4-Dichlorobenzene	10.1		ug/L	10.00		101	70-130	3	25	
2-Chloroethyl vinyl ether	52.2		ug/L	50.00		104	70-130	12	25	



CERTIFICATE OF ANALYSIS

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624 Volatile Organic Compounds

Batch CF61028 - 5030B

Acrolein - Screen	2.9		ug/L	10.00		29	70-130	88	25	B-, D+
Acrylonitrile - Screen	9.4		ug/L	10.00		94	70-130	12	20	
Benzene	10.2		ug/L	10.00		102	70-130	6	25	
Bromodichloromethane	9.8		ug/L	10.00		98	70-130	4	25	
Bromoform	9.9		ug/L	10.00		99	70-130	8	25	
Bromomethane	10.1		ug/L	10.00		101	70-130	16	25	
Carbon Tetrachloride	9.9		ug/L	10.00		99	70-130	3	25	
Chlorobenzene	10.4		ug/L	10.00		104	70-130	5	25	
Chloroethane	8.5		ug/L	10.00		85	70-130	2	25	
Chloroform	9.4		ug/L	10.00		94	70-130	2	25	
Chloromethane	8.2		ug/L	10.00		82	70-130	3	25	
cis-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130	1	25	
cis-1,3-Dichloropropene	9.9		ug/L	10.00		99	70-130	0.6	25	
Dibromochloromethane	10.0		ug/L	10.00		100	70-130	8	25	
Ethylbenzene	10.0		ug/L	10.00		100	70-130	0.3	25	
Methylene Chloride	10.4		ug/L	10.00		104	70-130	13	25	
Tetrachloroethene	7.3		ug/L	10.00		73	70-130	32	25	D+
Toluene	9.6		ug/L	10.00		96	70-130	7	25	
trans-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130	2	25	
trans-1,3-Dichloropropene	9.4		ug/L	10.00		94	70-130	2	25	
Trichloroethene	9.7		ug/L	10.00		97	70-130	5	25	
Trichlorofluoromethane	9.0		ug/L	10.00		90	70-130	5	25	
Vinyl Chloride	9.3		ug/L	10.00		93	70-130	4	25	
Surrogate: 1,2-Dichloroethane-d4	24.7		ug/L	25.00		99	70-130			
Surrogate: 4-Bromofluorobenzene	24.7		ug/L	25.00		99	70-130			
Surrogate: Dibromofluoromethane	24.7		ug/L	25.00		99	70-130			
Surrogate: Toluene-d8	24.6		ug/L	25.00		98	70-130			

8270C Semi-Volatile Organic Compounds

Batch CF61340 - 3520C

Blank

1,2,4-Trichlorobenzene	ND	10.0	ug/L
1,2-Dichlorobenzene	ND	10.0	ug/L
1,3-Dichlorobenzene	ND	10.0	ug/L
1,4-Dichlorobenzene	ND	10.0	ug/L
2,4,5-Trichlorophenol	ND	10.0	ug/L
2,4,6-Trichlorophenol	ND	10.0	ug/L
2,4-Dichlorophenol	ND	10.0	ug/L
2,4-Dimethylphenol	ND	50.0	ug/L
2,4-Dinitrophenol	ND	50.0	ug/L
2,4-Dinitrotoluene	ND	10.0	ug/L
2,6-Dinitrotoluene	ND	10.0	ug/L
2-Chloronaphthalene	ND	10.0	ug/L
2-Chlorophenol	ND	10.0	ug/L
2-Methylphenol	ND	10.0	ug/L



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8270C Semi-Volatile Organic Compounds

Batch CF61340 - 3520C

2-Nitrophenol	ND	10.0	ug/L							
3,3'-Dichlorobenzidine	ND	20.0	ug/L							
3+4-Methylphenol	ND	20.0	ug/L							
4-Bromophenyl-phenylether	ND	10.0	ug/L							
4-Chloroaniline	ND	20.0	ug/L							
4-Nitrophenol	ND	50.0	ug/L							
Acetophenone	ND	10.0	ug/L							
Aniline	ND	10.0	ug/L							
Azobenzene	ND	20.0	ug/L							
bis(2-Chloroethoxy)methane	ND	10.0	ug/L							
bis(2-Chloroethyl)ether	ND	10.0	ug/L							
bis(2-chloroisopropyl)Ether	ND	10.0	ug/L							
bis(2-Ethylhexyl)phthalate	ND	6.0	ug/L							
Butylbenzylphthalate	ND	10.0	ug/L							
Dibenzofuran	ND	10.0	ug/L							
Diethylphthalate	ND	10.0	ug/L							
Dimethylphthalate	ND	10.0	ug/L							
Di-n-butylphthalate	ND	10.0	ug/L							
Di-n-octylphthalate	ND	10.0	ug/L							
Hexachlorobutadiene	ND	10.0	ug/L							
Hexachloroethane	ND	5.0	ug/L							
Isophorone	ND	10.0	ug/L							
Nitrobenzene	ND	10.0	ug/L							
N-Nitrosodimethylamine	ND	10.0	ug/L							
Phenol	ND	10.0	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	78.0		ug/L	100.0		78	30-130			
Surrogate: 2,4,6-Tribromophenol	113		ug/L	150.0		75	15-110			
Surrogate: 2-Chlorophenol-d4	116		ug/L	150.0		77	15-110			
Surrogate: 2-Fluorobiphenyl	79.9		ug/L	100.0		80	30-130			
Surrogate: 2-Fluorophenol	99.1		ug/L	150.0		66	15-110			
Surrogate: Nitrobenzene-d5	85.7		ug/L	100.0		86	30-130			
Surrogate: Phenol-d6	121		ug/L	150.0		81	15-110			
Surrogate: p-Terphenyl-d14	91.5		ug/L	100.0		91	30-130			

LCS

1,2,4-Trichlorobenzene	75.1	10.0	ug/L	100.0		75	40-140
1,2-Dichlorobenzene	70.1	10.0	ug/L	100.0		70	40-140
1,3-Dichlorobenzene	66.6	10.0	ug/L	100.0		67	40-140
1,4-Dichlorobenzene	66.6	10.0	ug/L	100.0		67	40-140
2,4,5-Trichlorophenol	99.2	10.0	ug/L	100.0		99	30-130
2,4,6-Trichlorophenol	89.8	10.0	ug/L	100.0		90	30-130
2,4-Dichlorophenol	82.4	10.0	ug/L	100.0		82	30-130
2,4-Dimethylphenol	77.3	50.0	ug/L	100.0		77	30-130
2,4-Dinitrophenol	98.1	50.0	ug/L	100.0		98	30-130
2,4-Dinitrotoluene	102	10.0	ug/L	100.0		102	40-140
2,6-Dinitrotoluene	91.6	10.0	ug/L	100.0		92	40-140



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8270C Semi-Volatile Organic Compounds

Batch CF61340 - 3520C

2-Chloronaphthalene	73.2	10.0	ug/L	100.0		73	40-140			
2-Chlorophenol	66.2	10.0	ug/L	100.0		66	30-130			
2-Methylphenol	75.6	10.0	ug/L	100.0		76	30-130			
2-Nitrophenol	77.8	10.0	ug/L	100.0		78	30-130			
3,3'-Dichlorobenzidine	98.6	20.0	ug/L	100.0		99	40-140			
3+4-Methylphenol	169	20.0	ug/L	200.0		85	30-130			
4-Bromophenyl-phenylether	90.4	10.0	ug/L	100.0		90	40-140			
4-Chloroaniline	78.9	20.0	ug/L	100.0		79	40-140			
4-Nitrophenol	91.9	50.0	ug/L	100.0		92	30-130			
Acetophenone	78.5	10.0	ug/L	100.0		79	40-140			
Aniline	59.1	10.0	ug/L	100.0		59	40-140			
Azobenzene	83.2	20.0	ug/L	100.0		83	40-140			
bis(2-Chloroethoxy)methane	75.1	10.0	ug/L	100.0		75	40-140			
bis(2-Chloroethyl)ether	70.7	10.0	ug/L	100.0		71	40-140			
bis(2-chloroisopropyl)Ether	74.6	10.0	ug/L	100.0		75	40-140			
bis(2-Ethylhexyl)phthalate	93.4	6.0	ug/L	100.0		93	40-140			
Butylbenzylphthalate	92.5	10.0	ug/L	100.0		92	40-140			
Dibenzofuran	85.9	10.0	ug/L	100.0		86	40-140			
Diethylphthalate	103	10.0	ug/L	100.0		103	40-140			
Dimethylphthalate	95.8	10.0	ug/L	100.0		96	40-140			
Di-n-butylphthalate	94.0	10.0	ug/L	100.0		94	40-140			
Di-n-octylphthalate	91.2	10.0	ug/L	100.0		91	40-140			
Hexachlorobutadiene	70.2	10.0	ug/L	100.0		70	40-140			
Hexachloroethane	63.3	5.0	ug/L	100.0		63	40-140			
Isophorone	77.6	10.0	ug/L	100.0		78	40-140			
Nitrobenzene	76.6	10.0	ug/L	100.0		77	40-140			
N-Nitrosodimethylamine	62.0	10.0	ug/L	100.0		62	40-140			
Phenol	66.5	10.0	ug/L	100.0		66	30-130			
Surrogate: 1,2-Dichlorobenzene-d4	70.6		ug/L	100.0		71	30-130			
Surrogate: 2,4,6-Tribromophenol	131		ug/L	150.0		87	15-110			
Surrogate: 2-Chlorophenol-d4	102		ug/L	150.0		68	15-110			
Surrogate: 2-Fluorobiphenyl	80.3		ug/L	100.0		80	30-130			
Surrogate: 2-Fluorophenol	78.7		ug/L	150.0		52	15-110			
Surrogate: Nitrobenzene-d5	79.7		ug/L	100.0		80	30-130			
Surrogate: Phenol-d6	107		ug/L	150.0		72	15-110			
Surrogate: p-Terphenyl-d14	96.2		ug/L	100.0		96	30-130			

LCS Dup

1,2,4-Trichlorobenzene	79.0	10.0	ug/L	100.0		79	40-140	5	20	
1,2-Dichlorobenzene	75.1	10.0	ug/L	100.0		75	40-140	7	20	
1,3-Dichlorobenzene	71.7	10.0	ug/L	100.0		72	40-140	7	20	
1,4-Dichlorobenzene	72.1	10.0	ug/L	100.0		72	40-140	8	20	
2,4,5-Trichlorophenol	95.8	10.0	ug/L	100.0		96	30-130	4	20	
2,4,6-Trichlorophenol	88.5	10.0	ug/L	100.0		88	30-130	1	20	
2,4-Dichlorophenol	85.0	10.0	ug/L	100.0		85	30-130	3	20	
2,4-Dimethylphenol	85.4	50.0	ug/L	100.0		85	30-130	10	20	



