



HALEY & ALDRICH, INC.
465 Medford St.
Suite 220
Boston, MA 02129
617.886.7400

4 April 2016
File No. 42035-000

US Environmental Protection Agency
Dewatering GP Processing
Municipal Assistance Unit (CMU)
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Attention: Ms. Suzanne Warner

Subject: Notice of Intent (NOI)
Temporary Construction Dewatering
Myles Standish Hall
Boston University
610 Beacon Street
Boston, Massachusetts

Ladies and Gentlemen:

On behalf of our client, Miller Dyer Spears, and in accordance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Dewatering Activities – Massachusetts General Permit, MAG070000, 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 General Permit. Temporary dewatering is planned in support of the proposed renovations to Myles Standish Hall and the attached Annex at 610 Beacon Street in Boston, Massachusetts, as shown on Figure 1, Project Locus. We anticipate dewatering will be conducted, as necessary, during the proposed renovations.

SITE DESCRIPTION

The site is currently occupied by the Myles Standish Hall and attached Annex, constructed in 1925. The triangular shaped site is bounded by Beacon Street to the south, Bay State Road to the north, and Raleigh Street to the west, as shown on Figure 2, Site and Subsurface Exploration Location Plan. Existing grades are relatively flat, ranging between approximately El. 16.5 and El. 15.5. Elevations in this report are in feet and are referenced to Boston City Base datum (BCB).

The site is predominantly surrounded by hardscape with surface grades at sidewalk level in the vicinity of El. 17. A bituminous asphalt pavement median exists at the intersection of Beacon Street and Bay State Road known as the pocket park.

PROPOSED CONSTRUCTION AND MANAGEMENT OF DEWATERING EFFLUENT

The project consists of a major renovation to the existing Myles Standish Hall (Main Building) and Myles Annex (Annex). No new basement space is planned; however, we understand that new elevators will be added in three locations, two storm storage tanks will be placed in the Main Building basement and several slab areas will be removed and replaced in association with new pit construction. We understand that proposed site grading will match current grades. New landscaping, sidewalks, and other surface features are planned around the building.

Where possible, the project will utilize on-site recharge of the dewatering effluent; however, where on-site recharge is not feasible, the project plans to direct the dewatering effluent to the existing storm drain system, which drains to the Charles River, as shown in Figure 3, Proposed Discharge Route. Site work and associated dewatering are anticipated to begin in June 2016 and are estimated to be complete around September 2018. As the building is occupied student housing, project work is phased to be performed during the summer months.

The contractor will design, operate, and maintain dewatering and sedimentation control systems for off-site discharge. The systems will be designed to meet the permit requirements for suspended solids, pH, and other constituents in the effluent stream prior to discharge into the nearby storm drain. A dewatering general permit is considered the appropriate permit because arsenic and iron were detected but at levels below NPDES RGP Category III Freshwater Criteria and there are no other chemical concentrations of concern (Table I).

Haley & Aldrich will perform the required sampling and testing of the dewatering effluent and will report the results as required by the permit. The Contractor's sedimentation system and/or dewatering procedures will be designed as necessary to comply with the Permit Discharge Criteria.

CONTACT INFORMATION

Applicant:

Miller Dyer Spears, Inc.
99 Chauncy Street
Boston, Massachusetts 02211
Attention: James Loftus
Tel: 617.338.5350

Representative preparing this application:

Haley & Aldrich, Inc.
465 Medford Street, Suite 2200
Boston, Massachusetts 02129-1400
Attention: Damian R. Siebert, P.E., Lead
Underground Engineer
Tel: 617.886.7399

ANALYTICAL TESTING

On 13 January 2016, Haley & Aldrich, Inc. collected one groundwater sample from groundwater observation well HA16-204, located as shown on Figure 2. The sample was submitted to Alpha Analytical Laboratory in Westborough, Massachusetts, a MassDEP certified laboratory. Groundwater quality data are summarized in Table I.

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 yours,
HALEY & ALDRICH, INC.


Taylor S. LaBrecque


Damian R. Siebert, P.E.
Lead Underground Engineer

Attachments:

Table I – Summary of Groundwater Quality Data

Figure 1 – Project Locus

Figure 2 – Site and Subsurface Exploration Location Plan

Figure 3 – Proposed Discharge Route

- Appendix A - “Suggested Notice of Intent” (NOI) form as provided in Appendix V of the NPDES Dewatering General Permit
- Appendix B - Boston Water and Sewer Commission – Dewatering Discharge Permit Application
- Appendix C - Areas of Critical Environmental Concern
- Appendix D - National Register of Historic Places and Massachusetts Historical Commission Documentation
- Appendix E - Endangered Species Act Documentation
- Appendix F - Laboratory Data Reports

TABLE I
SUMMARY OF GROUNDWATER QUALITY DATA
BOSTON UNIVERSITY
MYLES STANDISH HALL
BOSTON, MA
FILE NO. 42035-000

LOCATION	HA16-204	NPDES DGP
SAMPLING DATE	1/13/2016	Discharge
LAB SAMPLE ID	L1601065-01	Limitations and Monitoring Requirements
VOCs (ug/L)		
Total BTEX	ND	-
Total VOCs	ND	
SVOCs by 8270 (ug/L)		
Total Group I PAHs	ND	-
Total Group II PAHs	ND	-
Total SVOCs by 8270	ND	-
SVOCs by 8270-SIM (ug/L)		
Group I PAHs	ND	-
Group II PAHs	ND	-
Total SVOCs by 8270-SIM	ND	-
Total Metals (ug/L)		
Antimony, Total	ND(2)	-
Arsenic, Total	0.85	-
Cadmium, Total	ND(0.2)	-
Chromium, Total	ND(2)	-
Chromium, Hexavalent (ug/L)	ND(10)	-
Copper, Total	ND(1)	-
Iron, Total	330	-
Lead, Total	ND(0.5)	-
Mercury, Total	ND(0.2)	-
Nickel, Total	ND(2)	-
Selenium, Total	ND(5)	-
Silver, Total	ND(0.4)	-
Zinc, Total	ND(10)	-
TPH (ug/L)	ND(4000)	-
PCBs (ug/L)		
Total PCBs	ND	-
General Chemistry		
pH (s.u.)	7.38	6.5 to 8
Solids, Total Suspended (ug/L)	ND(5000)	50,000 ²
Oil and Grease (mg/L)	-	15 ³
Cyanide, Total (ug/L)	ND(5)	-
Chlorine, Total Residual (ug/L)	ND(20)	-
Phenolics, Total (ug/L)	ND(30)	-
Chloride (ug/L)	790000	-

Notes & Abbreviations:

ug/L - micrograms per liter

ND (1.0) - not detected, value is the reporting limit

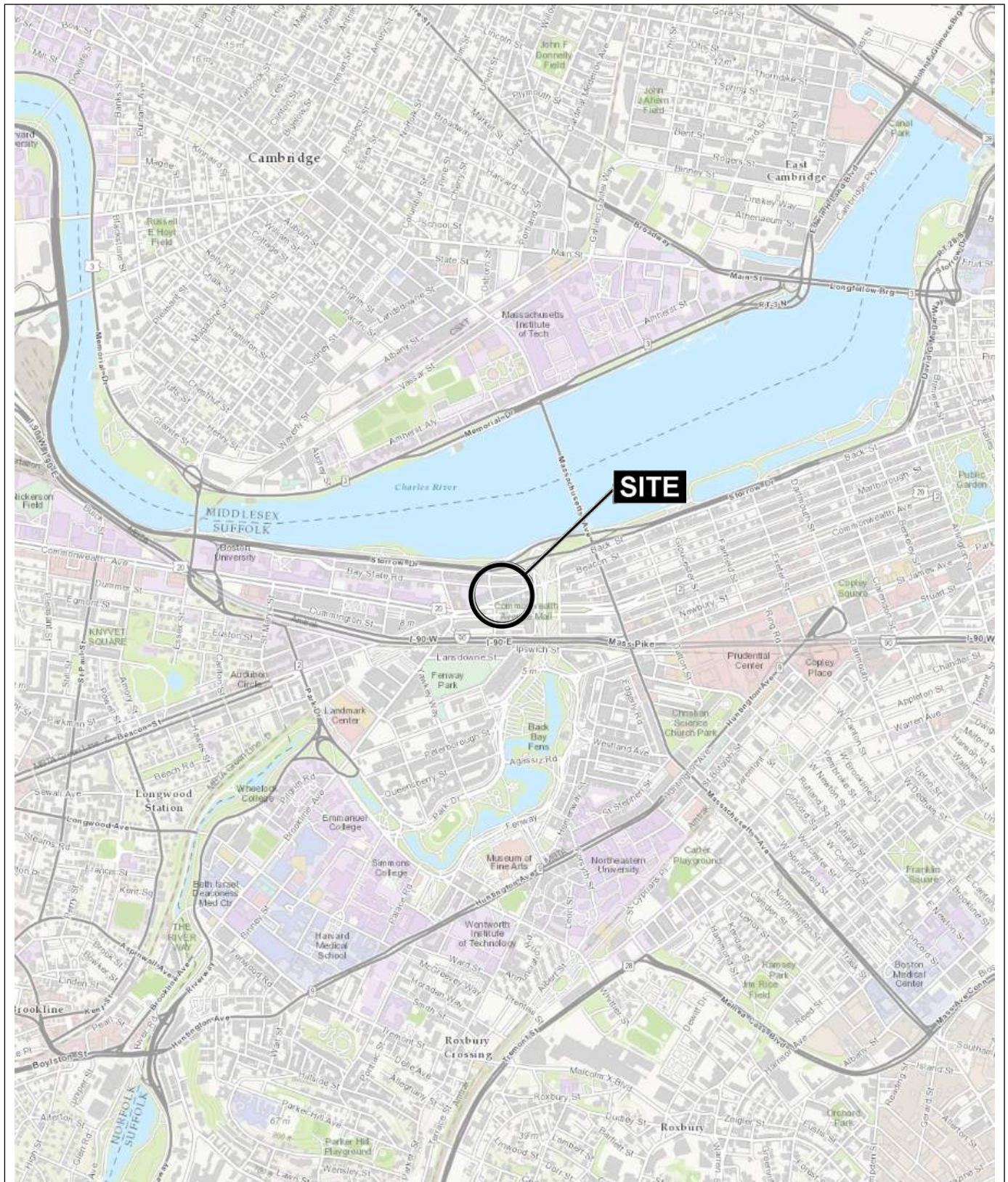
NA - not available/no standard

1. **Bold** values exceed applicable NPDES RGP Criteria at **zero** dilution.