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

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

Batch CF61340 - 3520C

2,4-Dinitrophenol	92.3	50.0	ug/L	100.0		92	30-130	6	20	
2,4-Dinitrotoluene	100	10.0	ug/L	100.0		100	40-140	2	20	
2,6-Dinitrotoluene	87.6	10.0	ug/L	100.0		88	40-140	4	20	
2-Chloronaphthalene	72.8	10.0	ug/L	100.0		73	40-140	0.5	20	
2-Chlorophenol	74.7	10.0	ug/L	100.0		75	30-130	12	20	
2-Methylphenol	81.0	10.0	ug/L	100.0		81	30-130	7	20	
2-Nitrophenol	84.7	10.0	ug/L	100.0		85	30-130	8	20	
3,3'-Dichlorobenzidine	102	20.0	ug/L	100.0		102	40-140	3	20	
3+4-Methylphenol	177	20.0	ug/L	200.0		88	30-130	4	20	
4-Bromophenyl-phenylether	87.6	10.0	ug/L	100.0		88	40-140	3	20	
4-Chloroaniline	78.2	20.0	ug/L	100.0		78	40-140	0.9	20	
4-Nitrophenol	92.2	50.0	ug/L	100.0		92	30-130	0.3	20	
Acetophenone	81.6	10.0	ug/L	100.0		82	40-140	4	20	
Aniline	59.4	10.0	ug/L	100.0		59	40-140	0.6	20	
Azobenzene	80.0	20.0	ug/L	100.0		80	40-140	4	20	
bis(2-Chloroethoxy)methane	76.9	10.0	ug/L	100.0		77	40-140	2	20	
bis(2-Chloroethyl)ether	74.4	10.0	ug/L	100.0		74	40-140	5	20	
bis(2-chloroisopropyl)Ether	78.7	10.0	ug/L	100.0		79	40-140	5	20	
bis(2-Ethylhexyl)phthalate	92.4	6.0	ug/L	100.0		92	40-140	1	20	
Butylbenzylphthalate	91.4	10.0	ug/L	100.0		91	40-140	1	20	
Dibenzofuran	82.6	10.0	ug/L	100.0		83	40-140	4	20	
Diethylphthalate	99.5	10.0	ug/L	100.0		100	40-140	3	20	
Dimethylphthalate	92.5	10.0	ug/L	100.0		92	40-140	3	20	
Di-n-butylphthalate	94.1	10.0	ug/L	100.0		94	40-140	0.1	20	
Di-n-octylphthalate	90.2	10.0	ug/L	100.0		90	40-140	1	20	
Hexachlorobutadiene	74.7	10.0	ug/L	100.0		75	40-140	6	20	
Hexachloroethane	69.1	5.0	ug/L	100.0		69	40-140	9	20	
Isophorone	78.7	10.0	ug/L	100.0		79	40-140	1	20	
Nitrobenzene	80.1	10.0	ug/L	100.0		80	40-140	4	20	
N-Nitrosodimethylamine	65.7	10.0	ug/L	100.0		66	40-140	6	20	
Phenol	72.4	10.0	ug/L	100.0		72	30-130	8	20	
Surrogate: 1,2-Dichlorobenzene-d4	74.5		ug/L	100.0		75	30-130			
Surrogate: 2,4,6-Tribromophenol	127		ug/L	150.0		85	15-110			
Surrogate: 2-Chlorophenol-d4	114		ug/L	150.0		76	15-110			
Surrogate: 2-Fluorobiphenyl	79.2		ug/L	100.0		79	30-130			
Surrogate: 2-Fluorophenol	94.3		ug/L	150.0		63	15-110			
Surrogate: Nitrobenzene-d5	81.6		ug/L	100.0		82	30-130			
Surrogate: Phenol-d6	117		ug/L	150.0		78	15-110			
Surrogate: p-Terphenyl-d14	92.8		ug/L	100.0		93	30-130			

8270D(SIM) Semi-Volatile Organic Compounds

Batch CF61340 - 3520C

Blank

2-Methylnaphthalene	ND	0.20	ug/L							
Acenaphthene	ND	0.20	ug/L							



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D(SIM) Semi-Volatile Organic Compounds

Batch CF61340 - 3520C

Acenaphthylene	ND	0.20	ug/L							
Anthracene	ND	0.20	ug/L							
Benzo(a)anthracene	ND	0.05	ug/L							
Benzo(a)pyrene	ND	0.05	ug/L							
Benzo(b)fluoranthene	ND	0.05	ug/L							
Benzo(g,h,i)perylene	ND	0.20	ug/L							
Benzo(k)fluoranthene	ND	0.05	ug/L							
Chrysene	ND	0.05	ug/L							
Dibenzo(a,h)Anthracene	ND	0.05	ug/L							
Fluoranthene	ND	0.20	ug/L							
Fluorene	ND	0.20	ug/L							
Hexachlorobenzene	ND	0.20	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	0.05	ug/L							
Naphthalene	ND	0.20	ug/L							
Pentachlorophenol	ND	0.90	ug/L							
Phenanthrene	ND	0.20	ug/L							
Pyrene	ND	0.20	ug/L							

LCS

2-Methylnaphthalene	80.2	4.00	ug/L	100.0		80	40-140			
Acenaphthene	84.0	4.00	ug/L	100.0		84	40-140			
Acenaphthylene	83.4	4.00	ug/L	100.0		83	40-140			
Anthracene	85.2	4.00	ug/L	100.0		85	40-140			
Benzo(a)anthracene	88.8	1.00	ug/L	100.0		89	40-140			
Benzo(a)pyrene	93.6	1.00	ug/L	100.0		94	40-140			
Benzo(b)fluoranthene	92.6	1.00	ug/L	100.0		93	40-140			
Benzo(g,h,i)perylene	96.7	4.00	ug/L	100.0		97	40-140			
Benzo(k)fluoranthene	90.4	1.00	ug/L	100.0		90	40-140			
Chrysene	88.9	1.00	ug/L	100.0		89	40-140			
Dibenzo(a,h)Anthracene	98.2	1.00	ug/L	100.0		98	40-140			
Fluoranthene	91.8	4.00	ug/L	100.0		92	40-140			
Fluorene	91.4	4.00	ug/L	100.0		91	40-140			
Hexachlorobenzene	109	4.00	ug/L	100.0		109	40-140			
Indeno(1,2,3-cd)Pyrene	109	1.00	ug/L	100.0		109	40-140			
Naphthalene	73.2	4.00	ug/L	100.0		73	40-140			
Pentachlorophenol	124	18.0	ug/L	100.0		124	30-130			
Phenanthrene	87.0	4.00	ug/L	100.0		87	40-140			
Pyrene	94.8	4.00	ug/L	100.0		95	40-140			

LCS Dup

2-Methylnaphthalene	79.4	4.00	ug/L	100.0		79	40-140	1	20	
Acenaphthene	80.8	4.00	ug/L	100.0		81	40-140	4	20	
Acenaphthylene	81.0	4.00	ug/L	100.0		81	40-140	3	20	
Anthracene	82.8	4.00	ug/L	100.0		83	40-140	3	20	
Benzo(a)anthracene	84.0	1.00	ug/L	100.0		84	40-140	6	20	
Benzo(a)pyrene	92.1	1.00	ug/L	100.0		92	40-140	2	20	
Benzo(b)fluoranthene	91.4	1.00	ug/L	100.0		91	40-140	1	20	



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D(SIM) Semi-Volatile Organic Compounds

Batch CF61340 - 3520C

Benzo(g,h,i)perylene	96.3	4.00	ug/L	100.0		96	40-140	0.5	20	
Benzo(k)fluoranthene	89.1	1.00	ug/L	100.0		89	40-140	2	20	
Chrysene	84.5	1.00	ug/L	100.0		85	40-140	5	20	
Dibenzo(a,h)Anthracene	95.7	1.00	ug/L	100.0		96	40-140	3	20	
Fluoranthene	88.6	4.00	ug/L	100.0		89	40-140	4	20	
Fluorene	86.7	4.00	ug/L	100.0		87	40-140	5	20	
Hexachlorobenzene	104	4.00	ug/L	100.0		104	40-140	4	20	
Indeno(1,2,3-cd)Pyrene	103	1.00	ug/L	100.0		103	40-140	6	20	
Naphthalene	74.2	4.00	ug/L	100.0		74	40-140	1	20	
Pentachlorophenol	119	18.0	ug/L	100.0		119	30-130	4	20	
Phenanthrene	83.5	4.00	ug/L	100.0		83	40-140	4	20	
Pyrene	89.9	4.00	ug/L	100.0		90	40-140	5	20	

Classical Chemistry

Batch CF60951 - General Preparation

Blank										
Hexavalent Chromium	ND	10	ug/L							
LCS										
Hexavalent Chromium	0.5		mg/L	0.4998		98	90-110			
LCS Dup										
Hexavalent Chromium	0.5		mg/L	0.4998		99	90-110	0.1	20	

Batch CF61020 - General Preparation

Blank										HT
Total Residual Chlorine	ND	10	ug/L							
LCS										
Total Residual Chlorine	1		mg/L	1.360		101	85-115			HT

Batch CF61427 - General Preparation

Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	60		mg/L	60.60		99	80-120			

Batch CF61440 - General Preparation

Blank										
Total Petroleum Hydrocarbon	ND	5	mg/L							
LCS										
Total Petroleum Hydrocarbon	14	5	mg/L	19.38		71	66-114			

Batch CF61628 - TCN Prep

Blank										
Total Cyanide (LL)	ND	5.00	ug/L							
LCS										
Total Cyanide (LL)	21.0	5.00	ug/L	20.06		105	90-110			



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
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ESS Laboratory Work Order: 1606245

Quality Control Data

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

Batch CF61628 - TCN Prep

LCS

Total Cyanide (LL)	150	5.00	ug/L	150.4		100	90-110			
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LCS Dup

Total Cyanide (LL)	149	5.00	ug/L	150.4		99	90-110	0.4	20	
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Batch CF61630 - General Preparation

Blank

Phenols	ND	100	ug/L							
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LCS

Phenols	99	100	ug/L	100.0		99	80-120			
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LCS

Phenols	972	100	ug/L	1000		97	80-120			
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504.1 1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane

Batch CF61311 - 504/8011

Blank

1,2-Dibromoethane	ND	0.015	ug/L							
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1,2-Dibromoethane [2C]	ND	0.015	ug/L							
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Surrogate: Pentachloroethane	0.193		ug/L	0.2000		96	30-150			
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Surrogate: Pentachloroethane [2C]	0.189		ug/L	0.2000		95	30-150			
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LCS

1,2-Dibromoethane	0.194	0.015	ug/L	0.2000		97	70-130			
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1,2-Dibromoethane [2C]	0.187	0.015	ug/L	0.2000		94	70-130			
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Surrogate: Pentachloroethane	0.177		ug/L	0.2000		88	30-150			
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Surrogate: Pentachloroethane [2C]	0.173		ug/L	0.2000		87	30-150			
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LCS

1,2-Dibromoethane	0.087	0.015	ug/L	0.08000		109	70-130			
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1,2-Dibromoethane [2C]	0.085	0.015	ug/L	0.08000		106	70-130			
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Surrogate: Pentachloroethane	0.0690		ug/L	0.08000		86	30-150			
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Surrogate: Pentachloroethane [2C]	0.0666		ug/L	0.08000		83	30-150			
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CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Notes and Definitions

U	Analyte included in the analysis, but not detected
SC	Surrogate recovery(ies) outside of criteria. Reextraction/Reanalysis confirms results (SC).
Q	Calibration required quadratic regression (Q).
P	Percent difference between primary and confirmation results exceeds 40% (P).
HT	The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
B-	Blank Spike recovery is below lower control limit (B-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report



CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/find/labs/analytical/ESS.pdf>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002

<http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

ESS Laboratory Sample and Cooler Receipt Checklist

Client: The Vertex Companies - TB/CMT

ESS Project ID: 1606245

Shipped/Delivered Via: ESS Courier

Date Received: 6/9/2016

Project Due Date: 6/16/2016

Days for Project: 5 Day

1. Air bill manifest present? ☐ No
Air No.: NA

6. Does COC match bottles? ☐ Yes

2. Were custody seals present? ☐ No

7. Is COC complete and correct? ☐ Yes

3. Is radiation count <100 CPM? ☐ Yes

8. Were samples received intact? ☐ Yes

4. Is a Cooler Present? ☐ Yes

9. Were labs informed about short holds & rushes? ☒ Yes / No / NA

Temp: 2.1 Iced with: Ice

10. Were any analyses received outside of hold time? Yes / ☒ No

5. Was COC signed and dated by client? ☐ Yes

11. Any Subcontracting needed? Yes ☒ No

12. Were VOAs received? ☒ Yes / No

ESS Sample IDs: _____

a. Air bubbles in aqueous VOAs? Yes / ☒ No

Analysis: _____

b. Does methanol cover soil completely? Yes / No / ☒ NA

TAT: _____

13. Are the samples properly preserved? ☒ Yes / No

a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____

b. Low Level VOAs brought to freezer: Date: _____ Time: _____ By: _____

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / ☒ No

a. Was there a need to contact the client? Yes / ☒ No

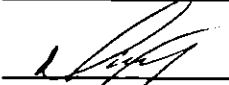
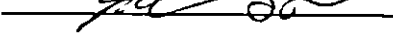
Who was contacted? _____ Date: _____ Time: _____ By: _____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	42331	Yes	NA	Yes	1L Amber - Unpres	NP	first pH = 9 w 6/9/16 1730
01	42332	Yes	NA	Yes	1L Amber - Unpres	NP	
01	42333	Yes	NA	Yes	1L Amber - Unpres	NP	
01	42334	Yes	NA	Yes	1L Amber - Unpres	NP	
01	42335	Yes	NA	Yes	1L Amber - Unpres	NP	
01	42336	Yes	NA	Yes	1L Amber - Unpres	NP	pH > 12 w 6/9/16 1730
01	42337	Yes	NA	Yes	1L Amber - H2SO4	H2SO4	
01	42338	Yes	NA	Yes	1L Amber - H2SO4	H2SO4	
01	42339	Yes	NA	Yes	1L Poly - Unpres	NP	
01	42340	Yes	NA	Yes	250 mL Poly - Unpres	NP	
01	42341	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
01	42342	Yes	NA	Yes	250 mL Poly - NaOH	NaOH	
01	42343	Yes	No	Yes	VOA Vial - HCl	HCL	
01	42344	Yes	No	Yes	VOA Vial - HCl	HCL	
01	42345	Yes	No	Yes	VOA Vial - HCl	HCL	
01	42346	Yes	No	Yes	VOA Vial - HCl	HCL	
01	42347	Yes	No	Yes	VOA Vial - HCl	HCL	
01	42348	Yes	No	Yes	VOA Vial - HCl	HCL	

2nd Review

Are barcode labels on correct containers? ☒ Yes / No

ESS Laboratory Sample and Cooler Receipt Checklist

Client:	The Vertex Companies - TB/CMT	ESS Project ID:	1606245
		Date Received:	6/9/2016
Completed By:		Date & Time:	6/9/16 1731
Reviewed By:		Date & Time:	6/9/16 1740
Delivered By:		Date & Time:	6/9/16 1740

ESS Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston, RI 02910-2211

Tel. (401) 461-7181 Fax (401) 461-4486

www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time ☒ Standard Other

Regulatory State: (MA) RI CT NH NJ NY ME Other

Is this project for any of the following: (please circle)

MA-MCP Navy USACE CT DEP Other NPDES

Project # 20026 Project Name 1 Congress St

Address 1 Congress St

City Boston State MA

Tel. 617-275-5407 Zip 02114 PO # 20026

Fax email: J.Freeman@Vertexeng.com

ESS Lab ID Date Collection Time Matrix Sample ID Pres Code Type of Container Vol of Container

1 5/9/2016 12:00 G WW NPDES-72-100 1,2,3 18 N, P, S, P, 250ml, 3L

ESS Lab # 1606245

Reporting Limits - NPDES

Electronic Deliverables Excel Access PDF

Analysis

VOA-624

SVA-PAH

PCB+Pest-608

ENG

Total Metals Hex C

TCN

TPH-1664

Phenols

TRC TSS

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct 9-

Cooler Present ☒ Yes ☐ No Internal Use Only ☒ Pickup ☐ Technician

Seals Intact ☒ Yes ☐ No NA: ☒ ☐

Cooler Temperature: 21.1°C

Comments: Nicole Perlot

Relinquished by: (Signature, Date & Time) Received by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time) Received by: (Signature, Date & Time)

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Relinquished by: (Signature, Date & Time) Received by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time) Received by: (Signature, Date & Time)

Collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

1 (White) Lab Copy

2 (Yellow) Client Receipt

April 18, 2019

Benjamin Sivonen
Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114

Project Location: Boston, MA
Client Job Number:
Project Number: 27026
Laboratory Work Order Number: 19D0732

Enclosed are results of analyses for samples received by the laboratory on April 12, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Jessica Hoffman". The signature is written in a cursive, flowing style.

Jessica L. Hoffman
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114
ATTN: Benjamin Sivonen

REPORT DATE: 4/18/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 27026

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19D0732

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Boston, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
BOS-049-19-04-12	19D0732-01	Ground Water		608.3	MA M-MA-086/CT PH-0574/NY11148
				624.1	
				625.1	
				EPA 1664B	
				EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				EPA 300.0	
				EPA 420.1	
				SM19-22 4500 NH3 C	
				SM21-22 2540D	
				SM21-22 3500 Cr B	
				SM21-22 4500 CL G	
				SM21-22 4500 CN E	
				Tri Chrome Calc.	
WPB-2-19-04-12	19D0732-02	Ground Water		608.3	MA M-MA-086/CT PH-0574/NY11148
				624.1	
				625.1	
				EPA 1664B	
				EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				EPA 300.0	
				EPA 420.1	
				SM19-22 4500 NH3 C	
				SM21-22 2540D	
				SM21-22 3500 Cr B	
				SM21-22 4500 CL G	
				SM21-22 4500 CN E	
				Tri Chrome Calc.	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method 625, only PAHs were requested and reported.

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625.1

Qualifications:**V-05**

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:**2-Methylphenol**

S034767-CCV1

Pentachlorophenol (SIM)

19D0732-01[BOS-049-19-04-12], 19D0732-02[WPB-2-19-04-12], S034791-CCV1

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:**3,3-Dichlorobenzidine**

S034767-CCV1

EPA 200.8

Qualifications:**DL-15**

Sample required a dilution due to low internal standard recovery of the lesser diluted digestion, reporting limit is elevated.

Analyte & Samples(s) Qualified:**Cadmium**

19D0732-02[WPB-2-19-04-12]

Chromium

19D0732-02[WPB-2-19-04-12]

Copper

19D0732-02[WPB-2-19-04-12]

Lead

19D0732-02[WPB-2-19-04-12]

Nickel

19D0732-02[WPB-2-19-04-12]

Selenium

19D0732-02[WPB-2-19-04-12]

Zinc

19D0732-02[WPB-2-19-04-12]

EPA 300.0

Qualifications:**MS-07**

Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:**Chloride**

19D0732-01[BOS-049-19-04-12], 19D0732-02[WPB-2-19-04-12], B228187-MS2, B228387-MS1

SM21-22 4500 CL G

Qualifications:**Z-01**

SM4500 test had calibration points outside of acceptable back calculated recoveries. Reanalysis yielded similar nonconformance.

Analyte & Samples(s) Qualified:**Chlorine, Residual**

19D0732-01[BOS-049-19-04-12], 19D0732-02[WPB-2-19-04-12]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Daren J. Damboragian", is written over a light gray rectangular background.

Daren J. Damboragian
Director of Operations

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Boston, MA

Sample Description:

Work Order: 19D0732

Date Received: 4/12/2019

Field Sample #: BOS-049-19-04-12

Sampled: 4/12/2019 09:00

Sample ID: 19D0732-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	<50.0	50.0	3.79	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
tert-Amyl Methyl Ether (TAME)	<2.00	2.00	0.140	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
Benzene	<1.00	1.00	0.180	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
tert-Butyl Alcohol (TBA)	<20.0	20.0	4.17	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
Carbon Tetrachloride	<2.00	2.00	0.110	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
1,2-Dichlorobenzene	<2.00	2.00	0.160	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
1,3-Dichlorobenzene	<2.00	2.00	0.120	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
1,4-Dichlorobenzene	<2.00	2.00	0.130	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
cis-1,2-Dichloroethylene	<1.00	1.00	0.130	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
1,1-Dichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
1,1-Dichloroethylene	<2.00	2.00	0.320	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
trans-1,2-Dichloroethylene	<2.00	2.00	0.310	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
1,4-Dioxane	<50.0	50.0	22.5	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
Ethanol	<50.0	50.0	10.5	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
Ethylbenzene	<2.00	2.00	0.130	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
Methyl tert-Butyl Ether (MTBE)	<2.00	2.00	0.250	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
Methylene Chloride	<5.00	5.00	0.340	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
Tetrachloroethylene	<2.00	2.00	0.180	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
1,1,1-Trichloroethane	<2.00	2.00	0.200	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
1,1,2-Trichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
Trichloroethylene	<2.00	2.00	0.240	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
Xylenes (total)	<3.00	3.00		µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
Vinyl Chloride	<2.00	2.00	0.450	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
m+p Xylene	<2.00	2.00	0.300	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
o-Xylene	<2.00	2.00	0.170	µg/L	1		624.1	4/18/19	4/18/19 11:17	EEH
Surrogates	% Recovery	Recovery Limits		Flag/Qual						
1,2-Dichloroethane-d4	91.7	70-130				4/18/19 11:17				
Toluene-d8	101	70-130				4/18/19 11:17				
4-Bromofluorobenzene	99.6	70-130				4/18/19 11:17				

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Boston, MA

Sample Description:

Work Order: 19D0732

Date Received: 4/12/2019

Field Sample #: BOS-049-19-04-12

Sampled: 4/12/2019 09:00

Sample ID: 19D0732-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzo(a)anthracene (SIM)	<0.049	0.049	0.016	µg/L	1		625.1	4/15/19	4/17/19 22:05	CLA
Benzo(a)pyrene (SIM)	<0.098	0.098	0.012	µg/L	1		625.1	4/15/19	4/17/19 22:05	CLA
Benzo(b)fluoranthene (SIM)	<0.049	0.049	0.015	µg/L	1		625.1	4/15/19	4/17/19 22:05	CLA
Benzo(k)fluoranthene (SIM)	<0.20	0.20	0.012	µg/L	1		625.1	4/15/19	4/17/19 22:05	CLA
Bis(2-ethylhexyl)phthalate (SIM)	<0.98	0.98	0.98	µg/L	1		625.1	4/15/19	4/17/19 22:05	CLA
Chrysene (SIM)	<0.20	0.20	0.015	µg/L	1		625.1	4/15/19	4/17/19 22:05	CLA
Dibenz(a,h)anthracene (SIM)	<0.20	0.20	0.017	µg/L	1		625.1	4/15/19	4/17/19 22:05	CLA
Indeno(1,2,3-cd)pyrene (SIM)	<0.20	0.20	0.018	µg/L	1		625.1	4/15/19	4/17/19 22:05	CLA
Pentachlorophenol (SIM)	<0.98	0.98	0.98	µg/L	1	V-05	625.1	4/15/19	4/17/19 22:05	CLA
Pyrene (SIM)	<0.98	0.98	0.023	µg/L	1		625.1	4/15/19	4/17/19 22:05	CLA
Surrogates	% Recovery		Recovery Limits		Flag/Qual					
2-Fluorophenol	49.6		15-110				4/17/19 22:05			
Phenol-d6	39.7		15-110				4/17/19 22:05			
Nitrobenzene-d5	77.6		30-130				4/17/19 22:05			
2-Fluorobiphenyl	53.5		30-130				4/17/19 22:05			
2,4,6-Tribromophenol	97.6		15-110				4/17/19 22:05			
p-Terphenyl-d14	75.8		30-130				4/17/19 22:05			