2. TSS is reported as the monthly average - maximum daily limit is 100,000 ug/L

3. Oil and grease analysis required if a sheen is present in discharge or in standing water prior to discharge

4. Effluent concentrations must meet discharge limits and monitoring requirements set forth in the National Pollutant Discharge Elimination System (NPDES) General Permit for Dewatering Activities - Massachusetts General Permit, MAG070000

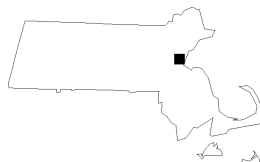


MAP SOURCE: ESRI

SITE COORDINATES: 42°20'59"N, 71°5'40"W

**HALEY
ALDRICH**

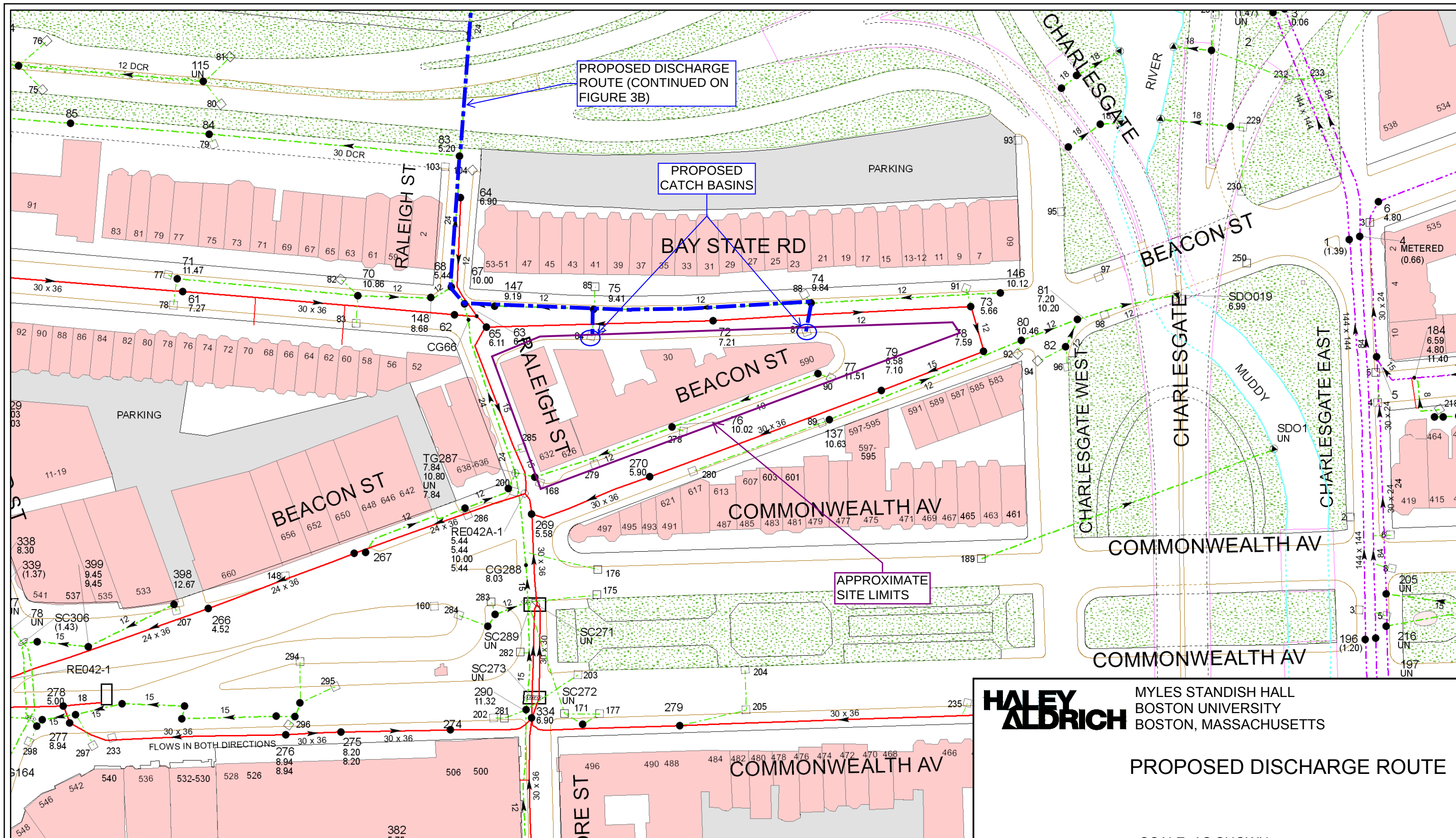
MYLES STANDISH HALL AND ANNEX RENOVATIONS
610 BEACON STREET
BOSTON, MASSACHUSETTS



PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
APRIL 2016

FIGURE 1



**HALEY
ALDRICH**

MYLES STANDISH HALL
BOSTON UNIVERSITY
BOSTON, MASSACHUSETTS

PROPOSED DISCHARGE ROUTE

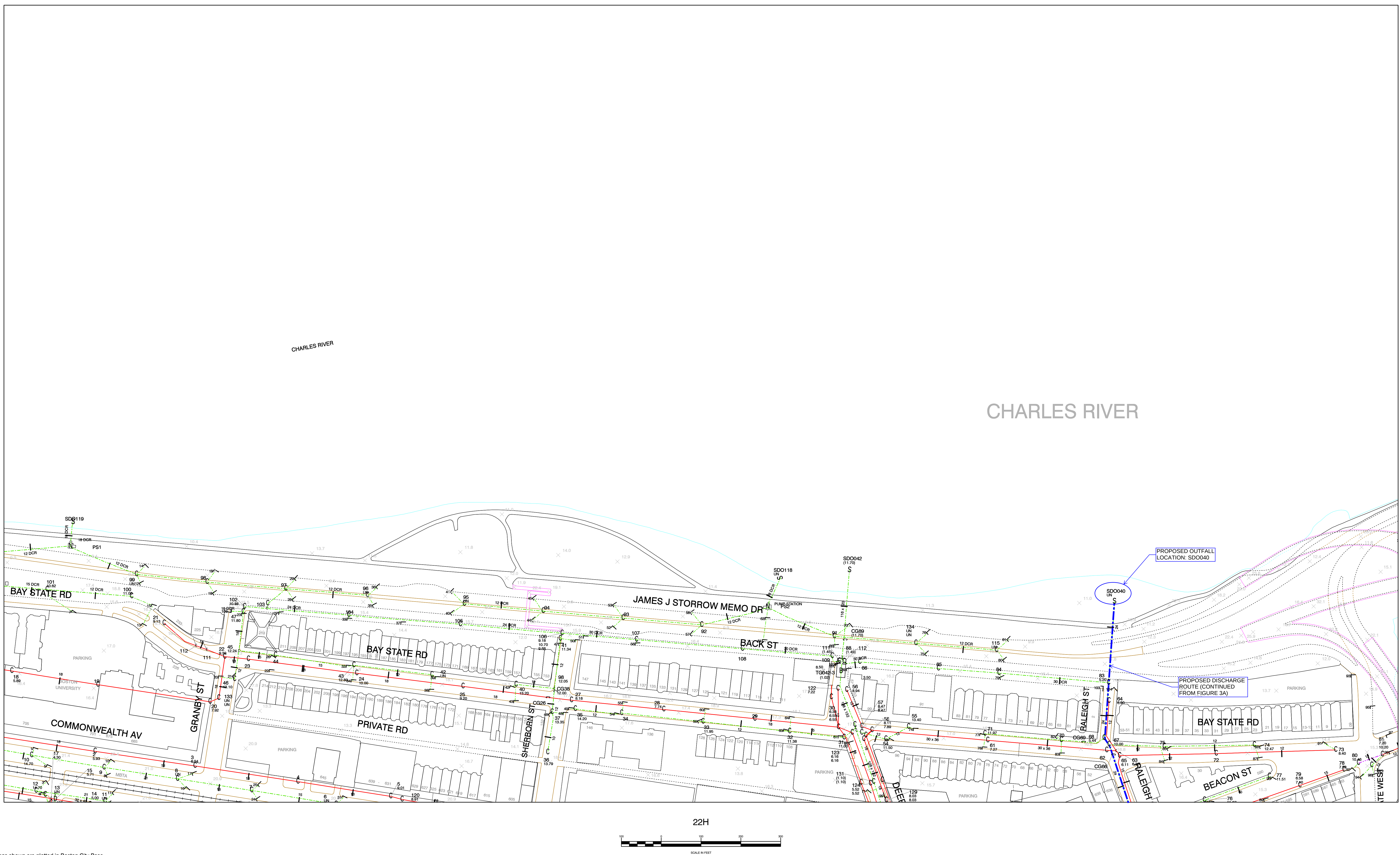
SCALE: AS SHOWN
APRIL 2016

FIGURE 3A

BOSTON WATER AND SEWER

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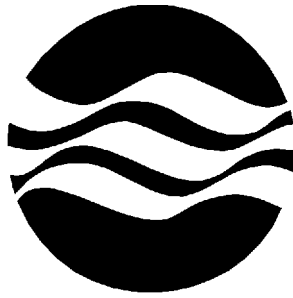


NOTE: Spot Elevations shown are plotted in Boston City Base

DATE OF PHOTOGRAPHY - MARCH 30, APRIL 1 & 17, 1995
VERTICAL DATUM BASED ON THE BOSTON CITY BASE

THE LANDBASE ON THIS MAP WAS COMPILED TO MEET THE
ASPRS STANDARD FOR CLASS 1 MAP ACCURACY

Date Produced
February 19, 2010



BOSTON WATER AND SEWER COMMISSION

HALEY
ALDRICH

MYLES STANDISH HALL
BOSTON UNIVERSITY
BOSTON, MASSACHUSETTS

PROPOSED DISCHARGE ROUTE

SCALE: AS SHOWN
APRIL 2016

FIGURE 3B

SEWER SYSTEM MAP

FENWAY/KENMORE
BACK BAY/BEACON HILL

SHEET NO.

23H

APPENDIX A

“Suggested Notice of Intent” (NOI) form as provided in Appendix IV of the NPDES Dewatering General Permit

II. Suggested Notice of Intent (NOI) Form

1. General facility information. Please provide the following information about the facility.

a) Name of facility: Boston University - Myles Standish Hall and Annex		Mailing Address for the Facility: 610 Beacon Street Boston, MA 02215	
b) Location Address of the Facility (if different from mailing address): NA		Facility Location longitude: <u>71.094394</u> latitude: <u>42.349672</u>	Type of Business: University Facility SIC codes: NA
c) Name of facility owner: <u>David Flynn</u> Owner's email: <u>ddflyn@bu.edu</u> Owner's Tel #: <u>617-638-4211</u> Owner's Fax #: <u>NA</u> Address of owner (if different from facility address) 120 Ashford Street Boston, MA 02215 Institution			
Owner is (check one): 1. Federal ☐ 2. State ☐ 3. Tribal ☐ 4. Private ☐ 4. Other ☒ (Describe)			
Legal name of Operator, if not owner: _____ Operator Contact Name: _____ Operator Tel Number: _____ Fax Number: _____ Operator's email: _____ Operator Address (if different from owner) _____			
d) Attach a topographic map indicating the location of the facility and the outfall(s) to the receiving water. Map attached? ☒			
e) Check Yes or No for the following: 1. Has a prior NPDES permit been granted for the discharge? Yes ☐ No ☒ If Yes, Permit Number: _____ 2. Is the discharge a "new discharge" as defined by 40 CFR Section 122.22? Yes ☒ No ☐ 3. Is the facility covered by an individual NPDES permit? Yes ☐ No ☒ If Yes, Permit Number _____ 4. Is there a pending application on file with EPA for this discharge? Yes ☐ No ☒ If Yes, date of submittal: _____			