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Project Location: Boston, MA

Sample Description:

Work Order: 19D0732

Date Received: 4/12/2019

Field Sample #: BOS-049-19-04-12

Sampled: 4/12/2019 09:00

Sample ID: 19D0732-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	<4.90	4.90	2.38	µg/L	1		625.1	4/15/19	4/16/19 16:22	BGL
Acenaphthylene	<4.90	4.90	2.33	µg/L	1		625.1	4/15/19	4/16/19 16:22	BGL
Anthracene	<4.90	4.90	2.66	µg/L	1		625.1	4/15/19	4/16/19 16:22	BGL
Benzo(g,h,i)perylene	<4.90	4.90	3.30	µg/L	1		625.1	4/15/19	4/16/19 16:22	BGL
Fluoranthene	<4.90	4.90	2.30	µg/L	1		625.1	4/15/19	4/16/19 16:22	BGL
Fluorene	<4.90	4.90	2.42	µg/L	1		625.1	4/15/19	4/16/19 16:22	BGL
Naphthalene	<4.90	4.90	2.61	µg/L	1		625.1	4/15/19	4/16/19 16:22	BGL
Phenanthrene	<4.90	4.90	2.69	µg/L	1		625.1	4/15/19	4/16/19 16:22	BGL
Pyrene	<4.90	4.90	3.45	µg/L	1		625.1	4/15/19	4/16/19 16:22	BGL
Surrogates	% Recovery		Recovery Limits		Flag/Qual					
2-Fluorophenol	35.7		15-110				4/16/19 16:22			
Phenol-d6	25.8		15-110				4/16/19 16:22			
Nitrobenzene-d5	61.5		30-130				4/16/19 16:22			
2-Fluorobiphenyl	64.4		30-130				4/16/19 16:22			
2,4,6-Tribromophenol	73.6		15-110				4/16/19 16:22			
p-Terphenyl-d14	77.5		30-130				4/16/19 16:22			

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Project Location: Boston, MA

Sample Description:

Work Order: 19D0732

Date Received: 4/12/2019

Field Sample #: BOS-049-19-04-12

Sampled: 4/12/2019 09:00

Sample ID: 19D0732-01

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	<0.200	0.200	0.184	µg/L	1		608.3	4/15/19	4/16/19 14:28	AYH
Aroclor-1221 [1]	<0.200	0.200	0.161	µg/L	1		608.3	4/15/19	4/16/19 14:28	AYH
Aroclor-1232 [1]	<0.200	0.200	0.199	µg/L	1		608.3	4/15/19	4/16/19 14:28	AYH
Aroclor-1242 [1]	<0.200	0.200	0.173	µg/L	1		608.3	4/15/19	4/16/19 14:28	AYH
Aroclor-1248 [1]	<0.200	0.200	0.190	µg/L	1		608.3	4/15/19	4/16/19 14:28	AYH
Aroclor-1254 [1]	<0.200	0.200	0.105	µg/L	1		608.3	4/15/19	4/16/19 14:28	AYH
Aroclor-1260 [1]	<0.200	0.200	0.196	µg/L	1		608.3	4/15/19	4/16/19 14:28	AYH
Surrogates	% Recovery		Recovery Limits		Flag/Qual					
Decachlorobiphenyl [1]	57.6		30-150				4/16/19 14:28			
Decachlorobiphenyl [2]	60.9		30-150				4/16/19 14:28			
Tetrachloro-m-xylene [1]	57.2		30-150				4/16/19 14:28			
Tetrachloro-m-xylene [2]	57.9		30-150				4/16/19 14:28			

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Boston, MA

Sample Description:

Work Order: 19D0732

Date Received: 4/12/2019

Field Sample #: BOS-049-19-04-12

Sampled: 4/12/2019 09:00

Sample ID: 19D0732-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0		µg/L	1		EPA 200.8	4/13/19	4/15/19 14:51	QNW
Arsenic	ND	1.0		µg/L	1		EPA 200.8	4/13/19	4/15/19 14:51	QNW
Cadmium	ND	0.20		µg/L	1		EPA 200.8	4/13/19	4/15/19 14:51	QNW
Chromium	ND	10		µg/L	1		EPA 200.8	4/13/19	4/15/19 14:51	QNW
Chromium, Trivalent	0.0			mg/L	1		Tri Chrome Calc.	4/13/19	4/15/19 14:51	QNW
Copper	2.5	1.0		µg/L	1		EPA 200.8	4/13/19	4/15/19 14:51	QNW
Iron	0.44	0.050		mg/L	1		EPA 200.7	4/13/19	4/15/19 15:42	EJB
Lead	1.5	0.50		µg/L	1		EPA 200.8	4/13/19	4/15/19 16:27	QNW
Mercury	ND	0.00010		mg/L	1		EPA 245.1	4/17/19	4/18/19 9:47	TBC
Nickel	ND	5.0		µg/L	1		EPA 200.8	4/13/19	4/15/19 14:51	QNW
Selenium	ND	5.0	1.4	µg/L	1		EPA 200.8	4/13/19	4/15/19 14:51	QNW
Silver	ND	0.20		µg/L	1		EPA 200.8	4/13/19	4/15/19 14:51	QNW
Zinc	ND	20		µg/L	1		EPA 200.8	4/13/19	4/15/19 14:51	QNW

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Boston, MA

Sample Description:

Work Order: 19D0732

Date Received: 4/12/2019

Field Sample #: BOS-049-19-04-12

Sampled: 4/12/2019 09:00

Sample ID: 19D0732-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	310	10		mg/L	10	MS-07	EPA 300.0	4/15/19	4/15/19 14:32	MMH
Chlorine, Residual	0.034	0.020		mg/L	1	Z-01	SM21-22 4500 CL G	4/12/19	4/12/19 20:50	MJG
Hexavalent Chromium	ND	0.0040		mg/L	1		SM21-22 3500 Cr B	4/12/19	4/12/19 21:00	MJG
Phenol	ND	0.050		mg/L	1		EPA 420.1	4/16/19	4/17/19 12:30	LL
Total Suspended Solids	4.1	1.3		mg/L	1		SM21-22 2540D	4/16/19	4/16/19 12:30	LL
Silica Gel Treated HEM (SGT-HEM)	ND	1.8		mg/L	1		EPA 1664B	4/16/19	4/16/19 10:30	LL

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Boston, MA

Sample Description:

Work Order: 19D0732

Date Received: 4/12/2019

Field Sample #: BOS-049-19-04-12

Sampled: 4/12/2019 09:00

Sample ID: 19D0732-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	0.098	0.075	0.024	mg/L	1		121, 4500NH3-BH		4/16/19 20:43	AAL
Cyanide	ND	0.005	0.001	mg/L	1		121, 4500CN-CE		4/16/16 13:52	AAL

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Boston, MA

Sample Description:

Work Order: 19D0732

Date Received: 4/12/2019

Field Sample #: WPB-2-19-04-12

Sampled: 4/12/2019 10:30

Sample ID: 19D0732-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	<50.0	50.0	3.79	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
tert-Amyl Methyl Ether (TAME)	<2.00	2.00	0.140	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
Benzene	<1.00	1.00	0.180	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
tert-Butyl Alcohol (TBA)	<20.0	20.0	4.17	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
Carbon Tetrachloride	<2.00	2.00	0.110	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
1,2-Dichlorobenzene	<2.00	2.00	0.160	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
1,3-Dichlorobenzene	<2.00	2.00	0.120	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
1,4-Dichlorobenzene	<2.00	2.00	0.130	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
cis-1,2-Dichloroethylene	<1.00	1.00	0.130	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
1,1-Dichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
1,1-Dichloroethylene	<2.00	2.00	0.320	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
trans-1,2-Dichloroethylene	<2.00	2.00	0.310	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
1,4-Dioxane	<50.0	50.0	22.5	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
Ethanol	<50.0	50.0	10.5	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
Ethylbenzene	<2.00	2.00	0.130	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
Methyl tert-Butyl Ether (MTBE)	<2.00	2.00	0.250	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
Methylene Chloride	<5.00	5.00	0.340	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
Tetrachloroethylene	<2.00	2.00	0.180	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
1,1,1-Trichloroethane	<2.00	2.00	0.200	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
1,1,2-Trichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
Trichloroethylene	<2.00	2.00	0.240	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
Xylenes (total)	<3.00	3.00		µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
Vinyl Chloride	<2.00	2.00	0.450	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
m+p Xylene	<2.00	2.00	0.300	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
o-Xylene	<2.00	2.00	0.170	µg/L	1		624.1	4/18/19	4/18/19 11:45	EEH
Surrogates	% Recovery	Recovery Limits		Flag/Qual						
1,2-Dichloroethane-d4	93.6	70-130				4/18/19 11:45				
Toluene-d8	101	70-130				4/18/19 11:45				
4-Bromofluorobenzene	101	70-130				4/18/19 11:45				

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Boston, MA

Sample Description:

Work Order: 19D0732

Date Received: 4/12/2019

Field Sample #: WPB-2-19-04-12

Sampled: 4/12/2019 10:30

Sample ID: 19D0732-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzo(a)anthracene (SIM)	<0.049	0.049	0.016	µg/L	1		625.1	4/15/19	4/17/19 22:34	CLA
Benzo(a)pyrene (SIM)	<0.098	0.098	0.012	µg/L	1		625.1	4/15/19	4/17/19 22:34	CLA
Benzo(b)fluoranthene (SIM)	<0.049	0.049	0.015	µg/L	1		625.1	4/15/19	4/17/19 22:34	CLA
Benzo(k)fluoranthene (SIM)	<0.20	0.20	0.012	µg/L	1		625.1	4/15/19	4/17/19 22:34	CLA
Bis(2-ethylhexyl)phthalate (SIM)	<0.98	0.98	0.98	µg/L	1		625.1	4/15/19	4/17/19 22:34	CLA
Chrysene (SIM)	<0.20	0.20	0.015	µg/L	1		625.1	4/15/19	4/17/19 22:34	CLA
Dibenz(a,h)anthracene (SIM)	<0.20	0.20	0.017	µg/L	1		625.1	4/15/19	4/17/19 22:34	CLA
Indeno(1,2,3-cd)pyrene (SIM)	<0.20	0.20	0.018	µg/L	1		625.1	4/15/19	4/17/19 22:34	CLA
Pentachlorophenol (SIM)	<0.98	0.98	0.98	µg/L	1	V-05	625.1	4/15/19	4/17/19 22:34	CLA
Pyrene (SIM)	0.042	0.98	0.023	µg/L	1	J	625.1	4/15/19	4/17/19 22:34	CLA
Surrogates	% Recovery		Recovery Limits		Flag/Qual					
2-Fluorophenol	51.1		15-110				4/17/19 22:34			
Phenol-d6	37.5		15-110				4/17/19 22:34			
Nitrobenzene-d5	76.4		30-130				4/17/19 22:34			
2-Fluorobiphenyl	52.7		30-130				4/17/19 22:34			
2,4,6-Tribromophenol	95.5		15-110				4/17/19 22:34			
p-Terphenyl-d14	65.4		30-130				4/17/19 22:34			

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Project Location: Boston, MA

Sample Description:

Work Order: 19D0732

Date Received: 4/12/2019

Field Sample #: WPB-2-19-04-12

Sampled: 4/12/2019 10:30

Sample ID: 19D0732-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	<4.90	4.90	2.38	µg/L	1		625.1	4/15/19	4/16/19 16:45	BGL
Acenaphthylene	<4.90	4.90	2.33	µg/L	1		625.1	4/15/19	4/16/19 16:45	BGL
Anthracene	<4.90	4.90	2.66	µg/L	1		625.1	4/15/19	4/16/19 16:45	BGL
Benzo(g,h,i)perylene	<4.90	4.90	3.30	µg/L	1		625.1	4/15/19	4/16/19 16:45	BGL
Fluoranthene	<4.90	4.90	2.30	µg/L	1		625.1	4/15/19	4/16/19 16:45	BGL
Fluorene	<4.90	4.90	2.42	µg/L	1		625.1	4/15/19	4/16/19 16:45	BGL
Naphthalene	<4.90	4.90	2.61	µg/L	1		625.1	4/15/19	4/16/19 16:45	BGL
Phenanthrene	<4.90	4.90	2.69	µg/L	1		625.1	4/15/19	4/16/19 16:45	BGL
Pyrene	<4.90	4.90	3.45	µg/L	1		625.1	4/15/19	4/16/19 16:45	BGL
Surrogates	% Recovery		Recovery Limits		Flag/Qual					
2-Fluorophenol	33.4		15-110				4/16/19 16:45			
Phenol-d6	24.2		15-110				4/16/19 16:45			
Nitrobenzene-d5	60.8		30-130				4/16/19 16:45			
2-Fluorobiphenyl	63.6		30-130				4/16/19 16:45			
2,4,6-Tribromophenol	69.6		15-110				4/16/19 16:45			
p-Terphenyl-d14	74.0		30-130				4/16/19 16:45			

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Project Location: Boston, MA

Sample Description:

Work Order: 19D0732

Date Received: 4/12/2019

Field Sample #: WPB-2-19-04-12

Sampled: 4/12/2019 10:30

Sample ID: 19D0732-02

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	<0.200	0.200	0.184	µg/L	1		608.3	4/15/19	4/16/19 14:41	AYH
Aroclor-1221 [1]	<0.200	0.200	0.161	µg/L	1		608.3	4/15/19	4/16/19 14:41	AYH
Aroclor-1232 [1]	<0.200	0.200	0.199	µg/L	1		608.3	4/15/19	4/16/19 14:41	AYH
Aroclor-1242 [1]	<0.200	0.200	0.173	µg/L	1		608.3	4/15/19	4/16/19 14:41	AYH
Aroclor-1248 [1]	<0.200	0.200	0.190	µg/L	1		608.3	4/15/19	4/16/19 14:41	AYH
Aroclor-1254 [1]	<0.200	0.200	0.105	µg/L	1		608.3	4/15/19	4/16/19 14:41	AYH
Aroclor-1260 [1]	<0.200	0.200	0.196	µg/L	1		608.3	4/15/19	4/16/19 14:41	AYH
Surrogates	% Recovery		Recovery Limits		Flag/Qual					
Decachlorobiphenyl [1]	46.4		30-150				4/16/19 14:41			
Decachlorobiphenyl [2]	49.7		30-150				4/16/19 14:41			
Tetrachloro-m-xylene [1]	55.4		30-150				4/16/19 14:41			
Tetrachloro-m-xylene [2]	56.0		30-150				4/16/19 14:41			

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Project Location: Boston, MA

Sample Description:

Work Order: 19D0732

Date Received: 4/12/2019

Field Sample #: WPB-2-19-04-12

Sampled: 4/12/2019 10:30

Sample ID: 19D0732-02

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0		µg/L	1		EPA 200.8	4/13/19	4/16/19 14:52	QNW
Arsenic	10	5.0		µg/L	5		EPA 200.8	4/13/19	4/17/19 10:02	QNW
Cadmium	ND	1.0		µg/L	5	DL-15	EPA 200.8	4/13/19	4/17/19 10:02	QNW
Chromium	ND	50		µg/L	5	DL-15	EPA 200.8	4/13/19	4/17/19 10:02	QNW
Chromium, Trivalent	0.0			mg/L	5		Tri Chrome Calc.	4/13/19	4/17/19 10:02	QNW
Copper	ND	5.0		µg/L	5	DL-15	EPA 200.8	4/13/19	4/17/19 10:02	QNW
Iron	12	0.050		mg/L	1		EPA 200.7	4/13/19	4/15/19 15:48	EJB
Lead	ND	2.5		µg/L	5	DL-15	EPA 200.8	4/13/19	4/17/19 10:02	QNW
Mercury	ND	0.00010		mg/L	1		EPA 245.1	4/17/19	4/18/19 9:52	TBC
Nickel	ND	25		µg/L	5	DL-15	EPA 200.8	4/13/19	4/17/19 10:02	QNW
Selenium	ND	25	6.9	µg/L	5	DL-15	EPA 200.8	4/13/19	4/17/19 10:02	QNW
Silver	ND	0.20		µg/L	1		EPA 200.8	4/13/19	4/16/19 14:52	QNW
Zinc	ND	100		µg/L	5	DL-15	EPA 200.8	4/13/19	4/17/19 10:02	QNW

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Project Location: Boston, MA

Sample Description:

Work Order: 19D0732

Date Received: 4/12/2019

Field Sample #: WPB-2-19-04-12

Sampled: 4/12/2019 10:30

Sample ID: 19D0732-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	2000	100		mg/L	100	MS-07	EPA 300.0	4/17/19	4/17/19 6:17	IS
Chlorine, Residual	ND	0.020		mg/L	1	Z-01	SM21-22 4500 CL G	4/12/19	4/12/19 20:50	MJG
Hexavalent Chromium	ND	0.0040		mg/L	1		SM21-22 3500 Cr B	4/12/19	4/12/19 21:00	MJG
Phenol	ND	0.050		mg/L	1		EPA 420.1	4/16/19	4/17/19 12:30	LL
Total Suspended Solids	23	1.0		mg/L	1		SM21-22 2540D	4/16/19	4/16/19 12:30	LL
Silica Gel Treated HEM (SGT-HEM)	ND	1.6		mg/L	1		EPA 1664B	4/16/19	4/16/19 10:30	LL

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Project Location: Boston, MA

Sample Description:

Work Order: 19D0732

Date Received: 4/12/2019

Field Sample #: WPB-2-19-04-12

Sampled: 4/12/2019 10:30

Sample ID: 19D0732-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	6.87	0.075	0.024	mg/L	1		121, 4500NH3-BH		4/16/19 20:44	AAL
Cyanide	ND	0.005	0.001	mg/L	1		121, 4500CN-CE		4/16/19 13:54	AAL

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Sample Extraction Data**Prep Method: SW-846 3510C-608.3**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0732-01 [BOS-049-19-04-12]	B228258	1000	10.0	04/15/19
19D0732-02 [WPB-2-19-04-12]	B228258	1000	10.0	04/15/19

Prep Method: SW-846 5030B-624.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0732-01 [BOS-049-19-04-12]	B228548	5	5.00	04/18/19
19D0732-02 [WPB-2-19-04-12]	B228548	5	5.00	04/18/19

Prep Method: SW-846 3510C-625.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0732-01 [BOS-049-19-04-12]	B228217	1020	1.00	04/15/19
19D0732-02 [WPB-2-19-04-12]	B228217	1020	1.00	04/15/19

Prep Method: SW-846 3510C-625.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0732-01 [BOS-049-19-04-12]	B228377	1020	1.00	04/15/19
19D0732-02 [WPB-2-19-04-12]	B228377	1020	1.00	04/15/19

EPA 1664B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19D0732-01 [BOS-049-19-04-12]	B228305	800	04/16/19
19D0732-02 [WPB-2-19-04-12]	B228305	900	04/16/19

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0732-01 [BOS-049-19-04-12]	B228158	50.0	50.0	04/13/19
19D0732-02 [WPB-2-19-04-12]	B228158	50.0	50.0	04/13/19

Prep Method: EPA 200.8-EPA 200.8

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0732-01 [BOS-049-19-04-12]	B228159	50.0	50.0	04/13/19
19D0732-02 [WPB-2-19-04-12]	B228159	50.0	50.0	04/13/19

Prep Method: EPA 245.1-EPA 245.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0732-01 [BOS-049-19-04-12]	B228440	6.00	6.00	04/17/19
19D0732-02 [WPB-2-19-04-12]	B228440	6.00	6.00	04/17/19

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data

EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0732-01 [BOS-049-19-04-12]	B228187	10.0	10.0	04/15/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0732-02 [WPB-2-19-04-12]	B228387	10.0	10.0	04/17/19

EPA 420.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0732-01 [BOS-049-19-04-12]	B228306	50.0	50.0	04/16/19
19D0732-02 [WPB-2-19-04-12]	B228306	50.0	50.0	04/16/19

SM21-22 2540D

Lab Number [Field ID]	Batch	Initial [mL]	Date
19D0732-01 [BOS-049-19-04-12]	B228309	390	04/16/19
19D0732-02 [WPB-2-19-04-12]	B228309	500	04/16/19

SM21-22 3500 Cr B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0732-01 [BOS-049-19-04-12]	B228144	50.0	50.0	04/12/19
19D0732-02 [WPB-2-19-04-12]	B228144	50.0	50.0	04/12/19

SM21-22 4500 CL G

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0732-01 [BOS-049-19-04-12]	B228148	100	100	04/12/19
19D0732-02 [WPB-2-19-04-12]	B228148	100	100	04/12/19

Prep Method: EPA 200.8-Tri Chrome Calc.

Lab Number [Field ID]	Batch	Initial [mL]	Date
19D0732-01 [BOS-049-19-04-12]	B228159	50.0	04/13/19
19D0732-02 [WPB-2-19-04-12]	B228159	50.0	04/13/19

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QUALITY CONTROL
Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B228548 - SW-846 5030B
Blank (B228548-BLK1)

Prepared & Analyzed: 04/18/19

Acetone	ND	50.0	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.500	µg/L							
Benzene	ND	1.00	µg/L							
tert-Butyl Alcohol (TBA)	ND	20.0	µg/L							
Carbon Tetrachloride	ND	2.00	µg/L							
1,2-Dichlorobenzene	ND	2.00	µg/L							
1,3-Dichlorobenzene	ND	2.00	µg/L							
1,4-Dichlorobenzene	ND	2.00	µg/L							
cis-1,2-Dichloroethylene	ND	1.00	µg/L							
1,1-Dichloroethane	ND	2.00	µg/L							
1,1-Dichloroethylene	ND	2.00	µg/L							
trans-1,2-Dichloroethylene	ND	2.00	µg/L							
1,4-Dioxane	ND	50.0	µg/L							
Ethanol	ND	50.0	µg/L							
Ethylbenzene	ND	2.00	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	2.00	µg/L							
Methylene Chloride	ND	5.00	µg/L							
Tetrachloroethylene	ND	2.00	µg/L							
1,1,1-Trichloroethane	ND	2.00	µg/L							
1,1,2-Trichloroethane	ND	2.00	µg/L							
Trichloroethylene	ND	2.00	µg/L							
Xylenes (total)	ND	3.00	µg/L							
Vinyl Chloride	ND	2.00	µg/L							
m+p Xylene	ND	2.00	µg/L							
o-Xylene	ND	2.00	µg/L							
Surrogate: 1,2-Dichloroethane-d4	22.8		µg/L	25.0		91.3	70-130			
Surrogate: Toluene-d8	24.9		µg/L	25.0		99.7	70-130			
Surrogate: 4-Bromofluorobenzene	24.3		µg/L	25.0		97.2	70-130			

LCS (B228548-BS1)