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

a) Name of receiving water into which discharge will occur: Charles River
State Water Quality Classification: Class B Freshwater: X Marine Water: _____

b) Describe the discharge activities for which the owner/applicant is seeking coverage:

- ① Construction dewatering of groundwater intrusion and/or storm water accumulation.
2. Short-term or long-term dewatering of foundation sumps.
3. Other.

c) Number of outfalls 1

For each outfall:

d) Estimate the maximum daily and average monthly flow of the discharge (in gallons per day – GPD). Max Daily Flow 144,000 GPD
Average Monthly Flow 36,000 GPD

e) What is the maximum and minimum monthly pH of the discharge (in s.u.)? Max pH 8.3 Min pH 6.5

f) Identify the source of the discharge (i.e. potable water, surface water, or groundwater). If groundwater, the facility shall submit effluent test results, as required in Section 4.4.5 of the General Permit. Groundwater

g) What treatment does the wastewater receive prior to discharge? Sedimentation tank, other treatment as required

h) Is the discharge continuous? Yes ✓ No _____ If no, is the discharge periodic (P) (occurs regularly, i.e., monthly or seasonally, but is not continuous all year) or intermittent (I) (occurs sometimes but not regularly) or both (B) _____
If (P), number of days or months per year of the discharge _____ and the specific months of discharge _____;

If (I), number of days/year there is a discharge _____ No _____
If yes, approximate start date of dewatering June 2016 approximate end date of dewatering September 2018
Is the discharge temporary?

i) Latitude and longitude of each discharge within 100 feet (See http://www.epa.gov/tri/report/siting_tool): Outfall 1: long. 71.09524 lat. 42.3511 ;
Outfall 2: long. _____ lat. _____; Outfall 3: long. _____ lat. _____.

j) If the source of the discharge is potable water, please provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water and attach any calculation sheets used to support stream flow and dilution calculations NA cfs

(See Appendix VII for equations and additional information)

MASSACHUSETTS FACILITIES: See Section 3.4 and Appendix 1 of the General Permit for more information on Areas of Critical Environmental Concern (ACEC):

- k) Does the discharge occur in an ACEC? Yes _____ No ✓
If yes, provide the name of the ACEC: _____

3. Contaminant Information

- a) Are any pH neutralization and/or dechlorination chemicals used in the discharge? If so, include the chemical name and manufacturer; maximum and average daily quantity used as well as the maximum and average daily expected concentrations (mg/l) in the discharge, and the vendor's reported aquatic toxicity (NOAEL and/or LC₅₀ in percent for aquatic organism(s)). pH treatment, if necessary, to be determined.
- b) Please report any known remediation activities or water-quality issues in the vicinity of the discharge. No known remediation activities in vicinity of discharge.

4. Determination of Endangered Species Act Eligibility: Provide documentation of ESA eligibility as required at Part 3.4 and Appendices III and IV. In addition, respond to the following questions.

- a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes _____ No ✓
- b) Has any consultation with the federal services been completed? Yes ✓ No _____
- c) Is consultation underway? Yes _____ No ✓
- d) What were the results of the consultation with the U.S. Fish and Wildlife Service and/or NOAA Fisheries Service (check one): a "no jeopardy" opinion _____ or written concurrence _____ on a finding that the discharges are not likely to adversely affect any endangered species or critical habitat.
- e) Which of the five eligibility criteria listed in Appendix 2, Section B (A,B,C,D,or E) have you met? A
- f) Please attach a copy of the most current federal listing of endangered and threatened species, found at USF&W website.

5. Documentation of National Historic Preservation Act requirements: Please respond to the following questions:

- a) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility site or in proximity to the discharge? Yes ✓ No _____
- b) Have any State or Tribal historic preservation officers been consulted in this determination? Yes _____ or No ✓ If yes, attach the results of the consultation(s).
- c) Which of the three National Historic Preservation Act requirements listed in Appendix 3, Section C (1,2 or 3) have you met? 2

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

7. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22 (see below) including the following certification:

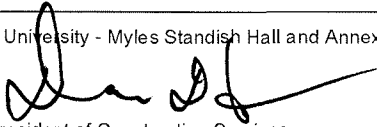
I certify under penalty of law that (1) no biocides or other chemical additives except for those used for pH adjustment and/or dechlorination are used in the dewatering system; (2) the discharge consists solely of dewatering and authorized pH adjustment and/or

dechlorination chemicals; (3) the discharge does not come in contact with any raw materials, intermediate product, water product or finished product; (4) if the discharge of dewatering subsequently mixes with other permitted wastewater (i.e. stormwater) prior to discharging to the receiving water, any monitoring provided under this permit will be only for dewatering discharge; (5) where applicable, the facility has complied with the requirements of this permit specific to the Endangered Species Act and National Historic Preservation Act; and (6) this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility Name: Boston University - Myles Standish Hall and Annex

Operator signature:



Title: Assistant Vice President of Construction Services

Date:

31 Mar 16

Federal regulations require this application to be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.

APPENDIX B

Boston Water and Sewer Commission – Dewatering Discharge 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: BOSTON UNIVERSITY Address: 120 ASHFORD STREET, BOSTON, MA 02215
Phone Number: 617-638-4211 Fax number: NA
Contact person name: DAVID FLYNN Title: ASSISTANT VICE PRESIDENT OF CONSTRUCTION SERVICES
Cell number: NA Email address: ddflyn@bu.edu

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: 610 BEACON STREET Neighborhood BOSTON: FENWAY KENMORE

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

SEDIMENTATION TANK, BAG FILTER, AND OTHER COMPONENTS AS NECESSARY

Describe Proposed Pre-Treatment System(s): (REFER TO ATTACHED DGP APPLICATION)

BWSC Outfall No. SDO040 Receiving Waters CHARLES RIVER

Temporary Discharges (Provide Anticipated Dates of Discharge): From JUNE 2016 To SEPTEMBER 2018

☐ 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

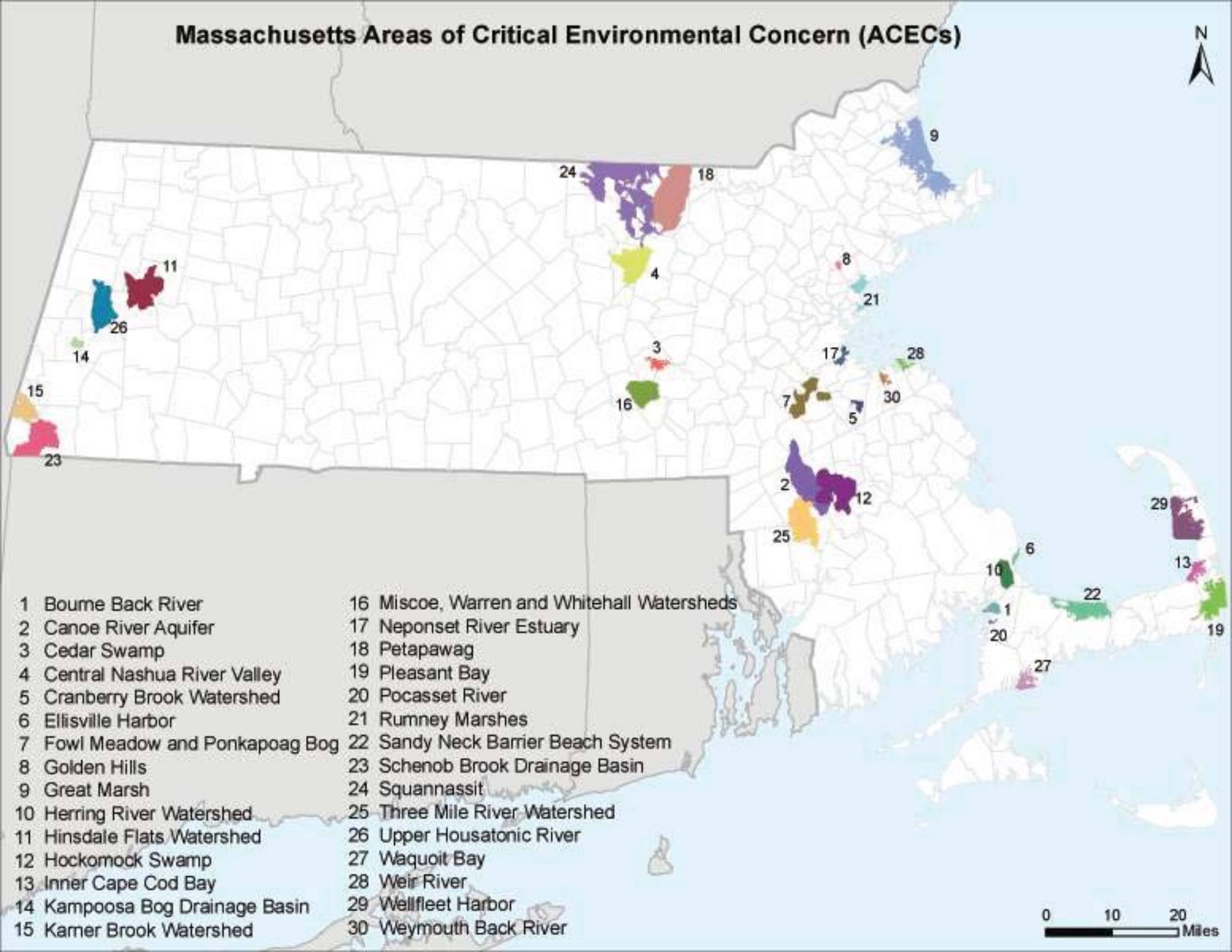
Signature of Authorized Representative for Property Owner: _____

Date: 31 Mar 16

APPENDIX C

Areas of Critical Environmental Concern

Massachusetts Areas of Critical Environmental Concern (ACECs)



0 10 20 Miles

- | | |
|---------------------------------|--|
| 1 Bourne 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 Karter Brook Watershed | 30 Weymouth Back River |

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		

APPENDIX D

National Register of Historic Places and Massachusetts Historical Commission Documentation