Prepared & Analyzed: 04/18/19

Acetone	280	50.0	µg/L	200		138	70-160			†
tert-Amyl Methyl Ether (TAME)	17	0.500	µg/L	20.0		86.7	70-130			
Benzene	18	1.00	µg/L	20.0		92.0	65-135			
tert-Butyl Alcohol (TBA)	160	20.0	µg/L	200		79.9	40-160			†
Carbon Tetrachloride	19	2.00	µg/L	20.0		95.2	70-130			
1,2-Dichlorobenzene	22	2.00	µg/L	20.0		109	65-135			
1,3-Dichlorobenzene	22	2.00	µg/L	20.0		111	70-130			
1,4-Dichlorobenzene	21	2.00	µg/L	20.0		107	65-135			
cis-1,2-Dichloroethylene	19	1.00	µg/L	20.0		97.0	70-130			
1,1-Dichloroethane	20	2.00	µg/L	20.0		97.6	70-130			
1,1-Dichloroethylene	22	2.00	µg/L	20.0		109	50-150			
trans-1,2-Dichloroethylene	20	2.00	µg/L	20.0		101	70-130			
1,4-Dioxane	170	50.0	µg/L	200		85.5	40-130			†
Ethanol	270	50.0	µg/L	200		133	40-160			
Ethylbenzene	21	2.00	µg/L	20.0		107	60-140			
Methyl tert-Butyl Ether (MTBE)	20	2.00	µg/L	20.0		98.6	70-130			
Methylene Chloride	24	5.00	µg/L	20.0		118	60-140			
Tetrachloroethylene	21	2.00	µg/L	20.0		105	70-130			
1,1,1-Trichloroethane	18	2.00	µg/L	20.0		91.0	70-130			
1,1,2-Trichloroethane	21	2.00	µg/L	20.0		104	70-130			
Trichloroethylene	19	2.00	µg/L	20.0		95.8	65-135			
Vinyl Chloride	34	2.00	µg/L	20.0		172	5-195			

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QUALITY CONTROL
Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B228548 - SW-846 5030B
LCS (B228548-BS1)

Prepared & Analyzed: 04/18/19

m+p Xylene	43	2.00	µg/L	40.0		108	70-130			
o-Xylene	22	2.00	µg/L	20.0		111	70-130			
Surrogate: 1,2-Dichloroethane-d4	22.0		µg/L	25.0		88.2	70-130			
Surrogate: Toluene-d8	24.6		µg/L	25.0		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	25.7		µg/L	25.0		103	70-130			

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QUALITY CONTROL
Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B228377 - SW-846 3510C										
Blank (B228377-BLK1)				Prepared: 04/15/19 Analyzed: 04/17/19						
Benzo(a)anthracene (SIM)	ND	0.050	µg/L							
Benzo(a)pyrene (SIM)	ND	0.10	µg/L							
Benzo(b)fluoranthene (SIM)	ND	0.050	µg/L							
Benzo(k)fluoranthene (SIM)	ND	0.20	µg/L							
Bis(2-ethylhexyl)phthalate (SIM)	ND	1.0	µg/L							
Chrysene (SIM)	ND	0.20	µg/L							
Dibenz(a,h)anthracene (SIM)	ND	0.20	µg/L							
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.20	µg/L							
Pentachlorophenol (SIM)	ND	1.0	µg/L							
Pyrene (SIM)	ND	1.0	µg/L							
Surrogate: Nitrobenzene-d5	79.5		µg/L	100		79.5	30-130			
Surrogate: 2-Fluorobiphenyl	54.6		µg/L	100		54.6	30-130			
Surrogate: p-Terphenyl-d14	77.5		µg/L	100		77.5	30-130			
LCS (B228377-BS1)				Prepared: 04/15/19 Analyzed: 04/17/19						
Benzo(a)anthracene (SIM)	37.7	1.0	µg/L	50.0		75.3	33-143			
Benzo(a)pyrene (SIM)	42.5	2.0	µg/L	50.0		85.0	17-163			
Benzo(b)fluoranthene (SIM)	41.0	1.0	µg/L	50.0		82.1	24-159			
Benzo(k)fluoranthene (SIM)	41.0	4.0	µg/L	50.0		82.1	11-162			
Bis(2-ethylhexyl)phthalate (SIM)	46.1	20	µg/L	50.0		92.2	8-158			
Chrysene (SIM)	37.9	4.0	µg/L	50.0		75.7	17-168			
Dibenz(a,h)anthracene (SIM)	42.3	4.0	µg/L	50.0		84.5	10-227			
Indeno(1,2,3-cd)pyrene (SIM)	42.6	4.0	µg/L	50.0		85.3	10-171			
Pentachlorophenol (SIM)	27.0	20	µg/L	50.0		53.9	14-176			
Pyrene (SIM)	37.4	20	µg/L	50.0		74.8	52-120			
Surrogate: Nitrobenzene-d5	84.3		µg/L	100		84.3	30-130			
Surrogate: 2-Fluorobiphenyl	62.8		µg/L	100		62.8	30-130			
Surrogate: p-Terphenyl-d14	73.6		µg/L	100		73.6	30-130			
LCS Dup (B228377-BSD1)				Prepared: 04/15/19 Analyzed: 04/17/19						
Benzo(a)anthracene (SIM)	39.3	1.0	µg/L	50.0		78.5	33-143	4.16	53	
Benzo(a)pyrene (SIM)	44.4	2.0	µg/L	50.0		88.8	17-163	4.37	72	
Benzo(b)fluoranthene (SIM)	43.0	1.0	µg/L	50.0		86.0	24-159	4.71	71	
Benzo(k)fluoranthene (SIM)	43.2	4.0	µg/L	50.0		86.5	11-162	5.22	63	
Bis(2-ethylhexyl)phthalate (SIM)	46.7	20	µg/L	50.0		93.4	8-158	1.29	82	
Chrysene (SIM)	39.6	4.0	µg/L	50.0		79.3	17-168	4.59	87	
Dibenz(a,h)anthracene (SIM)	44.6	4.0	µg/L	50.0		89.1	10-227	5.30	126	
Indeno(1,2,3-cd)pyrene (SIM)	45.0	4.0	µg/L	50.0		89.9	10-171	5.30	99	‡
Pentachlorophenol (SIM)	26.6	20	µg/L	50.0		53.2	14-176	1.34	86	
Pyrene (SIM)	38.9	20	µg/L	50.0		77.7	52-120	3.78	49	
Surrogate: Nitrobenzene-d5	89.2		µg/L	100		89.2	30-130			
Surrogate: 2-Fluorobiphenyl	65.1		µg/L	100		65.1	30-130			
Surrogate: p-Terphenyl-d14	69.5		µg/L	100		69.5	30-130			

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QUALITY CONTROL
Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B228217 - SW-846 3510C										
Blank (B228217-BLK1)										
Prepared: 04/15/19 Analyzed: 04/16/19										
Acenaphthene	ND	5.00	µg/L							
Acenaphthylene	ND	5.00	µg/L							
Anthracene	ND	5.00	µg/L							
Benzo(g,h,i)perylene	ND	5.00	µg/L							
Fluoranthene	ND	5.00	µg/L							
Fluorene	ND	5.00	µg/L							
Naphthalene	ND	5.00	µg/L							
Phenanthrene	ND	5.00	µg/L							
Pyrene	ND	5.00	µg/L							
Surrogate: 2-Fluorophenol	80.5		µg/L	200		40.3	15-110			
Surrogate: Phenol-d6	59.2		µg/L	200		29.6	15-110			
Surrogate: Nitrobenzene-d5	64.4		µg/L	100		64.4	30-130			
Surrogate: 2-Fluorobiphenyl	64.6		µg/L	100		64.6	30-130			
Surrogate: 2,4,6-Tribromophenol	142		µg/L	200		71.1	15-110			
Surrogate: p-Terphenyl-d14	75.0		µg/L	100		75.0	30-130			
LCS (B228217-BS1)										
Prepared: 04/15/19 Analyzed: 04/16/19										
Acenaphthene	35.2	5.00	µg/L	50.0		70.4	47-145			
Acenaphthylene	36.3	5.00	µg/L	50.0		72.7	33-145			
Anthracene	38.6	5.00	µg/L	50.0		77.2	27-133			
Benzo(g,h,i)perylene	39.3	5.00	µg/L	50.0		78.5	10-219			
Fluoranthene	39.9	5.00	µg/L	50.0		79.8	26-137			
Fluorene	38.4	5.00	µg/L	50.0		76.7	59-121			
Naphthalene	35.3	5.00	µg/L	50.0		70.5	21-133			
Phenanthrene	38.8	5.00	µg/L	50.0		77.6	54-120			
Pyrene	39.6	5.00	µg/L	50.0		79.2	52-120			
Surrogate: 2-Fluorophenol	94.1		µg/L	200		47.0	15-110			
Surrogate: Phenol-d6	69.2		µg/L	200		34.6	15-110			
Surrogate: Nitrobenzene-d5	77.9		µg/L	100		77.9	30-130			
Surrogate: 2-Fluorobiphenyl	79.1		µg/L	100		79.1	30-130			
Surrogate: 2,4,6-Tribromophenol	171		µg/L	200		85.4	15-110			
Surrogate: p-Terphenyl-d14	87.3		µg/L	100		87.3	30-130			
LCS Dup (B228217-BSD1)										
Prepared: 04/15/19 Analyzed: 04/16/19										
Acenaphthene	34.5	5.00	µg/L	50.0		68.9	47-145	2.12	48	
Acenaphthylene	35.1	5.00	µg/L	50.0		70.2	33-145	3.53	74	
Anthracene	37.0	5.00	µg/L	50.0		73.9	27-133	4.32	66	
Benzo(g,h,i)perylene	37.9	5.00	µg/L	50.0		75.9	10-219	3.42	97	
Fluoranthene	38.6	5.00	µg/L	50.0		77.2	26-137	3.31	66	
Fluorene	36.4	5.00	µg/L	50.0		72.9	59-121	5.11	38	
Naphthalene	34.3	5.00	µg/L	50.0		68.6	21-133	2.73	65	
Phenanthrene	36.6	5.00	µg/L	50.0		73.2	54-120	5.84	39	
Pyrene	37.5	5.00	µg/L	50.0		75.0	52-120	5.34	49	
Surrogate: 2-Fluorophenol	91.0		µg/L	200		45.5	15-110			
Surrogate: Phenol-d6	66.6		µg/L	200		33.3	15-110			
Surrogate: Nitrobenzene-d5	75.4		µg/L	100		75.4	30-130			
Surrogate: 2-Fluorobiphenyl	75.8		µg/L	100		75.8	30-130			
Surrogate: 2,4,6-Tribromophenol	161		µg/L	200		80.7	15-110			
Surrogate: p-Terphenyl-d14	81.6		µg/L	100		81.6	30-130			

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QUALITY CONTROL
Polychlorinated Biphenyls By GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B228258 - SW-846 3510C										
Blank (B228258-BLK1)										
Prepared: 04/15/19 Analyzed: 04/16/19										
Aroclor-1016	ND	0.200	µg/L							
Aroclor-1016 [2C]	ND	0.200	µg/L							
Aroclor-1221	ND	0.200	µg/L							
Aroclor-1221 [2C]	ND	0.200	µg/L							
Aroclor-1232	ND	0.200	µg/L							
Aroclor-1232 [2C]	ND	0.200	µg/L							
Aroclor-1242	ND	0.200	µg/L							
Aroclor-1242 [2C]	ND	0.200	µg/L							
Aroclor-1248	ND	0.200	µg/L							
Aroclor-1248 [2C]	ND	0.200	µg/L							
Aroclor-1254	ND	0.200	µg/L							
Aroclor-1254 [2C]	ND	0.200	µg/L							
Aroclor-1260	ND	0.200	µg/L							
Aroclor-1260 [2C]	ND	0.200	µg/L							
Surrogate: Decachlorobiphenyl	1.09		µg/L	2.00		54.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.11		µg/L	2.00		55.6	30-150			
Surrogate: Tetrachloro-m-xylene	1.17		µg/L	2.00		58.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.13		µg/L	2.00		56.4	30-150			
LCS (B228258-BS1)										
Prepared: 04/15/19 Analyzed: 04/16/19										
Aroclor-1016	0.340	0.200	µg/L	0.500		68.0	50-140			
Aroclor-1016 [2C]	0.340	0.200	µg/L	0.500		67.9	50-140			
Aroclor-1260	0.311	0.200	µg/L	0.500		62.2	8-140			
Aroclor-1260 [2C]	0.328	0.200	µg/L	0.500		65.7	8-140			
Surrogate: Decachlorobiphenyl	1.24		µg/L	2.00		62.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.27		µg/L	2.00		63.6	30-150			
Surrogate: Tetrachloro-m-xylene	1.22		µg/L	2.00		61.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.18		µg/L	2.00		59.1	30-150			
LCS Dup (B228258-BSD1)										
Prepared: 04/15/19 Analyzed: 04/16/19										
Aroclor-1016	0.307	0.200	µg/L	0.500		61.5	50-140	10.1		
Aroclor-1016 [2C]	0.303	0.200	µg/L	0.500		60.6	50-140	11.4		
Aroclor-1260	0.276	0.200	µg/L	0.500		55.2	8-140	11.9		
Aroclor-1260 [2C]	0.298	0.200	µg/L	0.500		59.7	8-140	9.63		
Surrogate: Decachlorobiphenyl	1.09		µg/L	2.00		54.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.14		µg/L	2.00		56.8	30-150			
Surrogate: Tetrachloro-m-xylene	1.10		µg/L	2.00		55.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.09		µg/L	2.00		54.6	30-150			

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QUALITY CONTROL
Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B228158 - EPA 200.7										
Blank (B228158-BLK1)				Prepared: 04/13/19 Analyzed: 04/15/19						
Iron	ND	0.050	mg/L							
LCS (B228158-BS1)				Prepared: 04/13/19 Analyzed: 04/15/19						
Iron	3.95	0.050	mg/L	4.00		98.8	85-115			
LCS Dup (B228158-BSD1)				Prepared: 04/13/19 Analyzed: 04/15/19						
Iron	3.95	0.050	mg/L	4.00		98.6	85-115	0.131	20	
Batch B228159 - EPA 200.8										
Blank (B228159-BLK1)				Prepared: 04/13/19 Analyzed: 04/15/19						
Antimony	ND	1.0	µg/L							
Arsenic	ND	1.0	µg/L							
Cadmium	ND	0.20	µg/L							
Chromium	ND	10	µg/L							
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							
Nickel	ND	5.0	µg/L							
Selenium	ND	5.0	µg/L							
Silver	ND	0.20	µg/L							
Zinc	ND	20	µg/L							
LCS (B228159-BS1)				Prepared: 04/13/19 Analyzed: 04/15/19						
Antimony	519	10	µg/L	500		104	85-115			
Arsenic	507	10	µg/L	500		101	85-115			
Cadmium	511	2.0	µg/L	500		102	85-115			
Chromium	512	100	µg/L	500		102	85-115			
Copper	1010	10	µg/L	1000		101	85-115			
Lead	503	5.0	µg/L	500		101	85-115			
Nickel	513	50	µg/L	500		103	85-115			
Selenium	497	50	µg/L	500		99.4	85-115			
Silver	507	2.0	µg/L	500		101	85-115			
Zinc	1020	200	µg/L	1000		102	85-115			
LCS Dup (B228159-BSD1)				Prepared: 04/13/19 Analyzed: 04/15/19						
Antimony	513	10	µg/L	500		103	85-115	1.09	20	
Arsenic	497	10	µg/L	500		99.5	85-115	2.04	20	
Cadmium	507	2.0	µg/L	500		101	85-115	0.767	20	
Chromium	507	100	µg/L	500		101	85-115	1.03	20	
Copper	1010	10	µg/L	1000		101	85-115	0.183	20	
Lead	498	5.0	µg/L	500		99.6	85-115	1.05	20	
Nickel	513	50	µg/L	500		103	85-115	0.0582	20	
Selenium	490	50	µg/L	500		98.0	85-115	1.45	20	
Silver	498	2.0	µg/L	500		99.5	85-115	1.83	20	
Zinc	1020	200	µg/L	1000		102	85-115	0.121	20	

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QUALITY CONTROL
Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B228159 - EPA 200.8

Duplicate (B228159-DUP1)		Source: 19D0732-01		Prepared: 04/13/19 Analyzed: 04/15/19						
Antimony	ND	1.0	µg/L		ND			NC	20	
Arsenic	ND	1.0	µg/L		ND			NC	20	
Cadmium	ND	0.20	µg/L		ND			NC	20	
Chromium	ND	10	µg/L		ND			NC	20	
Copper	2.59	1.0	µg/L		2.48			4.35	20	
Lead	1.51	0.50	µg/L		1.51			0.262	20	
Nickel	ND	5.0	µg/L		ND			NC	20	
Selenium	ND	5.0	µg/L		ND			NC	20	
Silver	ND	0.20	µg/L		ND			NC	20	
Zinc	ND	20	µg/L		ND			NC	20	

Matrix Spike (B228159-MS1)		Source: 19D0732-01		Prepared: 04/13/19 Analyzed: 04/15/19						
Antimony	513	10	µg/L	500	ND	103	70-130			
Arsenic	503	10	µg/L	500	ND	101	70-130			
Cadmium	502	2.0	µg/L	500	ND	100	70-130			
Chromium	508	100	µg/L	500	ND	102	70-130			
Copper	1000	10	µg/L	1000	ND	100	70-130			
Lead	510	5.0	µg/L	500	ND	102	70-130			
Nickel	513	50	µg/L	500	ND	103	70-130			
Selenium	497	50	µg/L	500	ND	99.5	70-130			
Silver	495	2.0	µg/L	500	ND	99.0	70-130			
Zinc	1030	200	µg/L	1000	ND	103	70-130			

Batch B228440 - EPA 245.1

Blank (B228440-BLK1)		Prepared: 04/17/19 Analyzed: 04/18/19								
Mercury	ND	0.00010	mg/L							
LCS (B228440-BS1)		Prepared: 04/17/19 Analyzed: 04/18/19								
Mercury	0.00401	0.00010	mg/L	0.00400		100	85-115			
LCS Dup (B228440-BSD1)		Prepared: 04/17/19 Analyzed: 04/18/19								
Mercury	0.00398	0.00010	mg/L	0.00400		99.6	85-115	0.595	20	
Duplicate (B228440-DUP1)		Source: 19D0732-01		Prepared: 04/17/19 Analyzed: 04/18/19						
Mercury	ND	0.00010	mg/L		ND			NC	30	
Matrix Spike (B228440-MS1)		Source: 19D0732-01		Prepared: 04/17/19 Analyzed: 04/18/19						
Mercury	0.00393	0.00010	mg/L	0.00400	ND	98.3	75-125			

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QUALITY CONTROL
Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B228144 - SM21-22 3500 Cr B										
Blank (B228144-BLK1)				Prepared & Analyzed: 04/15/19						
Hexavalent Chromium	ND	0.0040	mg/L							
LCS (B228144-BS1)				Prepared & Analyzed: 04/15/19						
Hexavalent Chromium	0.11	0.0040	mg/L	0.100		106	83.2-114			
LCS Dup (B228144-BSD1)				Prepared & Analyzed: 04/15/19						
Hexavalent Chromium	0.11	0.0040	mg/L	0.100		107	83.2-114	1.20	7.51	
Duplicate (B228144-DUP1)				Source: 19D0732-02			Prepared & Analyzed: 04/15/19			
Hexavalent Chromium	ND	0.0040	mg/L		ND			NC	56.3	
Matrix Spike (B228144-MS1)				Source: 19D0732-02			Prepared & Analyzed: 04/15/19			
Hexavalent Chromium	0.056	0.0080	mg/L	0.100	ND	56.2	10.8-151			
Batch B228148 - SM21-22 4500 CL G										
Blank (B228148-BLK1)				Prepared & Analyzed: 04/12/19						
Chlorine, Residual	ND	0.020	mg/L							
LCS (B228148-BS1)				Prepared & Analyzed: 04/12/19						
Chlorine, Residual	1.4	0.020	mg/L	1.29		111	76-135			
LCS Dup (B228148-BSD1)				Prepared & Analyzed: 04/12/19						
Chlorine, Residual	1.5	0.020	mg/L	1.29		113	76-135	2.31	7.41	
Batch B228187 - EPA 300.0										
Blank (B228187-BLK1)				Prepared & Analyzed: 04/15/19						
Chloride	ND	1.0	mg/L							
LCS (B228187-BS1)				Prepared & Analyzed: 04/15/19						
Chloride	5.4	1.0	mg/L	5.00		108	90-110			
LCS Dup (B228187-BSD1)				Prepared & Analyzed: 04/15/19						
Chloride	5.4	1.0	mg/L	5.00		108	90-110	0.198	20	
Duplicate (B228187-DUP2)				Source: 19D0732-01			Prepared & Analyzed: 04/15/19			
Chloride	310	10	mg/L		310			0.0724	20	
Matrix Spike (B228187-MS2)				Source: 19D0732-01			Prepared & Analyzed: 04/15/19			
Chloride	340	10	mg/L	50.0	310	59.9	* 80-120			MS-07

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QUALITY CONTROL
Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B228305 - EPA 1664B										
Blank (B228305-BLK1)				Prepared & Analyzed: 04/16/19						
Silica Gel Treated HEM (SGT-HEM)	ND	1.4	mg/L							
LCS (B228305-BS1)				Prepared & Analyzed: 04/16/19						
Silica Gel Treated HEM (SGT-HEM)	9.3		mg/L	10.0		93.0	64-132			
Duplicate (B228305-DUP1)				Source: 19D0732-01		Prepared & Analyzed: 04/16/19				
Silica Gel Treated HEM (SGT-HEM)	ND	1.6	mg/L		ND			NC	18	
Matrix Spike (B228305-MS1)				Source: 19D0732-01		Prepared & Analyzed: 04/16/19				
Silica Gel Treated HEM (SGT-HEM)	130	14	mg/L	100	ND	129	64-132			
Batch B228306 - EPA 420.1										
Blank (B228306-BLK1)				Prepared: 04/16/19 Analyzed: 04/17/19						
Phenol	ND	0.050	mg/L							
LCS (B228306-BS1)				Prepared: 04/16/19 Analyzed: 04/17/19						
Phenol	0.47	0.050	mg/L	0.500		93.9	72.7-125			
LCS Dup (B228306-BSD1)				Prepared: 04/16/19 Analyzed: 04/17/19						
Phenol	0.48	0.050	mg/L	0.500		96.9	72.7-125	3.17	9.52	
Batch B228309 - SM21-22 2540D										
Blank (B228309-BLK1)				Prepared & Analyzed: 04/16/19						
Total Suspended Solids	ND	2.5	mg/L							
LCS (B228309-BS1)				Prepared & Analyzed: 04/16/19						
Total Suspended Solids	188	10	mg/L	200		94.0	64.3-117			
Batch B228387 - EPA 300.0										
Blank (B228387-BLK1)				Prepared & Analyzed: 04/17/19						
Chloride	ND	1.0	mg/L							
LCS (B228387-BS1)				Prepared & Analyzed: 04/17/19						
Chloride	5.4	1.0	mg/L	5.00		107	90-110			
LCS Dup (B228387-BSD1)				Prepared & Analyzed: 04/17/19						
Chloride	5.4	1.0	mg/L	5.00		107	90-110	0.0560	20	

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QUALITY CONTROL
Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B228387 - EPA 300.0										
Duplicate (B228387-DUP1)		Source: 19D0732-02			Prepared & Analyzed: 04/17/19					
Chloride	2000	100	mg/L		2000			0.00357	20	
Matrix Spike (B228387-MS1)		Source: 19D0732-02			Prepared & Analyzed: 04/17/19					
Chloride	2300	100	mg/L	500	2000	71.9	* 80-120			MS-07

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

LCS

608.3

Lab Sample ID: B228258-BS1 Date(s) Analyzed: 04/16/2019 04/16/2019
Instrument ID (1): ECD1 Instrument ID (2): ECD1
GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.340	
	2	0.000	0.000	0.000	0.340	0.0
Aroclor-1260	1	0.000	0.000	0.000	0.311	
	2	0.000	0.000	0.000	0.328	5.6

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES****LCS Dup***608.3*

Lab Sample ID: B228258-BSD1 Date(s) Analyzed: 04/16/2019 04/16/2019
Instrument ID (1): ECD1 Instrument ID (2): ECD1
GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.307	
	2	0.000	0.000	0.000	0.303	2.3
Aroclor-1260	1	0.000	0.000	0.000	0.276	
	2	0.000	0.000	0.000	0.298	6.2

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
DL-15	Sample required a dilution due to low internal standard recovery of the lesser diluted digestion, reporting limit is elevated.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
MS-07	Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
V-34	Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.
Z-01	SM4500 test had calibration points outside of acceptable back calculated recoveries. Reanalysis yielded similar nonconformance.