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

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

Inv. No.	Property Name	Street	Town	Year
BOS.XC	Kenmore Square Area		Boston	
BOS.7298	Peerless Motor Car Company Building	642-648 Beacon St	Boston	1910
BOS.7312	Hotel Buckminster	645 Beacon St	Boston	1896
BOS.7299	Peerless Motor Car Company Building	650-656 Beacon St	Boston	1910
BOS.7300	Peerless Motor Car Company Building	660 Beacon St	Boston	1910
BOS.9270	CITGO Sign	660 Beacon St	Boston	1965
BOS.15386	Shell Eastern Petroleum Products Office Building	677 Beacon St	Boston	1916
BOS.7313	Edison Electric Illuminating Transformer Station	693 Beacon St	Boston	1916
BOS.9644	Boylston Street Subway Tunnel	Boylston St	Boston	1914
BOS.9283	Kenmore Subway Station	Commonwealth Ave	Boston	1932
BOS.15493	Overland Store Company	533 Commonwealth Ave	Boston	1916
BOS.15494	New England School of Photography	535-539 Commonwealth Ave	Boston	c 1958
BOS.7368	Charlesview, The	536 Commonwealth Ave	Boston	c 1910
BOS.15495	Westgate Apartments	541 Commonwealth Ave	Boston	1894
BOS.7369	Commonwealth Improvement Company Building	542-548 Commonwealth Ave	Boston	r 1922
BOS.15412	General Tire and Rubber Company Building	565 Commonwealth Ave	Boston	c 1952
BOS.9553	Commonwealth Avenue Plaza	590 Commonwealth Ave	Boston	c 1985
BOS.7370	Temple Adath Israel	602 Commonwealth Ave	Boston	1906
BOS.15411	Lahey Clinic	605 Commonwealth Ave	Boston	1925
BOS.15409	Covel Row House - Commonwealth Avenue Hospital	617 Commonwealth Ave	Boston	1901
BOS.15410	Shapleigh Row House - Commonwealth Avenue Hospital	619 Commonwealth Ave	Boston	1903
BOS.15408	Hurlburt Row House - Commonwealth Avenue Hospital	621 Commonwealth Ave	Boston	c 1903
BOS.15407	Holden, Mary E. - Hallian, Anna C. Row House	625 Commonwealth Ave	Boston	1901
BOS.15406	Cummings, E. Louise - Wolf, Alice L. Row House	627 Commonwealth Ave	Boston	1906
BOS.15405	Chadwick, N. Henry Row House	629 Commonwealth Ave	Boston	c 1906
BOS.9552	Boston University - Communication Park	630-640 Commonwealth Ave	Boston	1979
BOS.15404	Remington Rand Building	635 Commonwealth Ave	Boston	1955
BOS.15403	Nash New England Auto Company Showroom and Garage	640 Commonwealth Ave	Boston	1912
BOS.15394	Nash New England Auto Company Building	30-38 Cummington St	Boston	1917
BOS.15385	Standard Rim and Wheel Company Building	601 Newbury St	Boston	1915

APPENDIX E

Endangered Species Act Documentation

Town Species Viewer

The Natural Heritage & Endangered Species Program maintains a list of all documented MESA-listed species observations in the Commonwealth. Please select a town if you would like to see a table showing which listed species have been observed in that town. The selected town will also be highlighted on the map. Alternatively you can specify either the Common Name or Scientific Name of a species to see its distribution on the map and table showing the towns it has been observed in. Clicking on a column header in the table will sort the column. Clicking again on the same column heading will reverse the sort order.

The Town List and Species Viewer will be updated at regular intervals as new data is accepted and entered into the NHESP database.

Town:

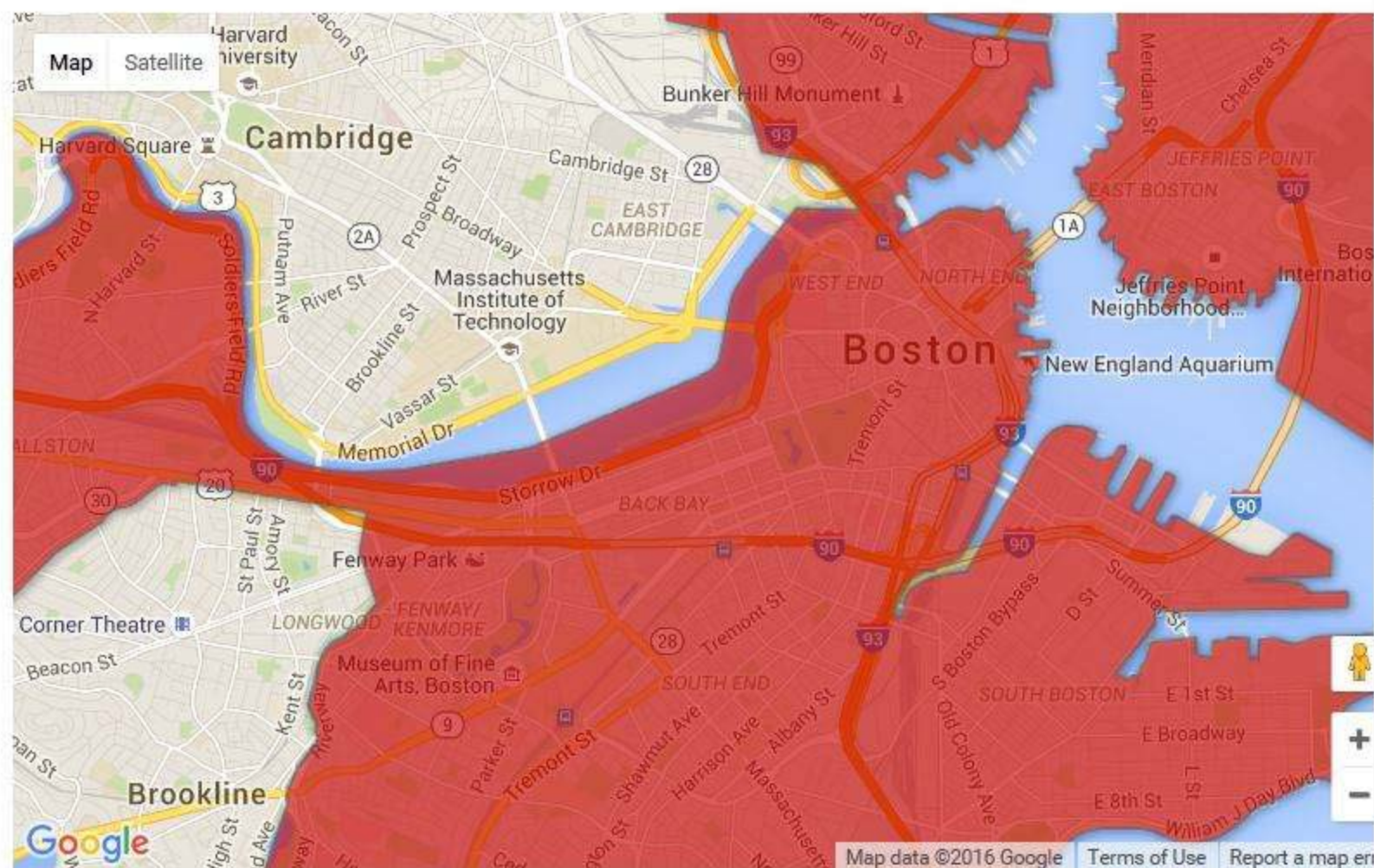
BOSTON

or

Species (Common Name):

or

Species (Scientific Name):



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

Site Information:

610 BEACON STREET BOSTON, MA

NAD83 UTM Meters:

5213526mN, -7914197mE (Zone: 18)

March 22, 2016

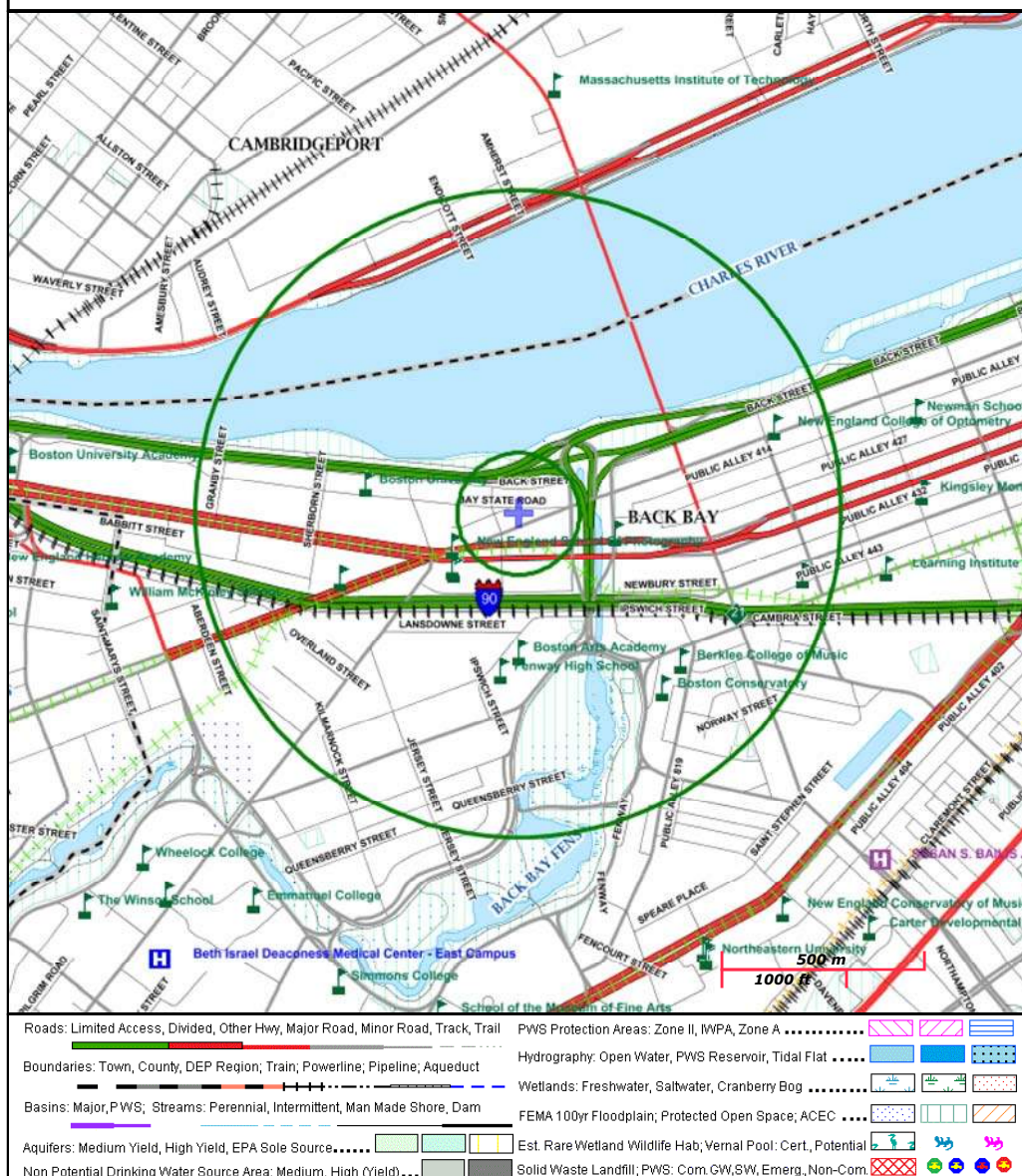
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

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



Myles Standish Hall Renovation

IPaC Trust Resources Report

Generated March 22, 2016 12:24 PM MDT, IPaC v3.0.0

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



Table of Contents

IPaC Trust Resources Report	<u>1</u>
Project Description	<u>1</u>
Endangered Species	<u>2</u>
Migratory Birds	<u>3</u>
Refuges & Hatcheries	<u>5</u>
Wetlands	<u>6</u>

U.S. Fish & Wildlife Service

IPaC Trust Resources Report



NAME

Myles Standish Hall Renovation

LOCATION

Suffolk County, Massachusetts

IPAC LINK

<https://ecos.fws.gov/ipac/project/BFSKH-PNQDF-AMBEJ-RTDPD-XVOH6M>



U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the [Endangered Species Program](#) of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

[Section 7](#) of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

There are no endangered species in this location

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the [Bald and Golden Eagle Protection Act](#).

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.^[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
<http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/akn-histogram-tools.php>

The following species of migratory birds could potentially be affected by activities in this location:

American Oystercatcher <i>Haematopus palliatus</i>	Bird of conservation concern
Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0G8	
American Bittern <i>Botaurus lentiginosus</i>	Bird of conservation concern
Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F3	
Bald Eagle <i>Haliaeetus leucocephalus</i>	Bird of conservation concern
Year-round https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008	
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i>	Bird of conservation concern
Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HI	

Blue-winged Warbler <i>Vermivora pinus</i> Season: Breeding	Bird of conservation concern
Canada Warbler <i>Wilsonia canadensis</i> Season: Breeding	Bird of conservation concern
Hudsonian Godwit <i>Limosa haemastica</i> Season: Migrating	Bird of conservation concern
Least Bittern <i>Ixobrychus exilis</i> Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B092	
Olive-sided Flycatcher <i>Contopus cooperi</i> Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0AN	Bird of conservation concern
Peregrine Falcon <i>Falco peregrinus</i> Seasons: Breeding, Wintering https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FU	Bird of conservation concern
Pied-billed Grebe <i>Podilymbus podiceps</i> Season: Breeding	Bird of conservation concern
Prairie Warbler <i>Dendroica discolor</i> Season: Breeding	Bird of conservation concern
Purple Sandpiper <i>Calidris maritima</i> Season: Wintering	Bird of conservation concern
Saltmarsh Sparrow <i>Ammodramus caudacutus</i> Season: Breeding	Bird of conservation concern
Seaside Sparrow <i>Ammodramus maritimus</i> Season: Breeding	Bird of conservation concern
Short-eared Owl <i>Asio flammeus</i> Season: Wintering https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HD	Bird of conservation concern
Snowy Egret <i>Egretta thula</i> Season: Breeding	Bird of conservation concern
Upland Sandpiper <i>Bartramia longicauda</i> Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HC	Bird of conservation concern
Willow Flycatcher <i>Empidonax traillii</i> Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0F6	Bird of conservation concern
Wood Thrush <i>Hylocichla mustelina</i> Season: Breeding	Bird of conservation concern
Worm Eating Warbler <i>Helminthophila vermivora</i> Season: Breeding	Bird of conservation concern

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

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 Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
<http://www.fws.gov/newengland>



January 22, 2016

To Whom It May Concern:

This project was reviewed for the presence of federally listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

<http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm> (accessed January 2016)

Based on information currently available to us, no federally listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required. No further Endangered Species Act coordination is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact Maria Tur of this office at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

APPENDIX F
Laboratory Reports



ANALYTICAL REPORT

Lab Number:	L1601065
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Damian Siebert
Phone:	(617) 886-7399
Project Name:	MYLES STANDISH HALL
Project Number:	42035-000
Report Date:	01/19/16

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

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



Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Number: L1601065
Report Date: 01/19/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1601065-01	HA16-204(OW)	WATER	Not Specified	01/13/16 11:55	01/13/16

Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Number: L1601065
Report Date: 01/19/16

Case Narrative

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

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

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

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

HOLD POLICY

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

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

Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Number: L1601065
Report Date: 01/19/16

Case Narrative (continued)

Semivolatile Organics

The WG857493-2/-3 LCS/LCSD recoveries, associated with L1601065-01 (HA16-204(OW)), are below the acceptance criteria for benzidine (8%/4%) and pyridine (LCSD 6%); however, they have been identified as "difficult" analytes. The results of the associated sample are reported.

Metals

The WG857232-3 Laboratory Duplicate RPD, performed on L1601065-01 (HA16-204(OW)), is outside the acceptance criteria for iron (44%). The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

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

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 01/19/16

ORGANICS

VOLATILES

Project Name: MYLES STANDISH HALL**Lab Number:** L1601065**Project Number:** 42035-000**Report Date:** 01/19/16**SAMPLE RESULTS**

Lab ID: L1601065-01
Client ID: HA16-204(OW)
Sample Location: Not Specified
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/19/16 08:53
Analyst: MM

Date Collected: 01/13/16 11:55
Date Received: 01/13/16
Field Prep: Not Specified

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



Project Name: MYLES STANDISH HALL

Lab Number: L1601065

Project Number: 42035-000

Report Date: 01/19/16

SAMPLE RESULTS

Lab ID: L1601065-01
 Client ID: HA16-204(OW)
 Sample Location: Not Specified

Date Collected: 01/13/16 11:55
 Date Received: 01/13/16
 Field Prep: Not Specified

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



Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Number: L1601065
Report Date: 01/19/16

SAMPLE RESULTS

Lab ID: L1601065-01
Client ID: HA16-204(OW)
Sample Location: Not Specified

Date Collected: 01/13/16 11:55
Date Received: 01/13/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	129		70-130
Dibromofluoromethane	113		70-130

Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Number: L1601065
Report Date: 01/19/16

SAMPLE RESULTS

Lab ID: L1601065-01
Client ID: HA16-204(OW)
Sample Location: Not Specified
Matrix: Water
Analytical Method: 1,8260C-SIM(M)
Analytical Date: 01/19/16 08:53
Analyst: MM

Date Collected: 01/13/16 11:55
Date Received: 01/13/16
Field Prep: Not Specified

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

1,4-Dioxane	ND		ug/l	3.0	--	1
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Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Number: L1601065
Report Date: 01/19/16

SAMPLE RESULTS

Lab ID: L1601065-01
 Client ID: HA16-204(OW)
 Sample Location: Not Specified
 Matrix: Water
 Analytical Method: 14,504.1
 Analytical Date: 01/19/16 12:23
 Analyst: NS

Date Collected: 01/13/16 11:55
 Date Received: 01/13/16
 Field Prep: Not Specified
 Extraction Method: EPA 8011
 Extraction Date: 01/19/16 09:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	--	1	A

Project Name: MYLES STANDISH HALL**Lab Number:** L1601065**Project Number:** 42035-000**Report Date:** 01/19/16**Method Blank Analysis**
Batch Quality Control

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

Analytical Date: 01/19/16 08:21

Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG858404-3					
1,4-Dioxane	ND		ug/l	3.0	--

Project Name: MYLES STANDISH HALL

Lab Number: L1601065

Project Number: 42035-000

Report Date: 01/19/16

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 01/19/16 08:21
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG858405-3					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--

Project Name: MYLES STANDISH HALL

Lab Number: L1601065

Project Number: 42035-000

Report Date: 01/19/16

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 01/19/16 08:21
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG858405-3					
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--

Project Name: MYLES STANDISH HALL

Lab Number: L1601065

Project Number: 42035-000

Report Date: 01/19/16

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 01/19/16 08:21
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG858405-3					
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	125		70-130
Dibromofluoromethane	117		70-130

Project Name: MYLES STANDISH HALL**Lab Number:** L1601065**Project Number:** 42035-000**Report Date:** 01/19/16**Method Blank Analysis**
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 01/19/16 11:32
Analyst: NS

Extraction Method: EPA 8011
Extraction Date: 01/19/16 09:47

Parameter	Result	Qualifier	Units	RL	MDL
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG858407-1					
1,2-Dibromoethane	ND		ug/l	0.010	-- A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	-- A

Lab Control Sample Analysis Batch Quality Control

Project Name: MYLES STANDISH HALL

Project Number: 42035-000

Lab Number: L1601065

Report Date: 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG858404-1 WG858404-2								
1,4-Dioxane	75		88		70-130	16		25

Lab Control Sample Analysis **Batch Quality Control**

Project Name: MYLES STANDISH HALL

Project Number: 42035-000

Lab Number: L1601065

Report Date: 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG858405-1 WG858405-2								
Methylene chloride	97		99		70-130	2		20
1,1-Dichloroethane	101		104		70-130	3		20
Chloroform	101		106		70-130	5		20
Carbon tetrachloride	101		104		63-132	3		20
1,2-Dichloropropane	96		100		70-130	4		20
Dibromochloromethane	88		92		63-130	4		20
1,1,2-Trichloroethane	92		98		70-130	6		20
2-Chloroethylvinyl ether	100		101		70-130	1		20
Tetrachloroethene	98		102		70-130	4		20
Chlorobenzene	98		101		75-130	3		25
Trichlorofluoromethane	104		108		62-150	4		20
1,2-Dichloroethane	98		103		70-130	5		20
1,1,1-Trichloroethane	102		106		67-130	4		20
Bromodichloromethane	97		101		67-130	4		20
trans-1,3-Dichloropropene	88		92		70-130	4		20
cis-1,3-Dichloropropene	93		97		70-130	4		20
1,1-Dichloropropene	100		102		70-130	2		20
Bromoform	93		95		54-136	2		20
1,1,2,2-Tetrachloroethane	97		96		67-130	1		20
Benzene	99		101		70-130	2		25
Toluene	96		102		70-130	6		25

Lab Control Sample Analysis Batch Quality Control

Project Name: MYLES STANDISH HALL

Project Number: 42035-000

Lab Number: L1601065

Report Date: 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG858405-1 WG858405-2								
Ethylbenzene	98		102		70-130	4		20
Chloromethane	85		87		64-130	2		20
Bromomethane	72		76		39-139	5		20
Vinyl chloride	93		95		55-140	2		20
Chloroethane	109		108		55-138	1		20
1,1-Dichloroethene	101		106		61-145	5		25
trans-1,2-Dichloroethene	106		111		70-130	5		20
Trichloroethene	102		105		70-130	3		25
1,2-Dichlorobenzene	101		106		70-130	5		20
1,3-Dichlorobenzene	103		106		70-130	3		20
1,4-Dichlorobenzene	101		104		70-130	3		20
Methyl tert butyl ether	92		94		63-130	2		20
p/m-Xylene	97		103		70-130	6		20
o-Xylene	98		101		70-130	3		20
cis-1,2-Dichloroethene	101		103		70-130	2		20
Dibromomethane	97		100		70-130	3		20
1,4-Dichlorobutane	99		103		70-130	4		20
1,2,3-Trichloropropane	104		102		64-130	2		20
Styrene	97		102		70-130	5		20
Dichlorodifluoromethane	81		87		36-147	7		20
Acetone	106		102		58-148	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: MYLES STANDISH HALL

Project Number: 42035-000

Lab Number: L1601065

Report Date: 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG858405-1 WG858405-2								
Carbon disulfide	99		104		51-130	5		20
2-Butanone	89		96		63-138	8		20
Vinyl acetate	90		94		70-130	4		20
4-Methyl-2-pentanone	95		96		59-130	1		20
2-Hexanone	88		90		57-130	2		20
Ethyl methacrylate	92		95		70-130	3		20
Acrylonitrile	92		94		70-130	2		20
Bromochloromethane	102		107		70-130	5		20
Tetrahydrofuran	84		89		58-130	6		20
2,2-Dichloropropane	102		101		63-133	1		20
1,2-Dibromoethane	95		97		70-130	2		20
1,3-Dichloropropane	93		98		70-130	5		20
1,1,1,2-Tetrachloroethane	93		97		64-130	4		20
Bromobenzene	101		104		70-130	3		20
n-Butylbenzene	103		105		53-136	2		20
sec-Butylbenzene	102		105		70-130	3		20
tert-Butylbenzene	101		104		70-130	3		20
o-Chlorotoluene	102		107		70-130	5		20
p-Chlorotoluene	100		102		70-130	2		20
1,2-Dibromo-3-chloropropane	82		93		41-144	13		20
Hexachlorobutadiene	102		103		63-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: MYLES STANDISH HALL

Project Number: 42035-000

Lab Number: L1601065

Report Date: 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG858405-1 WG858405-2								
Isopropylbenzene	108		110		70-130	2		20
p-Isopropyltoluene	101		104		70-130	3		20
Naphthalene	76		77		70-130	1		20
n-Propylbenzene	104		107		69-130	3		20
1,2,3-Trichlorobenzene	84		86		70-130	2		20
1,2,4-Trichlorobenzene	85		88		70-130	3		20
1,3,5-Trimethylbenzene	103		106		64-130	3		20
1,3,5-Trichlorobenzene	99		105		70-130	6		20
1,2,4-Trimethylbenzene	103		104		70-130	1		20
trans-1,4-Dichloro-2-butene	91		91		70-130	0		20
Ethyl ether	100		102		59-134	2		20
Methyl Acetate	97		97		70-130	0		20
Ethyl Acetate	90		90		70-130	0		20
Isopropyl Ether	94		97		70-130	3		20
Cyclohexane	100		102		70-130	2		20
Tert-Butyl Alcohol	71		80		70-130	12		20
Ethyl-Tert-Butyl-Ether	93		96		70-130	3		20
Tertiary-Amyl Methyl Ether	91		97		66-130	6		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	105		108		70-130	3		20
Methyl cyclohexane	97		103		70-130	6		20
p-Diethylbenzene	102		105		70-130	3		20

Lab Control Sample Analysis**Batch Quality Control****Project Name:** MYLES STANDISH HALL**Lab Number:** L1601065**Project Number:** 42035-000**Report Date:** 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG858405-1 WG858405-2								
4-Ethyltoluene	102		105		70-130	3		20
1,2,4,5-Tetramethylbenzene	100		105		70-130	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		94		70-130
Toluene-d8	96		98		70-130
4-Bromofluorobenzene	101		100		70-130
Dibromofluoromethane	104		104		70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: MYLES STANDISH HALL

Project Number: 42035-000

Lab Number: L1601065

Report Date: 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 Batch: WG858407-2									
1,2-Dibromoethane	95		-		70-130	-		20	A
1,2-Dibromo-3-chloropropane	94		-		70-130	-		20	A

Matrix Spike Analysis

Batch Quality Control

Project Name: MYLES STANDISH HALL

Project Number: 42035-000

Lab Number: L1601065

Report Date: 01/19/16

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>	<i>Column</i>
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG858407-3 QC Sample: L1601065-01 Client ID: HA16-204(OW)													
1,2-Dibromoethane	ND	0.259	0.251	97		-	-		70-130	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.259	0.249	96		-	-		70-130	-		20	A

SEMIVOLATILES

Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Number: L1601065
Report Date: 01/19/16

SAMPLE RESULTS

Lab ID: L1601065-01
Client ID: HA16-204(OW)
Sample Location: Not Specified
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 01/16/16 22:00
Analyst: PS

Date Collected: 01/13/16 11:55
Date Received: 01/13/16
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 01/15/16 02:29

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

Project Name: MYLES STANDISH HALL**Lab Number:** L1601065**Project Number:** 42035-000**Report Date:** 01/19/16**SAMPLE RESULTS**

Lab ID: L1601065-01
 Client ID: HA16-204(OW)
 Sample Location: Not Specified

Date Collected: 01/13/16 11:55
 Date Received: 01/13/16
 Field Prep: Not Specified

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	33		21-120
Phenol-d6	26		10-120
Nitrobenzene-d5	53		23-120
2-Fluorobiphenyl	67		15-120
2,4,6-Tribromophenol	79		10-120
4-Terphenyl-d14	81		41-149

Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Number: L1601065
Report Date: 01/19/16

SAMPLE RESULTS

Lab ID: L1601065-01
Client ID: HA16-204(OW)
Sample Location: Not Specified
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 01/17/16 07:40
Analyst: KV

Date Collected: 01/13/16 11:55
Date Received: 01/13/16
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 01/15/16 02:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	--	1
2-Chloronaphthalene	ND		ug/l	0.20	--	1
Fluoranthene	ND		ug/l	0.20	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.20	--	1
Benzo(a)anthracene	ND		ug/l	0.20	--	1
Benzo(a)pyrene	ND		ug/l	0.20	--	1
Benzo(b)fluoranthene	ND		ug/l	0.20	--	1
Benzo(k)fluoranthene	ND		ug/l	0.20	--	1
Chrysene	ND		ug/l	0.20	--	1
Acenaphthylene	ND		ug/l	0.20	--	1
Anthracene	ND		ug/l	0.20	--	1
Benzo(ghi)perylene	ND		ug/l	0.20	--	1
Fluorene	ND		ug/l	0.20	--	1
Phenanthrene	ND		ug/l	0.20	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	--	1
Pyrene	ND		ug/l	0.20	--	1
1-Methylnaphthalene	ND		ug/l	0.20	--	1
2-Methylnaphthalene	ND		ug/l	0.20	--	1
Pentachlorophenol	ND		ug/l	0.80	--	1
Hexachlorobenzene	ND		ug/l	0.80	--	1
Hexachloroethane	ND		ug/l	0.80	--	1

Project Name: MYLES STANDISH HALL**Lab Number:** L1601065**Project Number:** 42035-000**Report Date:** 01/19/16**SAMPLE RESULTS**

Lab ID: L1601065-01

Date Collected: 01/13/16 11:55

Client ID: HA16-204(OW)

Date Received: 01/13/16

Sample Location: Not Specified

Field Prep: Not Specified

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	42		21-120
Phenol-d6	33		10-120
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	72		15-120
2,4,6-Tribromophenol	83		10-120
4-Terphenyl-d14	85		41-149

Project Name: MYLES STANDISH HALL

Lab Number: L1601065

Project Number: 42035-000

Report Date: 01/19/16

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D
 Analytical Date: 01/16/16 16:10
 Analyst: PS

Extraction Method: EPA 3510C
 Extraction Date: 01/15/16 02:29

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG857493-1					
Benzidine	ND		ug/l	20	--
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--
1,2-Dichlorobenzene	ND		ug/l	2.0	--
1,3-Dichlorobenzene	ND		ug/l	2.0	--
1,4-Dichlorobenzene	ND		ug/l	2.0	--
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--
2,4-Dinitrotoluene	ND		ug/l	5.0	--
2,6-Dinitrotoluene	ND		ug/l	5.0	--
Azobenzene	ND		ug/l	2.0	--
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--
Hexachlorocyclopentadiene	ND		ug/l	20	--
Isophorone	ND		ug/l	5.0	--
Nitrobenzene	ND		ug/l	2.0	--
NDPA/DPA	ND		ug/l	2.0	--
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Aniline	ND		ug/l	2.0	--
4-Chloroaniline	ND		ug/l	5.0	--
2-Nitroaniline	ND		ug/l	5.0	--
3-Nitroaniline	ND		ug/l	5.0	--
4-Nitroaniline	ND		ug/l	5.0	--

Project Name: MYLES STANDISH HALL

Lab Number: L1601065

Project Number: 42035-000

Report Date: 01/19/16

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D
 Analytical Date: 01/16/16 16:10
 Analyst: PS

Extraction Method: EPA 3510C
 Extraction Date: 01/15/16 02:29

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG857493-1					
Dibenzofuran	ND		ug/l	2.0	--
n-Nitrosodimethylamine	ND		ug/l	2.0	--
2,4,6-Trichlorophenol	ND		ug/l	5.0	--
p-Chloro-m-cresol	ND		ug/l	2.0	--
2-Chlorophenol	ND		ug/l	2.0	--
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	10	--
4-Nitrophenol	ND		ug/l	10	--
2,4-Dinitrophenol	ND		ug/l	20	--
4,6-Dinitro-o-cresol	ND		ug/l	10	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol	ND		ug/l	5.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--
Benzoic Acid	ND		ug/l	50	--
Benzyl Alcohol	ND		ug/l	2.0	--
Carbazole	ND		ug/l	2.0	--
Pyridine	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	39		21-120
Phenol-d6	29		10-120
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	53		15-120
2,4,6-Tribromophenol	74		10-120
4-Terphenyl-d14	77		41-149



Project Name: MYLES STANDISH HALL

Lab Number: L1601065

Project Number: 42035-000

Report Date: 01/19/16

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM
 Analytical Date: 01/17/16 06:06
 Analyst: KV

Extraction Method: EPA 3510C
 Extraction Date: 01/15/16 02:29

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG857494-1					
Acenaphthene	ND		ug/l	0.10	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.20	--
Benzo(a)anthracene	ND		ug/l	0.20	--
Benzo(a)pyrene	ND		ug/l	0.20	--
Benzo(b)fluoranthene	ND		ug/l	0.20	--
Benzo(k)fluoranthene	ND		ug/l	0.20	--
Chrysene	ND		ug/l	0.20	--
Acenaphthylene	ND		ug/l	0.20	--
Anthracene	ND		ug/l	0.20	--
Benzo(ghi)perylene	ND		ug/l	0.20	--
Fluorene	ND		ug/l	0.20	--
Phenanthrene	ND		ug/l	0.20	--
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	--
Pyrene	ND		ug/l	0.20	--
1-Methylnaphthalene	ND		ug/l	0.20	--
2-Methylnaphthalene	ND		ug/l	0.20	--
Pentachlorophenol	ND		ug/l	0.80	--
Hexachlorobenzene	ND		ug/l	0.80	--
Hexachloroethane	ND		ug/l	0.80	--

Project Name: MYLES STANDISH HALL

Lab Number: L1601065

Project Number: 42035-000

Report Date: 01/19/16

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM
 Analytical Date: 01/17/16 06:06
 Analyst: KV

Extraction Method: EPA 3510C
 Extraction Date: 01/15/16 02:29

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG857494-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	46		21-120
Phenol-d6	35		10-120
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	63		15-120
2,4,6-Tribromophenol	83		10-120
4-Terphenyl-d14	90		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: MYLES STANDISH HALL

Project Number: 42035-000

Lab Number: L1601065

Report Date: 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG857493-2 WG857493-3								
Benzidine	8	Q	4	Q	10-75	68	Q	30
1,2,4-Trichlorobenzene	59		61		39-98	3		30
Bis(2-chloroethyl)ether	63		63		40-140	0		30
1,2-Dichlorobenzene	54		56		40-140	4		30
1,3-Dichlorobenzene	51		54		40-140	6		30
1,4-Dichlorobenzene	51		54		36-97	6		30
3,3'-Dichlorobenzidine	42		38	Q	40-140	10		30
2,4-Dinitrotoluene	79		77		24-96	3		30
2,6-Dinitrotoluene	86		83		40-140	4		30
Azobenzene	71		67		40-140	6		30
4-Chlorophenyl phenyl ether	73		70		40-140	4		30
4-Bromophenyl phenyl ether	76		73		40-140	4		30
Bis(2-chloroisopropyl)ether	63		62		40-140	2		30
Bis(2-chloroethoxy)methane	72		69		40-140	4		30
Hexachlorocyclopentadiene	57		60		40-140	5		30
Isophorone	72		71		40-140	1		30
Nitrobenzene	64		64		40-140	0		30
NDPA/DPA	72		69		40-140	4		30
Bis(2-ethylhexyl)phthalate	72		68		40-140	6		30
Butyl benzyl phthalate	71		68		40-140	4		30
Di-n-butylphthalate	74		71		40-140	4		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MYLES STANDISH HALL

Project Number: 42035-000

Lab Number: L1601065

Report Date: 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG857493-2 WG857493-3								
Di-n-octylphthalate	68		65		40-140	5		30
Diethyl phthalate	74		71		40-140	4		30
Dimethyl phthalate	73		70		40-140	4		30
Aniline	19	Q	14	Q	40-140	30		30
4-Chloroaniline	54		49		40-140	10		30
2-Nitroaniline	80		78		52-143	3		30
3-Nitroaniline	50		46		25-145	8		30
4-Nitroaniline	69		64		51-143	8		30
Dibenzofuran	69		67		40-140	3		30
n-Nitrosodimethylamine	35		36		22-74	3		30
2,4,6-Trichlorophenol	77		75		30-130	3		30
p-Chloro-m-cresol	73		72		23-97	1		30
2-Chlorophenol	64		63		27-123	2		30
2,4-Dichlorophenol	71		70		30-130	1		30
2,4-Dimethylphenol	58		45		30-130	25		30
2-Nitrophenol	73		72		30-130	1		30
4-Nitrophenol	50		48		10-80	4		30
2,4-Dinitrophenol	66		63		20-130	5		30
4,6-Dinitro-o-cresol	75		71		20-164	5		30
Phenol	33		33		12-110	0		30
2-Methylphenol	59		57		30-130	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MYLES STANDISH HALL

Project Number: 42035-000

Lab Number: L1601065

Report Date: 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG857493-2 WG857493-3								
3-Methylphenol/4-Methylphenol	60		58		30-130	3		30
2,4,5-Trichlorophenol	82		78		30-130	5		30
Benzoic Acid	33		30		10-164	10		30
Benzyl Alcohol	58		57		26-116	2		30
Carbazole	71		68		55-144	4		30
Pyridine	12		6	Q	10-66	73	Q	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	46		45		21-120
Phenol-d6	35		34		10-120
Nitrobenzene-d5	69		67		23-120
2-Fluorobiphenyl	64		63		15-120
2,4,6-Tribromophenol	79		75		10-120
4-Terphenyl-d14	71		67		41-149

Lab Control Sample Analysis Batch Quality Control

Project Name: MYLES STANDISH HALL

Project Number: 42035-000

Lab Number: L1601065

Report Date: 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG857494-2 WG857494-3								
Acenaphthene	80		83		37-111	4		40
2-Chloronaphthalene	74		78		40-140	5		40
Fluoranthene	94		94		40-140	0		40
Hexachlorobutadiene	61		69		40-140	12		40
Naphthalene	71		78		40-140	9		40
Benzo(a)anthracene	96		96		40-140	0		40
Benzo(a)pyrene	99		99		40-140	0		40
Benzo(b)fluoranthene	102		103		40-140	1		40
Benzo(k)fluoranthene	98		98		40-140	0		40
Chrysene	94		94		40-140	0		40
Acenaphthylene	76		80		40-140	5		40
Anthracene	89		88		40-140	1		40
Benzo(ghi)perylene	104		104		40-140	0		40
Fluorene	86		89		40-140	3		40
Phenanthrene	89		90		40-140	1		40
Dibenzo(a,h)anthracene	110		110		40-140	0		40
Indeno(1,2,3-cd)Pyrene	108		108		40-140	0		40
Pyrene	86		86		26-127	0		40
1-Methylnaphthalene	74		80		40-140	8		40
2-Methylnaphthalene	73		78		40-140	7		40
Pentachlorophenol	86		88		9-103	2		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: MYLES STANDISH HALL

Lab Number: L1601065

Project Number: 42035-000

Report Date: 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG857494-2 WG857494-3								
Hexachlorobenzene	89		91		40-140	2		40
Hexachloroethane	60		74		40-140	21		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	50		54		21-120
Phenol-d6	40		42		10-120
Nitrobenzene-d5	79		86		23-120
2-Fluorobiphenyl	72		74		15-120
2,4,6-Tribromophenol	83		80		10-120
4-Terphenyl-d14	86		86		41-149

PCBS

Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Number: L1601065
Report Date: 01/19/16

SAMPLE RESULTS

Lab ID: L1601065-01
Client ID: HA16-204(OW)
Sample Location: Not Specified
Matrix: Water
Analytical Method: 5,608
Analytical Date: 01/17/16 01:50
Analyst: JW

Date Collected: 01/13/16 11:55
Date Received: 01/13/16
Field Prep: Not Specified
Extraction Method: EPA 608
Extraction Date: 01/16/16 03:29
Cleanup Method: EPA 3665A
Cleanup Date: 01/16/16
Cleanup Method: EPA 3660B
Cleanup Date: 01/16/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Polychlorinated Biphenyls by GC - Westborough Lab

Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	54		30-150	A
Decachlorobiphenyl	51		30-150	A

Project Name: MYLES STANDISH HALL**Lab Number:** L1601065**Project Number:** 42035-000**Report Date:** 01/19/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
 Analytical Date: 01/17/16 02:48
 Analyst: JW

Extraction Method: EPA 608
 Extraction Date: 01/16/16 03:29
 Cleanup Method: EPA 3665A
 Cleanup Date: 01/16/16
 Cleanup Method: EPA 3660B
 Cleanup Date: 01/16/16

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG857860-1						
Aroclor 1016	ND		ug/l	0.250	--	B
Aroclor 1221	ND		ug/l	0.250	--	B
Aroclor 1232	ND		ug/l	0.250	--	B
Aroclor 1242	ND		ug/l	0.250	--	B
Aroclor 1248	ND		ug/l	0.250	--	B
Aroclor 1254	ND		ug/l	0.250	--	B
Aroclor 1260	ND		ug/l	0.200	--	B

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	47		30-150	B
Decachlorobiphenyl	79		30-150	B

Matrix Spike Analysis

Batch Quality Control

Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Number: L1601065
Report Date: 01/19/16

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>	<i>Column</i>
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857860-3 QC Sample: L1601065-01 Client ID: HA16-204(OW)													
Aroclor 1016	ND	1	0.907	91		-	-		40-140	-		50	B
Aroclor 1260	ND	1	0.774	77		-	-		40-140	-		50	B

<i>Surrogate</i>	<i>MS % Recovery</i>	<i>Qualifier</i>	<i>MSD % Recovery</i>	<i>Qualifier</i>	<i>Acceptance Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene	67				30-150	B
Decachlorobiphenyl	78				30-150	B

Lab Control Sample Analysis**Batch Quality Control****Project Name:** MYLES STANDISH HALL**Project Number:** 42035-000**Lab Number:** L1601065**Report Date:** 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG857860-2									
Aroclor 1016	82		-		40-140	-		50	B
Aroclor 1260	81		-		40-140	-		50	B

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	56				30-150	B
Decachlorobiphenyl	81				30-150	B

METALS

Project Name: MYLES STANDISH HALL

Lab Number: L1601065

Project Number: 42035-000

Report Date: 01/19/16

SAMPLE RESULTS

Lab ID: L1601065-01

Date Collected: 01/13/16 11:55

Client ID: HA16-204(OW)

Date Received: 01/13/16

Sample Location: Not Specified

Field Prep: Not Specified

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Antimony, Total	ND		mg/l	0.00200	--	1	01/14/16 09:10	01/14/16 14:29	EPA 3005A	1,6020A	KL
Arsenic, Total	0.00085		mg/l	0.00050	--	1	01/14/16 09:10	01/14/16 14:29	EPA 3005A	1,6020A	KL
Cadmium, Total	ND		mg/l	0.00020	--	1	01/14/16 09:10	01/14/16 14:29	EPA 3005A	1,6020A	KL
Chromium, Total	ND		mg/l	0.00200	--	1	01/14/16 09:10	01/14/16 14:29	EPA 3005A	1,6020A	KL
Copper, Total	ND		mg/l	0.00100	--	1	01/14/16 09:10	01/14/16 14:29	EPA 3005A	1,6020A	KL
Iron, Total	0.33		mg/l	0.05	--	1	01/14/16 09:10	01/19/16 09:48	EPA 3005A	19,200.7	PS
Lead, Total	ND		mg/l	0.00050	--	1	01/14/16 09:10	01/14/16 14:29	EPA 3005A	1,6020A	KL
Mercury, Total	ND		mg/l	0.00020	--	1	01/19/16 09:35	01/19/16 12:25	EPA 245.1	3,245.1	DB
Nickel, Total	ND		mg/l	0.00200	--	1	01/14/16 09:10	01/14/16 14:29	EPA 3005A	1,6020A	KL
Selenium, Total	ND		mg/l	0.00500	--	1	01/14/16 09:10	01/14/16 14:29	EPA 3005A	1,6020A	KL
Silver, Total	ND		mg/l	0.00040	--	1	01/14/16 09:10	01/14/16 14:29	EPA 3005A	1,6020A	KL
Zinc, Total	ND		mg/l	0.01000	--	1	01/14/16 09:10	01/14/16 14:29	EPA 3005A	1,6020A	KL



Project Name: MYLES STANDISH HALL

Lab Number: L1601065

Project Number: 42035-000

Report Date: 01/19/16

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG857230-1										
Antimony, Total	ND		mg/l	0.00200	--	1	01/14/16 09:10	01/14/16 14:18	1,6020A	KL
Arsenic, Total	ND		mg/l	0.00050	--	1	01/14/16 09:10	01/14/16 14:18	1,6020A	KL
Cadmium, Total	ND		mg/l	0.00020	--	1	01/14/16 09:10	01/14/16 14:18	1,6020A	KL
Chromium, Total	ND		mg/l	0.00200	--	1	01/14/16 09:10	01/14/16 14:18	1,6020A	KL
Copper, Total	ND		mg/l	0.00100	--	1	01/14/16 09:10	01/14/16 14:18	1,6020A	KL
Lead, Total	ND		mg/l	0.00050	--	1	01/14/16 09:10	01/14/16 14:18	1,6020A	KL
Nickel, Total	ND		mg/l	0.00200	--	1	01/14/16 09:10	01/14/16 14:18	1,6020A	KL
Selenium, Total	ND		mg/l	0.00500	--	1	01/14/16 09:10	01/14/16 14:18	1,6020A	KL
Silver, Total	ND		mg/l	0.00040	--	1	01/14/16 09:10	01/14/16 14:18	1,6020A	KL
Zinc, Total	ND		mg/l	0.01000	--	1	01/14/16 09:10	01/14/16 14:18	1,6020A	KL

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG857232-1										
Iron, Total	ND		mg/l	0.05	--	1	01/14/16 09:10	01/18/16 21:38	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG858391-1										
Mercury, Total	ND		mg/l	0.00020	--	1	01/19/16 09:35	01/19/16 12:21	3,245.1	DB

Prep Information

Digestion Method: EPA 245.1



Lab Control Sample Analysis

Batch Quality Control

Project Name: MYLES STANDISH HALL

Project Number: 42035-000

Lab Number: L1601065

Report Date: 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG857230-2								
Antimony, Total	82		-		80-120	-		
Arsenic, Total	89		-		80-120	-		
Cadmium, Total	94		-		80-120	-		
Chromium, Total	83		-		80-120	-		
Copper, Total	90		-		80-120	-		
Lead, Total	92		-		80-120	-		
Nickel, Total	87		-		80-120	-		
Selenium, Total	106		-		80-120	-		
Silver, Total	91		-		80-120	-		
Zinc, Total	95		-		80-120	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG857232-2								
Iron, Total	98		-		85-115	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG858391-2								
Mercury, Total	108		-		85-115	-		

Matrix Spike Analysis **Batch Quality Control**

Project Name: MYLES STANDISH HALL

Project Number: 42035-000

Lab Number: L1601065

Report Date: 01/19/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857230-4 QC Sample: L1601065-01 Client ID: HA16-204(OW)												
Antimony, Total	ND	0.5	0.5045	101		-	-		75-125	-		20
Arsenic, Total	0.00085	0.12	0.1096	91		-	-		75-125	-		20
Cadmium, Total	ND	0.051	0.04872	96		-	-		75-125	-		20
Chromium, Total	ND	0.2	0.1728	86		-	-		75-125	-		20
Copper, Total	ND	0.25	0.2207	88		-	-		75-125	-		20
Lead, Total	ND	0.51	0.4643	91		-	-		75-125	-		20
Nickel, Total	ND	0.5	0.4615	92		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.128	107		-	-		75-125	-		20
Silver, Total	ND	0.05	0.04505	90		-	-		75-125	-		20
Zinc, Total	ND	0.5	0.4746	95		-	-		75-125	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857232-4 QC Sample: L1601065-01 Client ID: HA16-204(OW)												
Iron, Total	0.33	1	1.2	87		-	-		75-125	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG858391-4 QC Sample: L1601065-01 Client ID: HA16-204(OW)												
Mercury, Total	ND	0.005	0.00505	101		-	-		70-130	-		20

Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Duplicate Analysis

Batch Quality Control

Lab Number: L1601065
Report Date: 01/19/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857230-3 QC Sample: L1601065-01 Client ID: HA16-204(OW)						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.00085	0.00090	mg/l	6		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857232-3 QC Sample: L1601065-01 Client ID: HA16-204(OW)						
Iron, Total	0.33	0.21	mg/l	44	Q	20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG858391-3 QC Sample: L1601065-01 Client ID: HA16-204(OW)						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS & MISCELLANEOUS

Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Number: L1601065
Report Date: 01/19/16

SAMPLE RESULTS

Lab ID: L1601065-01
Client ID: HA16-204(OW)
Sample Location: Not Specified
Matrix: Water

Date Collected: 01/13/16 11:55
Date Received: 01/13/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	01/13/16 23:18	30,2540D	RT
Cyanide, Total	ND		mg/l	0.005	--	1	01/14/16 09:43	01/15/16 11:30	30,4500CN-CE	JO
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	01/13/16 21:06	30,4500CL-D	AS
TPH, SGT-HEM	ND		mg/l	4.00	--	1	01/14/16 16:49	01/14/16 23:20	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	01/14/16 13:00	01/19/16 09:26	4,420.1	MP
Chromium, Hexavalent	ND		mg/l	0.010	--	1	01/14/16 00:20	01/14/16 00:32	119,3500CR-B	LH
Anions by Ion Chromatography - Westborough Lab										
Chloride	790.		mg/l	25.0	--	50	-	01/14/16 21:08	44,300.0	AU



Project Name: MYLES STANDISH HALL

Lab Number: L1601065

Project Number: 42035-000

Report Date: 01/19/16

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG857123-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	01/13/16 21:06	30,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG857132-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	01/13/16 23:18	30,2540D	RT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG857138-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	01/14/16 00:20	01/14/16 00:32	119,3500CR-B	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG857218-1										
Phenolics, Total	ND		mg/l	0.030	--	1	01/14/16 13:00	01/19/16 09:24	4,420.1	MP
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG857254-1										
Cyanide, Total	ND		mg/l	0.005	--	1	01/14/16 09:43	01/15/16 11:16	30,4500CN-CE	JO
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG857408-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	01/14/16 16:49	01/14/16 23:20	74,1664A	ML
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG857783-1										
Chloride	ND		mg/l	0.500	--	1	-	01/14/16 20:32	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Number: L1601065
Report Date: 01/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG857123-2								
Chlorine, Total Residual	105		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG857138-2								
Chromium, Hexavalent	97		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG857218-2								
Phenolics, Total	103		-		70-130	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG857254-2								
Cyanide, Total	105		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG857408-2								
TPH	90		-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG857783-2								
Chloride	103		-		90-110	-		

Matrix Spike Analysis

Batch Quality Control

Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Number: L1601065
Report Date: 01/19/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857138-4 QC Sample: L1601065-01 Client ID: HA16-204(OW)												
Chromium, Hexavalent	ND	0.1	0.102	102		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857218-4 QC Sample: L1601065-01 Client ID: HA16-204(OW)												
Phenolics, Total	ND	0.4	0.40	100		-	-		70-130	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857254-4 QC Sample: L1601007-01 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.187	94		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857408-4 QC Sample: L1600832-01 Client ID: MS Sample												
TPH	4.60	20.4	20.8	79		-	-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857783-3 QC Sample: L1600863-01 Client ID: MS Sample												
Chloride	62.6	20	83.3	103		-	-		40-151	-		18

Lab Duplicate Analysis Batch Quality Control

Project Name: MYLES STANDISH HALL
Project Number: 42035-000

Lab Number: L1601065
Report Date: 01/19/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857123-3 QC Sample: L1601065-01 Client ID: HA16-204(OW)						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857132-2 QC Sample: L1600879-01 Client ID: DUP Sample						
Solids, Total Suspended	28	23	mg/l	20		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857138-3 QC Sample: L1601065-01 Client ID: HA16-204(OW)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857218-3 QC Sample: L1601065-01 Client ID: HA16-204(OW)						
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857254-3 QC Sample: L1601065-01 Client ID: HA16-204(OW)						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857408-3 QC Sample: L1600832-01 Client ID: DUP Sample						
TPH	4.60	4.90	mg/l	6		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG857783-4 QC Sample: L1600863-01 Client ID: DUP Sample						
Chloride	62.6	62.3	mg/l	0		18

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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler

A Absent

B Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1601065-01A	Vial HCl preserved	B	N/A	2.6	Y	Absent	8260-SIM(14),8260(14)
L1601065-01B	Vial HCl preserved	B	N/A	2.6	Y	Absent	8260-SIM(14),8260(14)
L1601065-01C	Vial HCl preserved	B	N/A	2.6	Y	Absent	8260-SIM(14),8260(14)
L1601065-01D	Vial Na2S2O3 preserved	B	N/A	2.6	Y	Absent	504(14)
L1601065-01E	Vial Na2S2O3 preserved	B	N/A	2.6	Y	Absent	504(14)
L1601065-01F	Plastic 250ml HNO3 preserved	A	<2	3.9	Y	Absent	SE-6020T(180),CR-6020T(180),NI-6020T(180),CU-6020T(180),ZN-6020T(180),FE-U(180),PB-6020T(180),HG-U(28),AS-6020T(180),SB-6020T(180),AG-6020T(180),CD-6020T(180)
L1601065-01G	Plastic 250ml HNO3 preserved	A	<2	3.9	Y	Absent	HOLD-METAL-DISSOLVED(180)
L1601065-01H	Plastic 250ml NaOH preserved	A	>12	3.9	Y	Absent	HOLD-WETCHEM(0),TCN-4500(14)
L1601065-01H1	Plastic 120ml NaOH preserved	A	>12	3.9	Y	Absent	HOLD-WETCHEM(0)
L1601065-01J	Plastic 950ml unpreserved	A	7	3.9	Y	Absent	CL-300(28),HEXCR-3500(1),TRC-4500(1)
L1601065-01K	Plastic 950ml unpreserved	B	7	2.6	Y	Absent	TSS-2540(7)
L1601065-01L	Amber 950ml H2SO4 preserved	B	<2	2.6	Y	Absent	TPHENOL-420(28)
L1601065-01M	Amber 1000ml HCl preserved	B	N/A	2.6	Y	Absent	TPH-1664(28)
L1601065-01N	Amber 1000ml HCl preserved	B	N/A	2.6	Y	Absent	TPH-1664(28)
L1601065-01O	Amber 1000ml Na2S2O3	B	7	2.6	Y	Absent	PCB-608(7)
L1601065-01P	Amber 1000ml Na2S2O3	B	7	2.6	Y	Absent	PCB-608(7)
L1601065-01Q	Amber 1000ml unpreserved	B	7	2.6	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1601065-01R	Amber 1000ml unpreserved	B	7	2.6	Y	Absent	8270TCL(7),8270TCL-SIM(7)

*Values in parentheses indicate holding time in days



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GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

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

Terms

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

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

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

Report Format: Data Usability Report



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Data Qualifiers

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

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REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 5 Methods for the Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A, Part 136, 40 CFR (Code of Federal Regulations).
- 14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 74 Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.
- 119 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 21st Edition.

LIMITATION OF LIABILITIES

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

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



Certification Information

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

Westborough Facility

EPA 524.2: 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, m/p-xylene, o-xylene
EPA 624: 2-Butanone (MEK), 1,4-Dioxane, tert-Amylmethyl Ether, tert-Butyl Alcohol, m/p-xylene, o-xylene
EPA 625: Aniline, Benzoic Acid, Benzyl Alcohol, 4-Chloroaniline, 3-Methylphenol, 4-Methylphenol.
EPA 1010A: NPW: Ignitability
EPA 6010C: NPW: Strontium; SCM: Strontium
EPA 8151A: NPW: 2,4-DB, Dicamba, Dichloroprop, MCPA, MCPP; SCM: 2,4-DB, Dichloroprop, MCPA, MCPP
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene, Isopropanol; SCM: Iodomethane (methyl iodide), Methyl methacrylate (soil); 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Pentachloronitrobenzene, 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Pentachloronitrobenzene, 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.
EPA 9010: NPW: Amenable Cyanide Distillation, Total Cyanide Distillation
EPA 9038: NPW: Sulfate
EPA 9050A: NPW: Specific Conductance
EPA 9056: NPW: Chloride, Nitrate, Sulfate
EPA 9065: NPW: Phenols
EPA 9251: NPW: Chloride
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility

EPA 8270D: NPW: Biphenyl; SCM: Biphenyl
EPA 2540D: TSS
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water

EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7:** Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C,**
SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B
EPA 332: Perchlorate.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

Non-Potable Water

EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;
EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;
EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC,
SM426C, SM4500NH3-BH, EPA 350.1: Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**
EPA 353.2: Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4,**
SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,
Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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

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