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
608.3 in Water	
Aroclor-1016	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1016 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1221	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1221 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1232	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1232 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1242	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1242 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1248	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1248 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1254	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1254 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1260	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1260 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
624.1 in Water	
Acetone	CT,NY,MA,NH
tert-Amyl Methyl Ether (TAME)	MA
Benzene	CT,NY,MA,NH,RI,NC,ME,VA
tert-Butyl Alcohol (TBA)	NY,MA
Carbon Tetrachloride	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,3-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
cis-1,2-Dichloroethylene	NY,MA
1,1-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
trans-1,2-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dioxane	MA
Ethanol	NY,MA,NH
Ethylbenzene	CT,NY,MA,NH,RI,NC,ME,VA
Methyl tert-Butyl Ether (MTBE)	NY,MA,NH,NC
Methylene Chloride	CT,NY,MA,NH,RI,NC,ME,VA
Naphthalene	NY,MA,NC
Tetrachloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
1,1,1-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1,2-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Trichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Xylenes (total)	NY,MA,NH,VA
Vinyl Chloride	CT,NY,MA,NH,RI,NC,ME,VA
m+p Xylene	CT,NY,MA,NH,RI,NC
o-Xylene	CT,NY,MA,NH,RI,NC
625.1 in Water	
Acenaphthene	CT,MA,NH,NY,NC,RI,ME,VA
Acenaphthylene	CT,MA,NH,NY,NC,RI,ME,VA
Anthracene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(g,h,i)perylene	CT,MA,NH,NY,NC,RI,ME,VA

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
625.1 in Water	
1,3-Dichlorobenzene	MA,NC
1,4-Dichlorobenzene	MA,NC
1,2-Dichlorobenzene	MA,NC
Fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
Fluorene	CT,MA,NH,NY,NC,RI,ME,VA
Naphthalene	CT,MA,NH,NY,NC,RI,ME,VA
Phenanthrene	CT,MA,NH,NY,NC,RI,ME,VA
Phenol	CT,MA,NH,NY,NC,RI,ME,VA
Pyrene	CT,MA,NH,NY,NC,RI,ME,VA
2-Fluorophenol	NC
2-Fluorophenol	NC,VA
Phenol-d6	VA
Nitrobenzene-d5	VA
EPA 200.7 in Water	
Iron	CT,MA,NH,NY,RI,NC,ME,VA
EPA 200.8 in Water	
Antimony	CT,MA,NH,NY,RI,NC,ME,VA
Arsenic	CT,MA,NH,NY,RI,NC,ME,VA
Cadmium	CT,MA,NH,NY,RI,NC,ME,VA
Chromium	CT,MA,NH,NY,RI,NC,ME,VA
Copper	CT,MA,NH,NY,RI,NC,ME,VA
Lead	CT,MA,NH,NY,RI,NC,ME,VA
Nickel	CT,MA,NH,NY,RI,NC,ME,VA
Selenium	CT,MA,NH,NY,RI,NC,ME,VA
Silver	CT,MA,NH,NY,RI,NC,ME,VA
Zinc	CT,MA,NH,NY,RI,NC,ME,VA
EPA 245.1 in Water	
Mercury	CT,MA,NH,RI,NY,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
EPA 420.1 in Water	
Phenol	CT,MA,NH,NY,RI,NC,ME,VA
SM19-22 4500 NH3 C in Water	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
SM21-22 2540D in Water	
Total Suspended Solids	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 3500 Cr B in Water	
Hexavalent Chromium	NY,CT,NH,RI,ME,VA,NC
SM21-22 4500 CL G in Water	
Chlorine, Residual	CT,MA,RI,ME
SM21-22 4500 CN E in Water	
Cyanide	CT,MA,NH,NY,RI,NC,ME,VA

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The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2019
CT	Connecticut Department of Public Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2019
FL	Florida Department of Health	E871027 NELAP	06/30/2019
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2019
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2019
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2019
NC-DW	North Carolina Department of Health	25703	07/31/2019

Company Name: VERTEX Address: 100 N. Washington St Boston MA Phone: 781-974-7895 Project Name: WFB-2 RGP Project Location: Boston MA Project Number: 37026 Project Manager: B. Sivonen Con-Test Quote Name/Number: Invoice Recipient: B. Sivonen Sampled By: B. Sivonen		Requested Turnaround Time: 7-Day ☐ 10-Day ☐ Due Date: 5 Day Analysis Requested: 1-Day ☐ 3-Day ☐ 2-Day ☐ 4-Day ☐ Format: PDF ☒ EXCEL ☐ Other: EQUIS CLP Like Data Pkg Required: ☐ Email To: b.sivonen@vertexeng.com Fax To #:		Matrix Codes: GW = Ground Water WW = Waste Water DW = Drinking Water A = Air S = Soil SL = Sludge SOL = Solid O = Other (please define)		Preservation Codes: I = Iced H = HCL M = Methanol N = Nitric Acid S = Sulfuric Acid B = Sodium Bisulfate X = Sodium Hydroxide T = Sodium Thiosulfate O = Other (please define)		Container Codes: A = Amber Glass G = Glass P = Plastic ST = Sterile V = Vial S = Summa Canister T = Tedlar Bag O = Other (please define)		PCB ONLY ☐ Soxhlet ☐ Non Soxhlet					
Client Sample ID / Description 1 RAS-049-19-04-12 2 WFB-2-19-04-12		Beginning Date/Time 4/12/19 9:00 4/12/19 10:30		Ending Date/Time 4/12/19 9:00 4/12/19 10:30		Composite ☒ ☐		Grab ☒ ☐		Matrix Code GW GW		Conc Code U D		ANALYSIS REQUESTED AMMONIA Chloride ☒ TRC, TSS, Antimony ☒ Arsenic, Cadmium ☒ CR III, CR IV ☒ Cu, Fe, Pb, Se ☒ Hg, Mn, Zn ☒ BTEX, Benzene ☒ 14-Dioxane ☒ Acetone, Phenol ☒ Carbon Tet ☒ See COMMENTS	
Comments: * Report Metals as total 1,2 Dichlorobenzene, 1,3-Dichlorobenzene, PCBs, TPH Halogenated VOCs, non-halogenated SVOCs, Ethanol Group 1 & 2 PAHs, Halogenated SVOCs, MTBE, TAME, Tert-Butyl Alcohol															
Relinquished by (signature): Paul Chatterney Date/Time: 4/12/19 15:53		Special Requirements: ☒ MA MCP Required ☐ MCP Certification Form Required ☐ CT RCP Required ☐ RCP Certification Form Required		MA State DW Required ☐		Project Entity ☒ Government ☐ Federal ☐ City		Municipality ☐ 21 J ☐ Brownfield		MWRA ☐ School ☐ MBTA		WRTA ☐ Chromatogram ☐ AIHA-LAP, LLC		NEIAC and AIHA-LAP, LLC Accredited www.contestlabs.com	
Relinquished by (signature): Paul Chatterney Date/Time: 4/12/19 18:35		Relinquished by (signature): Paul Chatterney Date/Time: 4/12/19 20:20		Relinquished by (signature): Paul Chatterney Date/Time: 4/12/19 20:20		Relinquished by (signature): Paul Chatterney Date/Time: 4/12/19 20:20		Relinquished by (signature): Paul Chatterney Date/Time: 4/12/19 20:20		Relinquished by (signature): Paul Chatterney Date/Time: 4/12/19 20:20		Relinquished by (signature): Paul Chatterney Date/Time: 4/12/19 20:20		Relinquished by (signature): Paul Chatterney Date/Time: 4/12/19 20:20	

Parameter

A. Inorganics

Ammonia

Chloride

Total Residual Chlorine

Total Suspended Solids

Antimony

Arsenic

Cadmium

Chromium III

Chromium VI

Copper

Iron

Lead

Mercury

Nickel

Selenium

Silver Zinc

Cyanide

B. Non-Halogenated VOCs

Total BTEX

Benzene

1,4-Dioxane

Acetone

Phenol

C. Halogenated VOCs

Carbon Tetrachloride

1,2-Dichlorobenzene

1,3-Dichlorobenzene

1,4-Dichlorobenzene

Total Dichlorobenzene

1,1-Dichloroethane

1,2-Dichloroethane

1,1-Dichloroethylene

Ethylene Dibromide

Methylene Chloride

1,1,1-Trichloroethane

1,1,2-Trichloroethane

Trichloroethylene

Tetrachloroethylene

cis-1,2-Dichloroethylene

Vinyl Chloride

D. Non-Halogenated SVOCs

Total Phthalates

Diethylhexyl Phthalate

Total Group I PAHs (sum of the
italicized parameters below)

I Have Not Confirmed Sample Container
Numbers With Lab Staff Before Relinquishing
Over Samples _____



con-test®
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False
Statement will be brought to the attention of the Client - State True or False

Client Vertex

Received By MP

Date 4/12/19

Time 20:20

How were the samples
received?

In Cooler T

No Cooler _____

On Ice T

No Ice _____

Direct from Sampling _____

Ambient _____

Melted Ice _____

Were samples within
Temperature? 2-6°C T

By Gun # 3

Actual Temp - 4.1, 4.3

By Blank # _____

Actual Temp - _____

Was Custody Seal Intact? N/A

Were Samples Tampered with? N/A

Was COC Relinquished? T

Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T

Were samples received within holding time? T

Did COC include all Client T

Analysis T

Sampler Name T

pertinent Information? Project T

ID's T

Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F

Are there Rushes? F

Are there Short Holds? T

Is there enough Volume? T

Is there Headspace where applicable? F

Proper Media/Containers Used? T

Were trip blanks received? F

Do all samples have the proper pH? _____

Who was notified? _____

Who was notified? _____

Who was notified? Miranda

MS/MSD? F

Is splitting samples required? F

On COC? F

Acid 1.2

Base 1.2

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.	<u>5</u>	1 Liter Plastic	<u>4</u>	16 oz Amb.	
HCL-	<u>4</u>	500 mL Amb.	<u>4</u>	500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	<u>6</u>	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass	<u>4</u>	Other Plastic		Encore	
Thiosulfate-	<u>8</u>	SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments: