



**NOTICE OF INTENT FOR DISCHARGE
UNDER MASSACHUSETTS
DEWATERING GENERAL PERMIT
MAG070000**

**CAMBRIDGE RINDGE AND LATIN
SCHOOL
459 BROADWAY**

CAMBRIDGE MASSACHUSETTS

to

**U.S. Environmental Protection Agency,
Massachusetts Department of
Environmental Protection**

March 18, 2010

Project No. 4773



Geotechnical Engineers

March 18, 2010

U.S Environmental Protection Agency
Office of Ecosystem Protection (OEP06-3)
5 Post Office Square
Boston, MA 02109-3912

Attention: Dewatering GP Processing

Massachusetts Department of Environmental Protection
Division of Watershed Management
627 Main Street
Worcester, MA 01608

Attention: Mr. Robert D. Kubit

Reference: Cambridge Rindge and Latin School; 459 Broadway; Cambridge, Massachusetts
Notice of Intent for Construction Dewatering Discharge Under Massachusetts General
Discharge MAG070000

Ladies and Gentlemen:

On behalf of the City of Cambridge, McPhail Associates, Inc. has prepared the attached Notice of Intent for coverage under the Massachusetts Dewatering General Permit MAG070000 (DGP) for the temporary discharge of groundwater into the Charles River via a storm drain system during construction at the above referenced site. Refer to **Figure 1** entitled Project Location Plan for the general site locus.

These services were performed and this permit application was prepared in accordance with authorization of HMFH Architects, Inc. These services are subject to the limitations contained in **Attachment A**.

Renovations are proposed for the Cambridge Rindge and Latin School that may require temporary dewatering of groundwater at limited areas of the site. These renovations that may require dewatering of groundwater include the excavation and removal of (3) three underground storage tanks (USTs) containing fuel oil and below grade repairs to a portion of the building foundation. The areas of excavation associated with the dewatering activities are limited to less than 1 acre. The areas of excavation that may require temporary dewatering of groundwater are shown on the attached **Figure 2, Site Plan**.

It is anticipated that dewatering by means of strategically located sumps and trenches should suffice during construction activities. Given that the proposed scope of construction includes excavation for the removal of USTs and foundation repairs, a sedimentation tank, 5,000-gallons in capacity, will be incorporated into the discharge system in order to meet allowable discharge limits for total suspended solids (TSS) established by the DGP. It is estimated that continuous and intermittent groundwater discharge required during the construction activities will be on the order of 35 to 50 gallons per minute (GPM). This estimate of discharge does not include surface runoff which will be removed from the excavation during the limited duration of a rain storm and shortly thereafter. A schematic of the treatment system is shown on **Figure 3**.

A review of available plans on the City of Cambridge on-line GIS database indicates that a dedicated storm drain is located beneath Cambridge Street which bounds the northern side of the site. Specifically, the 28-inch by 36-inch dedicated storm drain located beneath Cambridge Street flows east and connects



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US EPA
Massachusetts DEP
March 18, 2010
Page 2

to a 32-inch by 42-inch storm drain beneath Quincy Street. The Quincy Street storm drain runs from north to south beneath several streets before increasing to a 72-inch diameter storm drain beneath Dewolf Street. The 72-inch diameter storm drain crosses beneath Memorial Drive and discharges into the Charles River, a Class B water body. The location of the relevant catch basins with relation to the site are indicated on **Figure 2**. The flow path of the discharge is shown in plans provided by the City of Cambridge on-line GIS database which are included in **Figures 4A through 4D**.

To document the effectiveness of the above treatment system, samples of the discharge water will be obtained and tested for the presence of TSS, oil and grease prior to the start of discharge into the storm drain system. Should the pre-start up testing indicate that the levels of TSS, oil and grease in the effluent from the settling tank exceed the limits established under the DGP, additional filtration and treatment of the effluent will be implemented prior to discharge.

In conclusion, it is our opinion that groundwater at the site is acceptable for discharge into the storm drain system and ultimately into the Charles River under a Dewatering General Permit. Sampling and analysis of the effluent will be carried out in accordance with the terms of Dewatering General Permit.

Supplemental information attached to this letter in support of the DGP includes the following;

- Notice of Intent
Transmittal Form for Permit Application and Payment
- A summary of groundwater analysis (**Attachment B, Table 1 and Table 2**);
- A review of adjacent and nearby DEP-listed disposal sites (**Attachment C**);
- A review of Areas of Critical Concern and Endangered and Threatened Species (**Attachment D**);
and
- A review of National Historic Places (**Attachment E**).

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

Very truly yours,

McPHAIL ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "William J. Burns".

William J. Burns

A handwritten signature in black ink, appearing to read "Ambrose J. Donovan".

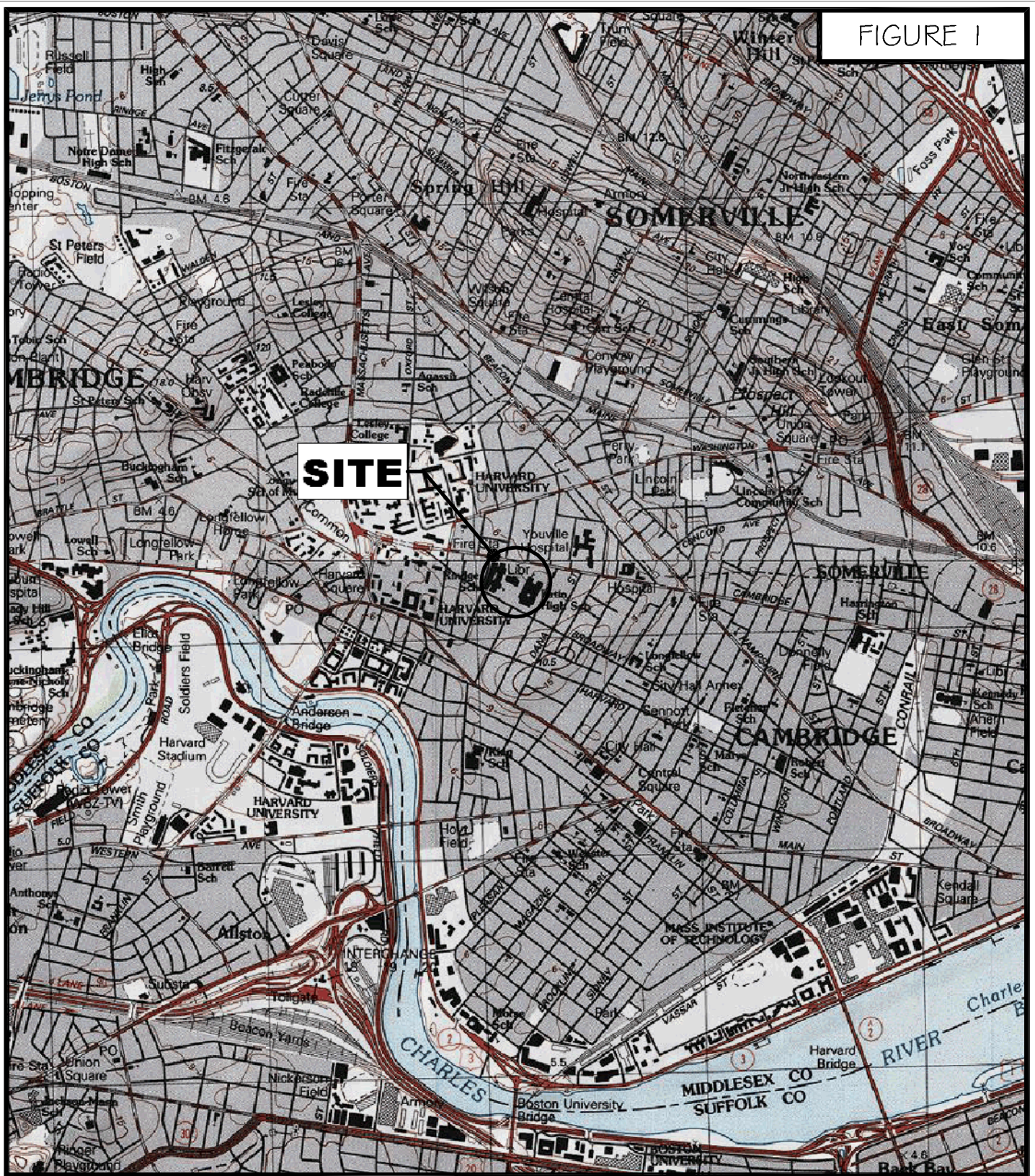
Ambrose J. Donovan, P.E., L.S.P.

Enclosures

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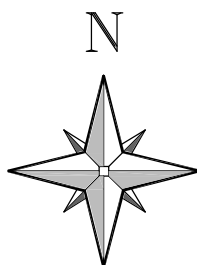
WJB/ajd

FIGURE 1



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



SCALE 1:25,000

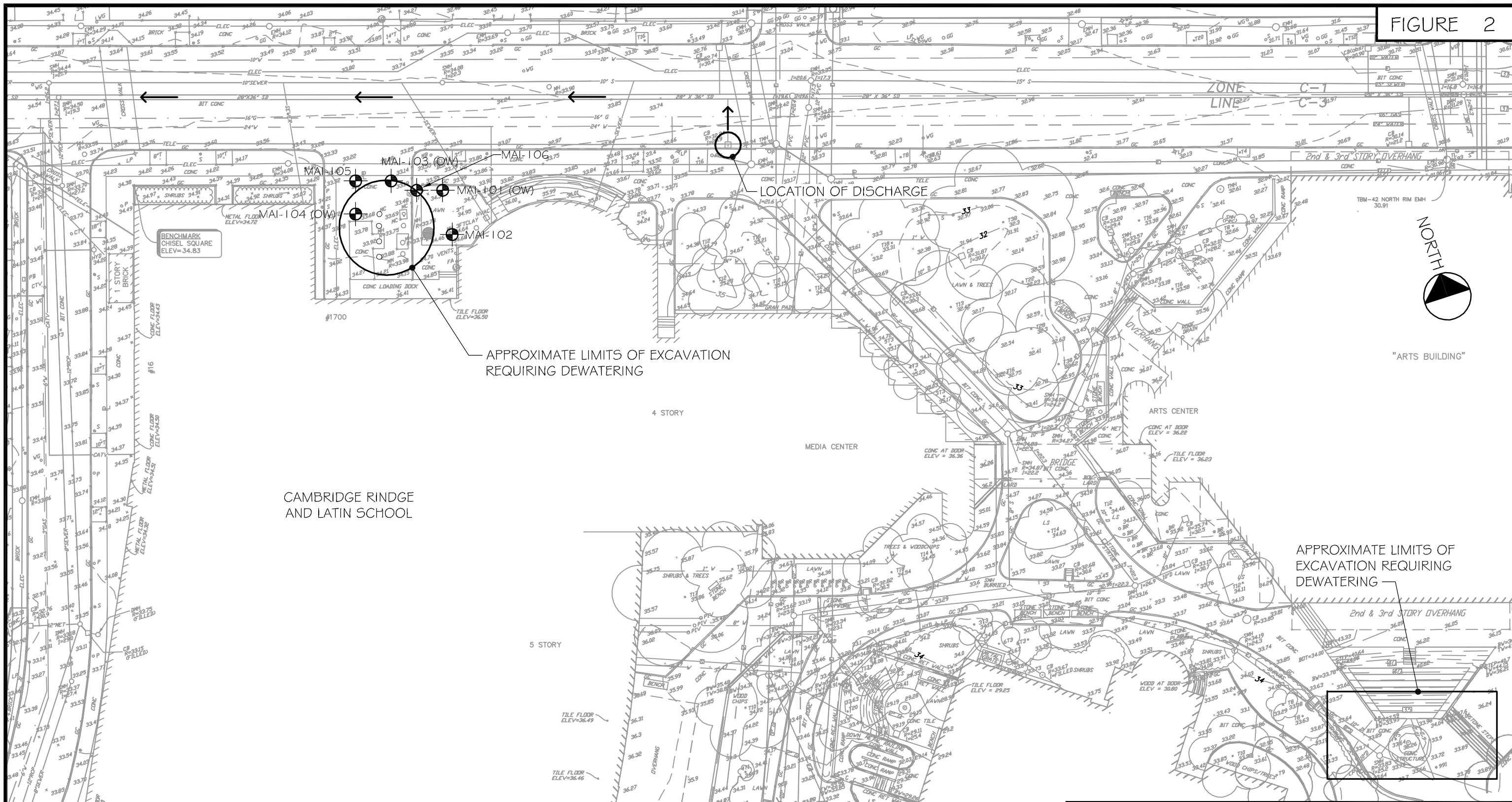
PROJECT LOCATION PLAN

CAMBRIDGE RINDGE AND LATIN SCHOOL

CAMBRIDGE

MASSACHUSETTS

FIGURE 2



LEGEND

- APPROXIMATE LOCATION OF BORING PERFORMED BY CARR-DEE CORP. DURING AUGUST 2008 FOR McPHAIL ASSOCIATES, INC.
- (OW) — INDICATES OBSERVATION WELL INSTALLED WITHIN COMPLETED BORING
- LOCATION OF MANHOLE COVER

REFERENCE: THIS PLAN WAS PREPARED FROM A 20-SCALE DRAWING ENTITLED, "EXISTING CONDITIONS PLAN" DATED JANUARY 12, 2008 PREPARED BY PRECISION LAND SURVEYING, INC.

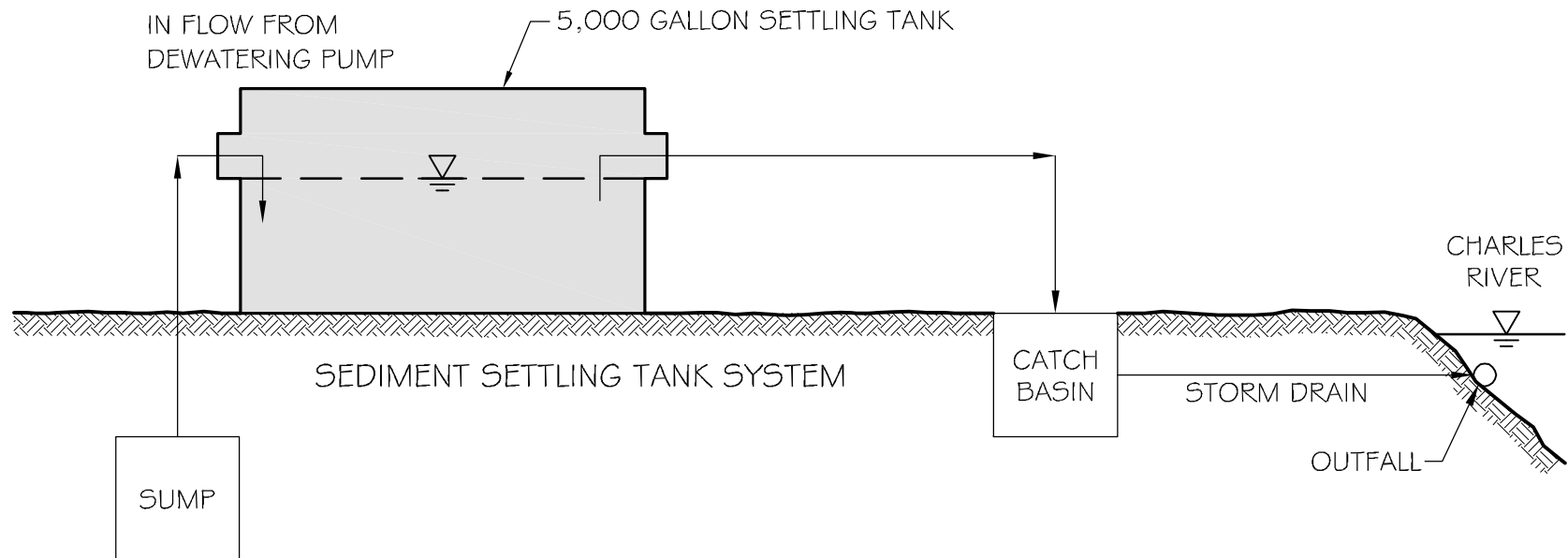


McPHAIL ASSOCIATES, LLC
Geotechnical Engineers
2269 Massachusetts Avenue
Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)

CAMBRIDGE RINDGE AND LATIN SCHOOL			
CAMBRIDGE		MASSACHUSETTS	
SITE PLAN			
FOR			
CITY OF CAMBRIDGE			
BY			
McPHAIL ASSOCIATES, INC.			
CONSULTING GEOTECHNICAL ENGINEERS			
Date: MARCH 2010	Dwn: F.G.P.	Chkd: W.J.B.	Scale: 1" = 40'
Project No: 4773			

FILE NAME: 4773-F02a

FIGURE 3



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CAMBRIDGE RINDGE AND LATION SCHOOL

CAMBRIDGE

MASSACHUSETTS

SCHEMATIC OF WATER FLOW

FOR

CITY OF CAMBRIDGE

BY

McPHAIL ASSOCIATES, INC.

CONSULTING GEOTECHNICAL ENGINEERS

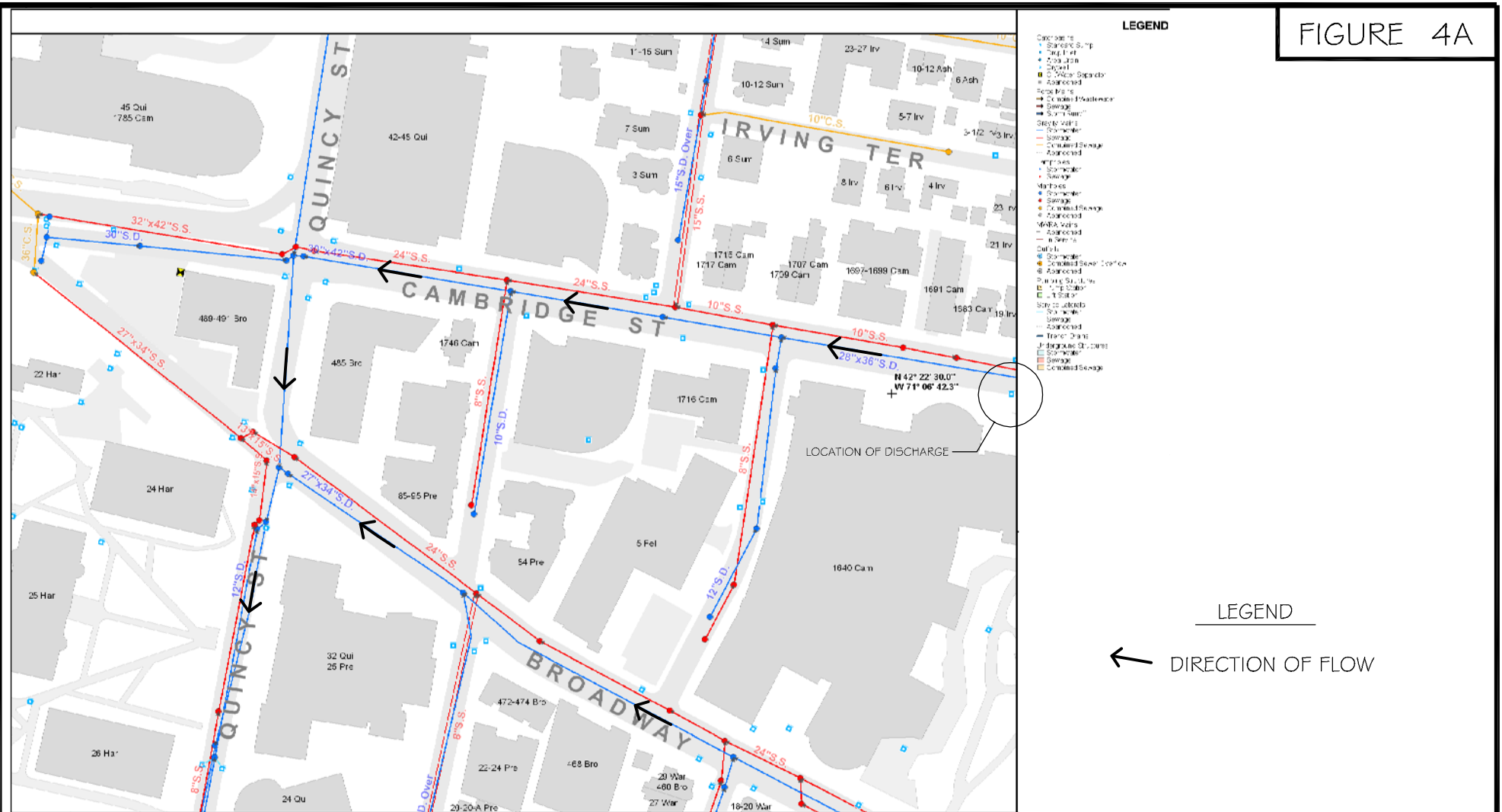
Date: MARCH 2010

Dwn: F.G.P.

Chkd: W.J.B.

Scale: N.T.S.

Project No: 4773



REFERENCE: CITY OF CAMBRIDGE ON-LINE
SEWER AND WATER ATLAS DATABASE.



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CAMBRIDGE RINDGE AND LATIN SCHOOL
CAMBRIDGE MASSACHUSETTS

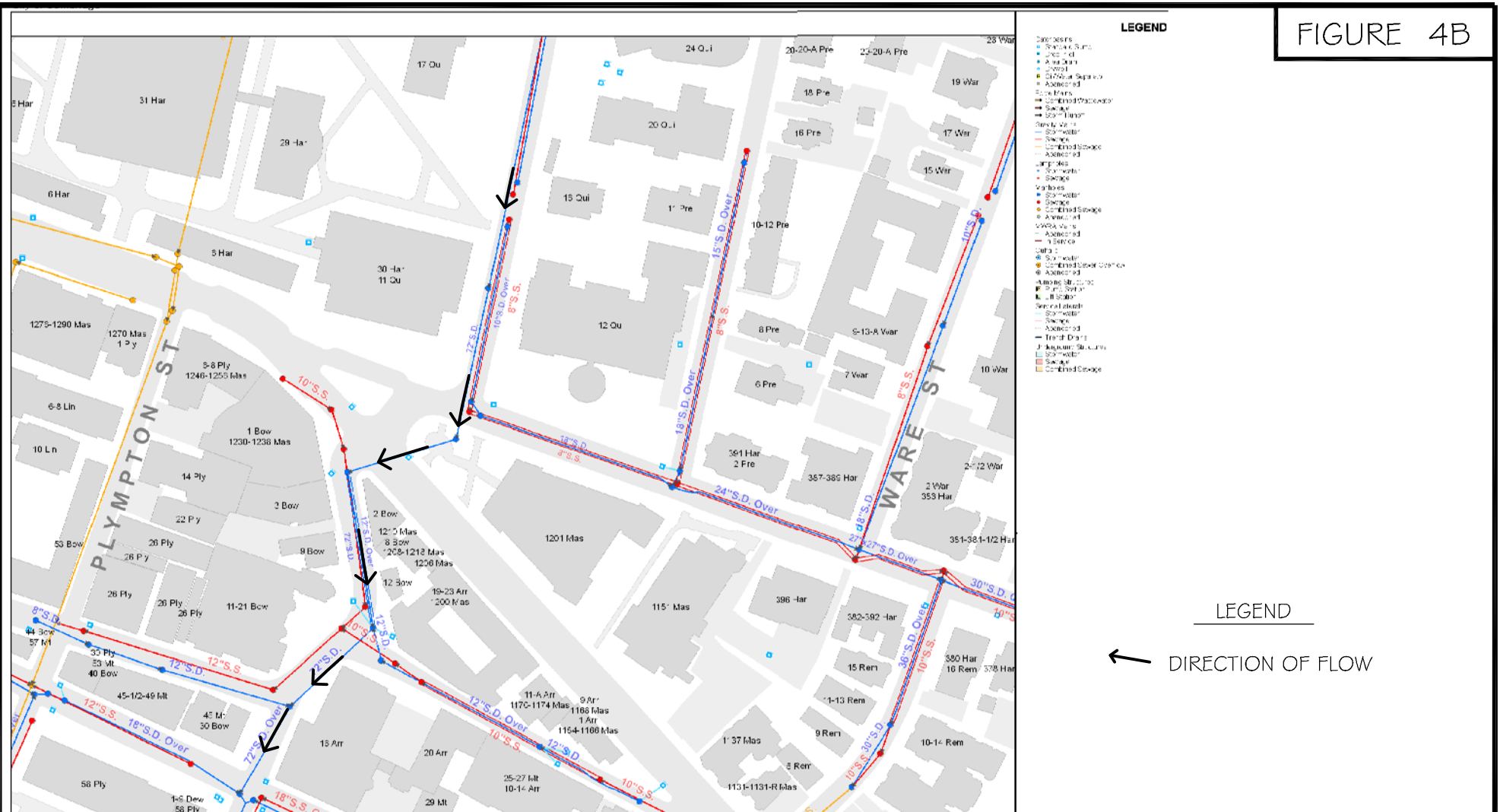
DISCHARGE LOCATION PLAN

FOR
CITY OF CAMBRIDGE

BY
McPHAIL ASSOCIATES, INC.
CONSULTING GEOTECHNICAL ENGINEERS

Date: FEBRUARY 2010	Dwn: F.G.P.	Chkd: W.J.B.	Scale: N.T.S.
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Project No: 4773



LEGEND

← DIRECTION OF FLOW

REFERENCE: CITY OF CAMBRIDGE ON-LINE
SEWER AND WATER ATLAS DATABASE.



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CAMBRIDGE RINDGE AND LATIN SCHOOL
CAMBRIDGE MASSACHUSETTS

DISCHARGE LOCATION PLAN

FOR
CITY OF CAMBRIDGE

BY
McPHAIL ASSOCIATES, INC.
CONSULTING GEOTECHNICAL ENGINEERS

Date: FEBRUARY 2010	Dwn: F.G.P.	Chkd: W.J.B.	Scale: N.T.S.
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Project No: 4773

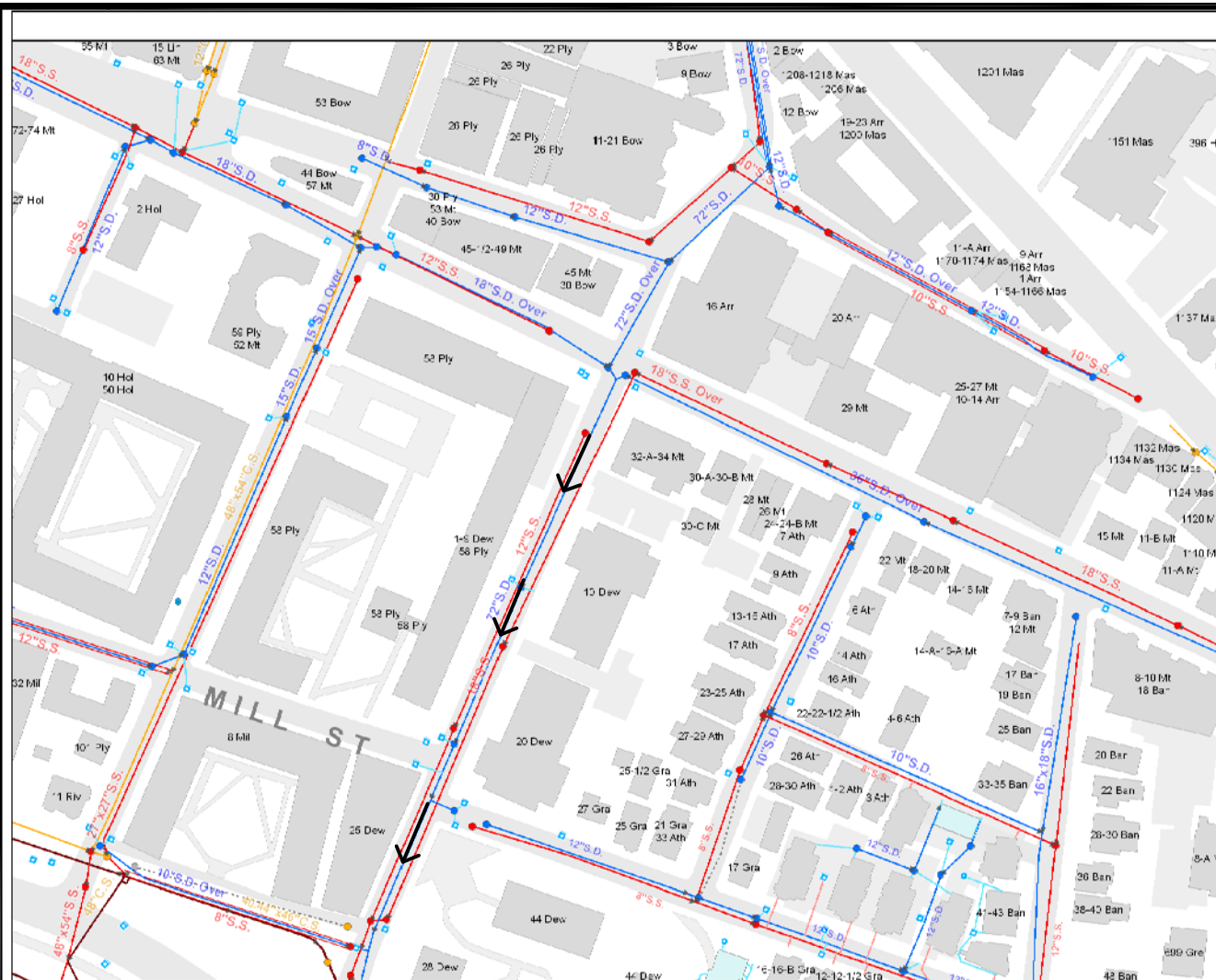


FIGURE 4C



LEGEND

← DIRECTION OF FLOW

REFERENCE: CITY OF CAMBRIDGE ON-LINE
SEWER AND WATER ATLAS DATABASE.



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CAMBRIDGE RINDGE AND LATIN SCHOOL
CAMBRIDGE MASSACHUSETTS

DISCHARGE LOCATION PLAN

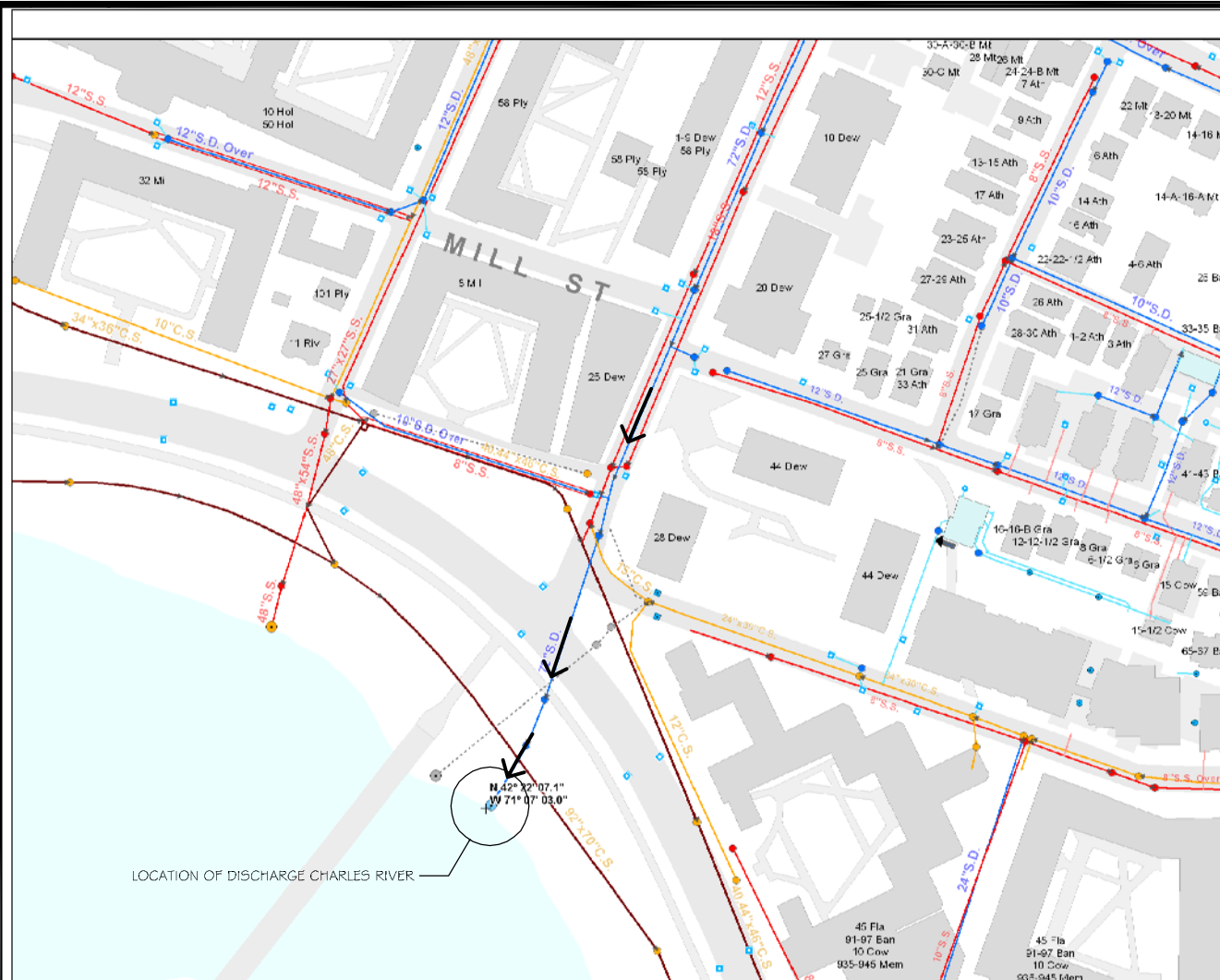
FOR
CITY OF CAMBRIDGE
BY

McPHAIL ASSOCIATES, INC.
CONSULTING GEOTECHNICAL ENGINEERS

Date: FEBRUARY 2010	Dwn: F.G.P.	Chkd: W.J.B.	Scale: N.T.S.
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Project No: 4773

FIGURE 4D



- LEGEND**
- Catchment
 - 12\"/>

LEGEND

← DIRECTION OF FLOW

REFERENCE: CITY OF CAMBRIDGE ON-LINE
SEWER AND WATER ATLAS DATABASE.



McPHAIL ASSOCIATES, INC.

Geotechnical Engineers

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Cambridge, MA 02140
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617/868-1423 (Fax)

CAMBRIDGE RINDGE AND LATIN SCHOOL	
CAMBRIDGE	MASSACHUSETTS
DISCHARGE LOCATION PLAN	
FOR	
CITY OF CAMBRIDGE	
BY	
McPHAIL ASSOCIATES, INC.	
CONSULTING GEOTECHNICAL ENGINEERS	
Date: FEBRUARY 2010	Dwn: F.G.P. Chkd: W.J.B. Scale: N.T.S.
Project No:	4773

II. Suggested Notice of Intent (NOI) Form

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

a) Name of facility: Cambridge Rindge and Latin School		Mailing Address for the Facility: 459 Broadway Street; Cambridge MA 02139	
b) Location Address of the Facility (if different from mailing address):	Facility Location	Type of Business:	
	longitude: 71 06'37" latitude: 42 22'39"	School	
		Facility SIC codes:	
c) Name of facility owner: City of Cambridge		Owner's email: citymanager@cambridgema.gov	
Owner's Tel #: 617-349-4300		Owner's Fax #: _____	
Address of owner (if different from facility address)			
795 Massachusetts Avenue		Municipality	
Cambridge, MA 02139		☐	
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: Mr. Robert W. Healy			
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: 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 72,000 GPD
Average Monthly Flow 50,400 GPD

e) What is the maximum and minimum monthly pH of the discharge (in s.u.)? Max pH 7.5 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.

g) What treatment does the wastewater receive prior to discharge? 5,000-GALLON SETTLING TANK

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) 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 _____
Is the discharge temporary? Yes ✓ No _____
If yes, approximate start date of dewatering MARCH 22, 2010 approximate end date of dewatering MARCH 1, 2011

i) Latitude and longitude of each discharge within 100 feet (See http://www.epa.gov/tri/report/siting_tool): Outfall 1: long. 71°06' 37 lat. 42°22' 29 ;
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 _____ 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)).
b) Please report any known remediation activities or water-quality issues in the vicinity of the 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? 1

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:

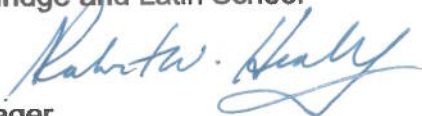
I certify under penalty of law that (1) no biocides or other chemical additives except for those used for pH adjustment and/or dechlorination are used in the dewatering system; (2) the discharge consists solely of dewatering and authorized pH adjustment and/or

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: Cambridge Rindge and Latin School

Operator signature:



Title: Cambridge City Manager

Date: 3/17/10

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.



Enter your transmittal number

X232437

Transmittal Number

Your unique Transmittal Number can be accessed online: <http://mass.gov/dep/service/online/trasmfrm.shtml> or call MassDEP's InfoLine at 617-338-2255 or 800-462-0444 (from 508, 781, and 978 area codes).

Massachusetts Department of Environmental Protection

Transmittal Form for Permit Application and Payment

1. Please type or print. A separate Transmittal Form must be completed for each permit application.

2. Make your check payable to the Commonwealth of Massachusetts and mail it with a copy of this form to: DEP, P.O. Box 4062, Boston, MA 02211.

3. Three copies of this form will be needed.

Copy 1 - the original must accompany your permit application. **Copy 2** must accompany your fee payment. **Copy 3** should be retained for your records

4. Both fee-paying and exempt applicants must mail a copy of this transmittal form to:

MassDEP
P.O. Box 4062
Boston, MA
02211

*** Note:**
For BWSC Permits,
enter the LSP.

A. Permit Information

BRPWM10

Dewatering General Permit

1. Permit Code: 7 or 8 character code from permit instructions

2. Name of Permit Category

Construction Dewatering

3. Type of Project or Activity

B. Applicant Information – Firm or Individual

City of Cambridge

1. Name of Firm - Or, if party needing this approval is an individual enter name below:

2. Last Name of Individual

3. First Name of Individual

4. MI

795 Massachusetts Avenue

5. Street Address

Cambridge

MA

02139

617-349-4251

6. City/Town

7. State

8. Zip Code

9. Telephone #

10. Ext. #

Michael Black

11. Contact Person

12. e-mail address (optional)

C. Facility, Site or Individual Requiring Approval

Cambridge Rindge and Latin School

1. Name of Facility, Site Or Individual

459 Broadway

2. Street Address

Cambridge

MA

02139

3. City/Town

4. State

5. Zip Code

6. Telephone #

7. Ext. #

8. DEP Facility Number (if Known)

9. Federal I.D. Number (if Known)

10. BWSC Tracking # (if Known)

D. Application Prepared by (if different from Section B)*

McPhail Associates, Inc.

1. Name of Firm Or Individual

2269 Massachusetts Avenue

2. Address

Cambridge

MA

02140

617-868-1420

3. City/Town

4. State

5. Zip Code

6. Telephone #

7. Ext. #

William Burns

8. Contact Person

9. LSP Number (BWSC Permits only)

E. Permit - Project Coordination

1. Is this project subject to MEPA review? ☐ yes ☒ no

If yes, enter the project's EOE file number - assigned when an Environmental Notification Form is submitted to the MEPA unit:

EOEA File Number

F. Amount Due

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

Special Provisions:

1. ☐ **Fee Exempt** (city, town or municipal housing authority)(state agency if fee is \$100 or less).

There are no fee exemptions for BWSC permits, regardless of applicant status.

2. ☐ **Hardship Request** - payment extensions according to 310 CMR 4.04(3)(c).

3. ☐ **Alternative Schedule Project** (according to 310 CMR 4.05 and 4.10).

4. ☐ **Homeowner** (according to 310 CMR 4.02).

27238

385.00

2/26/2010

Check Number

Dollar Amount

Date

27238

Cambridge Trust Company
CAMBRIDGE, MASS.

MCPHAIL ASSOCIATES, LLC.

2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140

53-59-113

2/26/2010

PAY
TO THE
ORDER OF
Commonwealth of Mass. \$ **385.00

Three Hundred Eighty-Five and 00/100***** DOLLARS

Commonwealth of Mass.



AUTHORIZED SIGNATURE

MEMO
4773.9.02

⑈027238⑈ ⑆011300595⑆ ⑈50552801⑈

MCPHAIL ASSOCIATES, LLC.

Commonwealth of Mass.

4773.9.02 - DGP Permit

2/26/2010

27238

385.00

McPhail LLC

4773.9.02

385.00



Geotechnical Engineers

ATTACHMENT A

LIMITATIONS

The purpose of this report is to present the results of testing of groundwater samples obtained from monitoring wells on the property identified as Cambridge Rindge and Latin School at 459 Broadway in Cambridge, Massachusetts, in support of an application for approval of construction site dewatering discharge into surface waters of the Commonwealth of Massachusetts under EPA's Massachusetts Dewatering General Permit MAG070000.

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

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

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

This report and application have been prepared on behalf of and for the exclusive use of the City of Cambridge. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party nor used in whole or in part by any other party without prior written consent of McPhail Associates, Inc.



Geotechnical Engineers

ATTACHMENT B

RESULTS OF GROUNDWATER ANALYSIS

In August of 2008, a groundwater sample was obtained from each of observation well MAI-101(OW), MAI-102 (OW), and MAI-103 (OW) and was submitted to a laboratory for analysis for the presence of volatile petroleum hydrocarbons (VPH) with target volatile organic compounds (VOCs) and extractable petroleum hydrocarbons (EPH) plus target polynuclear aromatic hydrocarbons (PAHs). No evidence of odor or oil sheen was noted in the groundwater samples. The locations of each observation well are shown in **Figure 2** and the results of the analysis are summarized in **Table 1**.

With the exception of the sample obtained from MAI-101(OW), the analysis of groundwater did not detect the presence of VPH, target VOCs, EPH or target PAHs, at concentrations in excess of the laboratory method detection limits, which are at or below the MCP RCGW-2 reporting concentrations. The groundwater sample obtained from MAI-101(OW) exhibited a concentration of 2-methylnaphthalene and VPH fraction C₅-C₈ aliphatics at 0.424 micrograms per liter (ug/l) and 105 ug/l, respectively.

On February, 25, 2010, a groundwater sample was obtained from MAI-104(OW) and tested for the presence of compounds required under the EPA Dewatering General Permit (DGP) application, including pH, total chloride, and total recoverable metals (antimony, arsenic, cadmium, chromium, hexavalent chromium, copper, iron, mercury, nickel, silver, and zinc). The results of the analysis are summarized in **Table 2**.

The tested sample exhibited a pH level of 7.3 Standard Units (S.U.) which is within the DGP effluent parameters for discharge into a freshwater body. The results of the analysis indicated the presence of chloride at a concentration of 530 milligrams per liter (mg/l). In addition, the analysis detected antimony, arsenic, copper, and nickel at concentrations of 1.0 ug/l, 0.7 ug/l, 4.5 ug/l, and 2.1 ug/l, respectively. The remaining metals were not detected at concentrations above the laboratory method detection limits which are set below the DGP detection limits. All of these results are below the minimum levels included in Appendix VIII of the DGP and effluent limits included in the Remedial General Permit (RGP) for fresh water.

TABLE 1
ANALYTICAL RESULTS-GROUNDWATER

Cambridge Rindge and Latin School
Cambridge, Massachusetts
Project No. 4773

LOCATION		MAI-101	MAI-103	MAI-104
SAMPLING DATE		8/19/2008	8/19/2008	8/19/2008
LAB SAMPLE ID		L0812264-01	L0812866-01	L0812866-02
Volatile Petroleum Hydrocarbons with target Volatile Organic Compounds (ug/l)				
C9-C10 Aromatics	700	ND(50)	ND(50)	ND(50)
C5-C8 Aliphatics, Adjusted	300	105	ND(50)	ND(50)
C9-C12 Aliphatics, Adjusted	700	ND(50)	ND(50)	ND(50)
Benzene	5	ND(2)	ND(2)	ND(2)
Toluene	1000	ND(2)	ND(2)	ND(2)
Ethylbenzene	700	ND(2)	ND(2)	ND(2)
p/m-Xylene	5000	ND(2)	ND(2)	ND(2)
o-Xylene	5000	ND(2)	ND(2)	ND(2)
Methyl tert butyl ether	70	ND(3)	ND(3)	ND(3)
Naphthalene	140	ND(10)	ND(10)	ND(10)
Extractable Petroleum Hydrocarbons with target Polynuclear Aromatic Hydrocarbons (ug/l)				
C9-C18 Aliphatics	700	ND(104)	ND(104)	ND(105)
C19-C36 Aliphatics	14000	ND(104)	ND(104)	ND(105)
C11-C22 Aromatics, Adjusted	200	ND(104)	ND(104)	ND(105)
Naphthalene	140	ND(0.417)	ND(0.417)	ND(0.421)
2-Methylnaphthalene	10	0.424	ND(0.417)	ND(0.421)
Acenaphthylene	30	ND(0.417)	ND(0.417)	ND(0.421)
Acenaphthene	20	ND(0.417)	ND(0.417)	ND(0.421)
Fluorene	30	ND(0.417)	ND(0.417)	ND(0.421)
Phenanthrene	40	ND(0.417)	ND(0.417)	ND(0.421)
Anthracene	30	ND(0.417)	ND(0.417)	ND(0.421)
Fluoranthene	90	ND(0.417)	ND(0.417)	ND(0.421)
Pyrene	20	ND(0.417)	ND(0.417)	ND(0.421)
Benzo(a)anthracene	1	ND(0.417)	ND(0.417)	ND(0.421)
Chrysene	2	ND(0.417)	ND(0.417)	ND(0.421)
Benzo(b)fluoranthene	1	ND(0.417)	ND(0.417)	ND(0.421)
Benzo(k)fluoranthene	1	ND(0.417)	ND(0.417)	ND(0.421)
Benzo(a)pyrene	0.2	ND(0.2)	ND(0.2)	ND(0.2)
Indeno(1,2,3-cd)Pyrene	0.5	ND(0.417)	ND(0.417)	ND(0.421)
Dibenzo(a,h)anthracene	0.5	ND(0.417)	ND(0.417)	ND(0.421)
Benzo(ghi)perylene	20	ND(0.417)	ND(0.417)	ND(0.421)

ND - Not detected above Laboratory Reported Detection Limit
Reported Detection Limit shown in ()
Results compared to MCP RCGW-1
reporting thresholds.

TABLE 2
DGP Permit Groundwater Analysis

Cambridge Rindge and Latin School
459 Broadway; Cambridge, MA
Project No. 4773

LOCATION	RGP Limits	MAI-104 (OW)
SAMPLING DATE		25-FEB-10
LAB SAMPLE ID		L1002822-01
General Chemistry		
Chloride (mg/l)		530
pH (SU)		7.3
Total Metals (ug/l)		
Antimony	5.6	1
Arsenic	10	0.7
Cadmium	0.2	ND [0.5]
Chromium	48.8	ND [0.5]
Chromium, Hexavalent	11.4	ND [10]
Copper	5.2	4.5
Iron	1000	ND [50]
Mercury	0.9	ND [0.2]
Nickel	29	2.1
Silver	1.2	ND [0.5]
Zinc	66.6	ND [5.0]

ALPHA ANALYTICAL

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220 www.alphalab.com
MA:M-MA086 NH:2003 CT:PH-0574 ME:MA0086 RI:LA000065 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: McPhail Associates	Laboratory Job Number: L0812264
Address: 2269 Massachusetts Avenue Cambridge, MA 02140	Date Received: 19-AUG-2008 Date Reported: 26-AUG-2008
Attn: Mr. Ambrose Donovan	Delivery Method: Alpha
Project Number: 4773.9.00	Site: CRLS

The following questions pertain only to MCP Analytical Methods

An affirmative response to questions A,B,C & D is required for "Presumptive Certainty" status

- A. Were all samples received by the laboratory in a condition consistent with those described on their Chain-of-Custody documentation for the data set? YES
- B. Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines? YES
- C. Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? YES
- D. **VPH and EPH methods only:** Was the VPH or EPH method run without significant modifications, as specified in Section 11.3? YES

A response to questions E and F is required for "Presumptive Certainty" status

- E. Were all QC performance standards and recommendations for the specified method(s) achieved? YES
- F. Were results for all analyte-list compounds/elements for the specified method(s) reported? YES

Any answers of NO to the above questions are addressed in the case narrative.

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

Authorized by: _____

Technical Representative

ALPHA ANALYTICAL

Laboratory Job Number: L0812264
Date Reported: 26-AUG-2008

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0812264-01	MAI-101	CAMBRIDGE, MA
L0812264-02	MAI-103	CAMBRIDGE, MA
L0812264-03	MAI-104	CAMBRIDGE, MA

**ALPHA ANALYTICAL
NARRATIVE REPORT**

Laboratory Job Number: L0812264

The samples were received in accordance with the chain of custody and no significant deviations were encountered during preparation or analysis unless otherwise noted below.

MCP Related Narratives

Sample Receipt

Sample "MAI 101" was analyzed at the client's request.

EPH by method EPH-04-1

Extraction method: 3510C

**ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:2003 CT:PH-0574 ME:MA0086 RI:LA000065 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0812264-01

MAI-101

Date Collected: 19-AUG-2008 09:45

Date Received : 19-AUG-2008

Sample Matrix: WATER

Date Reported : 26-AUG-2008

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	ID ANAL
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Volatile Petroleum Hydrocarbons				59 VPH-04-1.1	0821 13:38	TT
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Quality Control Information

Condition of sample received:

Satisfactory

Aqueous preservative:

Laboratory Provided Preserved Container

Sample temperature upon receipt:

Received on Ice

C5-C8 Aliphatics	105	ug/l	50.0
C9-C12 Aliphatics	ND	ug/l	50.0
C9-C10 Aromatics	ND	ug/l	50.0
C5-C8 Aliphatics, Adjusted	105	ug/l	50.0
C9-C12 Aliphatics, Adjusted	ND	ug/l	50.0
Benzene	ND	ug/l	2.00
Toluene	ND	ug/l	2.00
Ethylbenzene	ND	ug/l	2.00
p/m-Xylene	ND	ug/l	2.00
o-Xylene	ND	ug/l	2.00
Methyl tert butyl ether	ND	ug/l	3.00
Naphthalene	ND	ug/l	10.0

Surrogate(s)	Recovery		QC Criteria
2,5-Dibromotoluene-PID	95.0	%	70-130
2,5-Dibromotoluene-FID	94.0	%	70-130

Comments: Complete list of References and Glossary of Terms found in Addendum I

**ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0812264-01
MAI-101

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
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EPH with MS Targets

61 EPH-04-1

0822 01:30 0825 20:59 MF

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous preservative:	Laboratory Provided Preserved Container
Sample temperature upon receipt:	Received on Ice
Sample extraction method:	Extracted Per the Method

C9-C18 Aliphatics	ND	ug/l	104
C19-C36 Aliphatics	ND	ug/l	104
C11-C22 Aromatics	ND	ug/l	104
C11-C22 Aromatics, Adjusted	ND	ug/l	104
Naphthalene	ND	ug/l	0.417
2-Methylnaphthalene	0.424	ug/l	0.417
Acenaphthylene	ND	ug/l	0.417
Acenaphthene	ND	ug/l	0.417
Fluorene	ND	ug/l	0.417
Phenanthrene	ND	ug/l	0.417
Anthracene	ND	ug/l	0.417
Fluoranthene	ND	ug/l	0.417
Pyrene	ND	ug/l	0.417
Benzo(a)anthracene	ND	ug/l	0.417
Chrysene	ND	ug/l	0.417
Benzo(b)fluoranthene	ND	ug/l	0.417
Benzo(k)fluoranthene	ND	ug/l	0.417
Benzo(a)pyrene	ND	ug/l	0.200
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.417
Dibenzo(a,h)anthracene	ND	ug/l	0.417
Benzo(ghi)perylene	ND	ug/l	0.417

Surrogate(s)	Recovery		QC Criteria
Chloro-Octadecane	78.0	%	40-140
o-Terphenyl	95.0	%	40-140
2-Fluorobiphenyl	91.0	%	40-140
2-Bromonaphthalene	92.0	%	40-140
0-Terphenyl-MS	95.0	%	40-140

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:2003 CT:PH-0574 ME:MA0086 RI:LA000065 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0812264-02

MAI-103

Sample Matrix:

WATER

Date Collected: 19-AUG-2008 10:15

Date Received : 19-AUG-2008

Date Reported : 26-AUG-2008

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	

***** THIS SAMPLE IS ON HOLD *****

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:2003 CT:PH-0574 ME:MA0086 RI:LA000065 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0812264-03

MAI-104

Sample Matrix:

WATER

Date Collected: 19-AUG-2008 10:45

Date Received : 19-AUG-2008

Date Reported : 26-AUG-2008

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	ANAL	ID
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***** THIS SAMPLE IS ON HOLD *****

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0812264

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Petroleum Hydrocarbons for sample(s) 01 (WG333255-1, WG333255-2)					
C5-C8 Aliphatics	91	78	15	25	70-130
C9-C12 Aliphatics	97	81	17	25	70-130
C9-C10 Aromatics	97	88	10	25	70-130
Benzene	96	87	9	25	70-130
Toluene	98	89	10	25	70-130
Ethylbenzene	97	88	10	25	70-130
p/m-Xylene	97	88	10	25	70-130
o-Xylene	98	89	9	25	70-130
Methyl tert butyl ether	95	88	8	25	70-130
Naphthalene	100	94	6	25	70-130
1,2,4-Trimethylbenzene	97	87	11	25	70-130
Pentane	89	77	15	25	70-130
2-Methylpentane	92	79	16	25	70-130
2,2,4-Trimethylpentane	97	81	18	25	70-130
n-Nonane	97	81	18	25	30-130
n-Decane	99	83	18	25	70-130
n-Butylcyclohexane	97	82	16	25	70-130
Surrogate(s)					
2,5-Dibromotoluene-PID	99	89	11		70-130
2,5-Dibromotoluene-FID	101	92	9		70-130
EPH with MS Targets for sample(s) 01 (WG333570-2, WG333570-3)					
C9-C18 Aliphatics	59	64	8	25	40-140
C19-C36 Aliphatics	94	95	1	25	40-140
C11-C22 Aromatics	96	97	1	25	40-140
Naphthalene	71	75	5	25	40-140
2-Methylnaphthalene	82	86	5	25	40-140
Acenaphthylene	84	89	6	25	40-140
Acenaphthene	83	86	4	25	40-140
Fluorene	100	102	2	25	40-140
Phenanthrene	103	101	2	25	40-140
Anthracene	117	116	1	25	40-140
Fluoranthene	136	132	3	25	40-140
Pyrene	133	125	6	25	40-140
Benzo(a)anthracene	130	124	5	25	40-140
Chrysene	105	102	3	25	40-140
Benzo(b)fluoranthene	96	95	1	25	40-140
Benzo(k)fluoranthene	99	93	6	25	40-140
Benzo(a)pyrene	90	84	7	25	40-140
Indeno(1,2,3-cd)Pyrene	114	106	7	25	40-140
Dibenzo(a,h)anthracene	112	106	6	25	40-140
Benzo(ghi)perylene	94	88	7	25	40-140
Nonane (C9)	50	59	17	25	30-140
Decane (C10)	61	71	15	25	40-140
Dodecane (C12)	70	80	13	25	40-140
Tetradecane (C14)	76	82	8	25	40-140
Hexadecane (C16)	83	87	5	25	40-140

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0812264

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
EPH with MS Targets for sample(s) 01 (WG333570-2, WG333570-3)					
Octadecane (C18)	87	92	6	25	40-140
Nonadecane (C19)	90	92	2	25	40-140
Eicosane (C20)	92	94	2	25	40-140
Docosane (C22)	93	94	1	25	40-140
Tetracosane (C24)	99	99	0	25	40-140
Hexacosane (C26)	96	96	0	25	40-140
Octacosane (C28)	97	97	0	25	40-140
triacontane (C30)	99	98	1	25	40-140
Hexatriacontane (C36)	102	102	0	25	40-140
Surrogate(s)					
Chloro-Octadecane	84	92	9		40-140
o-Terphenyl	113	117	3		40-140
2-Fluorobiphenyl	88	94	7		40-140
2-Bromonaphthalene	91	97	6		40-140
0-Terphenyl-MS	105	107	2		40-140
% Naphthalene Breakthrough	0	0	NC		
% 2-Methylnaphthalene Breakthrough	0	0	NC		

**ALPHA ANALYTICAL
QUALITY ASSURANCE FRACTIONATION CHECK**

Laboratory Job Number: L0812264

Parameter	% Recovery	QC Criteria
------------------	-------------------	--------------------

Fractionation Check Standard Recoveries for Lot 200818205

C9-C18 Aliphatics	77	40-140
C19-C36 Aliphatics	76	40-140
C11-C22 Aromatics	86	40-140
Naphthalene	82	40-140
2-Methylnaphthalene	78	40-140
Acenaphthylene	76	40-140
Acenaphthene	80	40-140
Fluorene	79	40-140
Phenanthrene	78	40-140
Anthracene	82	40-140
Fluoranthene	84	40-140
Pyrene	84	40-140
Benzo(a)anthracene	82	40-140
Chrysene	88	40-140
Benzo(b)fluoranthene	81	40-140
Benzo(k)fluoranthene	97	40-140
Benzo(a)pyrene	78	40-140
Indeno(1,2,3-cd)Pyrene	76	40-140
Dibenzo(a,h)anthracene	83	40-140
Benzo(ghi)perylene	82	40-140
Nonane (C9)	72	30-140
Decane (C10)	77	40-140
Dodecane (C12)	80	40-140
Tetradecane (C14)	76	40-140
Hexadecane (C16)	78	40-140
Octadecane (C18)	76	40-140
Nonadecane (C19)	75	40-140
Eicosane (C20)	77	40-140
Docosane (C22)	79	40-140
Tetracosane (C24)	83	40-140
Hexacosane (C26)	78	40-140
Octacosane (C28)	77	40-140
Triacontane (C30)	76	40-140
Hexatriacontane (C36)	75	40-140
Surrogate(s)		
Chloro-Octadecane	66	40-140
o-Terphenyl	83	40-140
2-Fluorobiphenyl	75	40-140
2-Bromonaphthalene	76	40-140
% Naphthalene Breakthrough	0	40-140
% 2-Methylnaphthalene Breakthrough	0	40-140

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0812264

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Blank Analysis for sample(s) 01 (WG333255-3)						
Volatile Petroleum Hydrocarbons				59 VPH-04-1.1	0821 08:23	TT
C5-C8 Aliphatics	ND	ug/l	50.0			
C9-C12 Aliphatics	ND	ug/l	50.0			
C9-C10 Aromatics	ND	ug/l	50.0			
C5-C8 Aliphatics, Adjusted	ND	ug/l	50.0			
C9-C12 Aliphatics, Adjusted	ND	ug/l	50.0			
Benzene	ND	ug/l	2.00			
Toluene	ND	ug/l	2.00			
Ethylbenzene	ND	ug/l	2.00			
p/m-Xylene	ND	ug/l	2.00			
o-Xylene	ND	ug/l	2.00			
Methyl tert butyl ether	ND	ug/l	3.00			
Naphthalene	ND	ug/l	10.0			
Surrogate(s)	Recovery		QC Criteria			
2,5-Dibromotoluene-PID	83.0	%	70-130			
2,5-Dibromotoluene-FID	81.0	%	70-130			
Blank Analysis for sample(s) 01 (WG333570-1)						
EPH with MS Targets				61 EPH-04-1	0822 01:30 0825 19:10	MF
C9-C18 Aliphatics	ND	ug/l	100			
C19-C36 Aliphatics	ND	ug/l	100			
C11-C22 Aromatics	ND	ug/l	100			
C11-C22 Aromatics, Adjusted	ND	ug/l	100			
Naphthalene	ND	ug/l	0.400			
2-Methylnaphthalene	ND	ug/l	0.400			
Acenaphthylene	ND	ug/l	0.400			
Acenaphthene	ND	ug/l	0.400			
Fluorene	ND	ug/l	0.400			
Phenanthrene	ND	ug/l	0.400			
Anthracene	ND	ug/l	0.400			
Fluoranthene	ND	ug/l	0.400			
Pyrene	ND	ug/l	0.400			
Benzo(a)anthracene	ND	ug/l	0.400			
Chrysene	ND	ug/l	0.400			
Benzo(b)fluoranthene	ND	ug/l	0.400			
Benzo(k)fluoranthene	ND	ug/l	0.400			
Benzo(a)pyrene	ND	ug/l	0.200			
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.400			
Dibenzo(a,h)anthracene	ND	ug/l	0.400			
Benzo(ghi)perylene	ND	ug/l	0.400			
Surrogate(s)	Recovery		QC Criteria			
Chloro-Octadecane	72.0	%	40-140			
o-Terphenyl	82.0	%	40-140			
2-Fluorobiphenyl	88.0	%	40-140			
2-Bromonaphthalene	89.0	%	40-140			

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0812264

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01 (WG333570-1)							
EPH with MS Targets cont'd				61 EPH-04-1	0822 01:30	0825 19:10	MF
O-Terphenyl-MS	93.0	%	40-140				

**ALPHA ANALYTICAL
ADDENDUM I**

REFERENCES

59. Method for the Determination of Volatile Petroleum Hydrocarbons (VPH).
Massachusetts Department of Environmental Protection, DEA/ORS/BWSC. May 2004,
Revision 1.1.
61. Method for the Determination of Extractable Petroleum Hydrocarbons (EPH).
Massachusetts Department of Environmental Protection, DEA/ORS/BWSC. May 2004,
Revision 1.1.

GLOSSARY OF TERMS AND SYMBOLS

REF	Reference number in which test method may be found.
METHOD	Method number by which analysis was performed.
ID	Initials of the analyst.
ND	Not detected in comparison to the reported detection limit.
NI	Not Ignitable.
ug/cart	Micrograms per Cartridge.
H	The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. 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, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. 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, Inc.

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

**ALPHA ANALYTICAL
LOGIN SPECIFIC INFORMATION**

Laboratory Job Number: L0812264

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0812264-01A	Vial HCl preserved	A	N/A	2.5C	Y	Absent	VPH-DELUX-04
L0812264-01B	Vial HCl preserved	A	N/A	2.5C	Y	Absent	VPH-DELUX-04
L0812264-01C	Amber 1000ml HCl preserved	A	<2	2.5C	Y	Absent	EPH-MS, EPHD-GC-04
L0812264-01D	Amber 1000ml HCl preserved	A	<2	2.5C	Y	Absent	EPH-MS, EPHD-GC-04
L0812264-02A	Vial HCl preserved	A	N/A	2.5C	Y	Absent	HOLD
L0812264-02B	Vial HCl preserved	A	N/A	2.5C	Y	Absent	HOLD
L0812264-02C	Amber 1000ml HCl preserved	A	<2	2.5C	Y	Absent	HOLD
L0812264-02D	Amber 1000ml HCl preserved	A	<2	2.5C	Y	Absent	HOLD
L0812264-03A	Vial HCl preserved	A	N/A	2.5C	Y	Absent	HOLD
L0812264-03B	Vial HCl preserved	A	N/A	2.5C	Y	Absent	HOLD
L0812264-03C	Amber 1000ml HCl preserved	A	<2	2.5C	Y	Absent	HOLD
L0812264-03D	Amber 1000ml HCl preserved	A	<2	2.5C	Y	Absent	HOLD

Container Comments

Container ID	Comments
--------------	----------

ALPHA ANALYTICAL

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220 www.alphalab.com
MA:M-MA086 NH:2003 CT:PH-0574 ME:MA0086 RI:LA000065 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: McPhail Associates	Laboratory Job Number: L0812866
Address: 2269 Massachusetts Avenue Cambridge, MA 02140	Date Received: 19-AUG-2008 Date Reported: 04-SEP-2008
Attn: Mr. Ambrose Donovan	Delivery Method: Alpha
Project Number: 4773.9.00	Site: CRLS

The following questions pertain only to MCP Analytical Methods

An affirmative response to questions A,B,C & D is required for "Presumptive Certainty" status

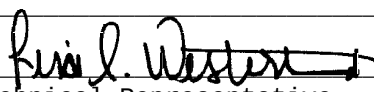
- A. Were all samples received by the laboratory in a condition consistent with those described on their Chain-of-Custody documentation for the data set? YES
- B. Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines? YES
- C. Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? YES
- D. **VPH and EPH methods only:** Was the VPH or EPH method run without significant modifications, as specified in Section 11.3? YES

A response to questions E and F is required for "Presumptive Certainty" status

- E. Were all QC performance standards and recommendations for the specified method(s) achieved? YES
- F. Were results for all analyte-list compounds/elements for the specified method(s) reported? YES

Any answers of NO to the above questions are addressed in the case narrative.

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

Authorized by: 
Technical Representative

ALPHA ANALYTICAL

Laboratory Job Number: L0812866

Date Reported: 04-SEP-2008

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0812866-01	MAI-103	CAMBRIDGE, MA
L0812866-02	MAI-104	CAMBRIDGE, MA

**ALPHA ANALYTICAL
NARRATIVE REPORT**

Laboratory Job Number: L0812866

The samples were received in accordance with the chain of custody and no significant deviations were encountered during preparation or analysis unless otherwise noted below.

MCP Related Narratives

EPH

Extraction method 3510C

**ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:2003 CT:PH-0574 ME:MA0086 RI:LA000065 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0812866-01

MAI-103

Sample Matrix:

WATER

Date Collected: 19-AUG-2008 10:15

Date Received : 19-AUG-2008

Date Reported : 04-SEP-2008

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber,1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	

Volatile Petroleum Hydrocarbons

59 VPH-04-1.1

0902 16:19 TT

Quality Control Information

Condition of sample received:

Satisfactory

Aqueous preservative:

Laboratory Provided Preserved Container

Sample temperature upon receipt:

Received on Ice

C5-C8 Aliphatics	ND	ug/l	50.0
C9-C12 Aliphatics	ND	ug/l	50.0
C9-C10 Aromatics	ND	ug/l	50.0
C5-C8 Aliphatics, Adjusted	ND	ug/l	50.0
C9-C12 Aliphatics, Adjusted	ND	ug/l	50.0
Benzene	ND	ug/l	2.00
Toluene	ND	ug/l	2.00
Ethylbenzene	ND	ug/l	2.00
p/m-Xylene	ND	ug/l	2.00
o-Xylene	ND	ug/l	2.00
Methyl tert butyl ether	ND	ug/l	3.00
Naphthalene	ND	ug/l	10.0

Surrogate(s)	Recovery		QC Criteria
2,5-Dibromotoluene-PID	103	%	70-130
2,5-Dibromotoluene-FID	102	%	70-130

Comments: Complete list of References and Glossary of Terms found in Addendum I

**ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0812866-01
MAI-103

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
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EPH with MS Targets

61 EPH-04-1

0902 14:25 0903 16:42 MF

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous preservative:	Laboratory Provided Preserved Container
Sample temperature upon receipt:	Received on Ice
Sample extraction method:	Extracted Per the Method

C9-C18 Aliphatics	ND	ug/l	104
C19-C36 Aliphatics	ND	ug/l	104
C11-C22 Aromatics	ND	ug/l	104
C11-C22 Aromatics, Adjusted	ND	ug/l	104
Naphthalene	ND	ug/l	0.417
2-Methylnaphthalene	ND	ug/l	0.417
Acenaphthylene	ND	ug/l	0.417
Acenaphthene	ND	ug/l	0.417
Fluorene	ND	ug/l	0.417
Phenanthrene	ND	ug/l	0.417
Anthracene	ND	ug/l	0.417
Fluoranthene	ND	ug/l	0.417
Pyrene	ND	ug/l	0.417
Benzo(a)anthracene	ND	ug/l	0.417
Chrysene	ND	ug/l	0.417
Benzo(b)fluoranthene	ND	ug/l	0.417
Benzo(k)fluoranthene	ND	ug/l	0.417
Benzo(a)pyrene	ND	ug/l	0.200
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.417
Dibenzo(a,h)anthracene	ND	ug/l	0.417
Benzo(ghi)perylene	ND	ug/l	0.417

Surrogate(s)	Recovery		QC Criteria
Chloro-Octadecane	57.0	%	40-140
o-Terphenyl	77.0	%	40-140
2-Fluorobiphenyl	87.0	%	40-140
2-Bromonaphthalene	89.0	%	40-140
0-Terphenyl-MS	75.0	%	40-140

Comments: Complete list of References and Glossary of Terms found in Addendum I

**ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:2003 CT:PH-0574 ME:MA0086 RI:LA000065 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0812866-02

Date Collected: 19-AUG-2008 10:45

MAI-104

Date Received : 19-AUG-2008

Sample Matrix: WATER

Date Reported : 04-SEP-2008

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1-Amber,1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
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Volatile Petroleum Hydrocarbons				59 VPH-04-1.1	0902 17:09 TT	
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Quality Control Information

Condition of sample received:

Satisfactory

Aqueous preservative:

Laboratory Provided Preserved Container

Sample temperature upon receipt:

Received on Ice

C5-C8 Aliphatics	ND	ug/l	50.0
C9-C12 Aliphatics	ND	ug/l	50.0
C9-C10 Aromatics	ND	ug/l	50.0
C5-C8 Aliphatics, Adjusted	ND	ug/l	50.0
C9-C12 Aliphatics, Adjusted	ND	ug/l	50.0
Benzene	ND	ug/l	2.00
Toluene	ND	ug/l	2.00
Ethylbenzene	ND	ug/l	2.00
p/m-Xylene	ND	ug/l	2.00
o-Xylene	ND	ug/l	2.00
Methyl tert butyl ether	ND	ug/l	3.00
Naphthalene	ND	ug/l	10.0

Surrogate(s)	Recovery		QC Criteria
2,5-Dibromotoluene-PID	104	%	70-130
2,5-Dibromotoluene-FID	105	%	70-130

Comments: Complete list of References and Glossary of Terms found in Addendum I

**ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0812866-02
MAI-104

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
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EPH with MS Targets 61 EPH-04-1 0902 14:25 0903 17:18 MF

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous preservative:	Laboratory Provided Preserved Container
Sample temperature upon receipt:	Received on Ice
Sample extraction method:	Extracted Per the Method

C9-C18 Aliphatics	ND	ug/l	105
C19-C36 Aliphatics	ND	ug/l	105
C11-C22 Aromatics	ND	ug/l	105
C11-C22 Aromatics, Adjusted	ND	ug/l	105
Naphthalene	ND	ug/l	0.421
2-Methylnaphthalene	ND	ug/l	0.421
Acenaphthylene	ND	ug/l	0.421
Acenaphthene	ND	ug/l	0.421
Fluorene	ND	ug/l	0.421
Phenanthrene	ND	ug/l	0.421
Anthracene	ND	ug/l	0.421
Fluoranthene	ND	ug/l	0.421
Pyrene	ND	ug/l	0.421
Benzo(a)anthracene	ND	ug/l	0.421
Chrysene	ND	ug/l	0.421
Benzo(b)fluoranthene	ND	ug/l	0.421
Benzo(k)fluoranthene	ND	ug/l	0.421
Benzo(a)pyrene	ND	ug/l	0.200
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.421
Dibenzo(a,h)anthracene	ND	ug/l	0.421
Benzo(ghi)perylene	ND	ug/l	0.421

Surrogate(s)	Recovery		QC Criteria
Chloro-Octadecane	71.0	%	40-140
o-Terphenyl	85.0	%	40-140
2-Fluorobiphenyl	101	%	40-140
2-Bromonaphthalene	103	%	40-140
0-Terphenyl-MS	81.0	%	40-140

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0812866

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Petroleum Hydrocarbons for sample(s) 01-02 (WG334675-1, WG334675-2)					
C5-C8 Aliphatics	102	93	10	25	70-130
C9-C12 Aliphatics	105	99	6	25	70-130
C9-C10 Aromatics	100	96	4	25	70-130
Benzene	98	91	8	25	70-130
Toluene	100	94	6	25	70-130
Ethylbenzene	100	95	6	25	70-130
p/m-Xylene	100	94	6	25	70-130
o-Xylene	99	95	4	25	70-130
Methyl tert butyl ether	99	91	8	25	70-130
Naphthalene	105	103	2	25	70-130
1,2,4-Trimethylbenzene	100	95	5	25	70-130
Pentane	102	91	12	25	70-130
2-Methylpentane	101	92	9	25	70-130
2,2,4-Trimethylpentane	105	97	8	25	70-130
n-Nonane	105	97	8	25	30-130
n-Decane	109	103	6	25	70-130
n-Butylcyclohexane	105	96	9	25	70-130
Surrogate(s)					
2,5-Dibromotoluene-PID	111	105	6		70-130
2,5-Dibromotoluene-FID	111	106	5		70-130
EPH with MS Targets for sample(s) 01-02 (WG334715-2, WG334715-3)					
C9-C18 Aliphatics	48	55	14	25	40-140
C19-C36 Aliphatics	77	89	14	25	40-140
C11-C22 Aromatics	84	94	11	25	40-140
Naphthalene	55	60	9	25	40-140
2-Methylnaphthalene	64	70	9	25	40-140
Acenaphthylene	62	71	14	25	40-140
Acenaphthene	66	70	6	25	40-140
Fluorene	77	84	9	25	40-140
Phenanthrene	78	84	7	25	40-140
Anthracene	83	90	8	25	40-140
Fluoranthene	101	110	9	25	40-140
Pyrene	98	106	8	25	40-140
Benzo(a)anthracene	97	107	10	25	40-140
Chrysene	79	86	8	25	40-140
Benzo(b)fluoranthene	71	77	8	25	40-140
Benzo(k)fluoranthene	69	77	11	25	40-140
Benzo(a)pyrene	65	72	10	25	40-140
Indeno(1,2,3-cd)Pyrene	79	89	12	25	40-140
Dibenzo(a,h)anthracene	74	88	17	25	40-140
Benzo(ghi)perylene	67	74	10	25	40-140
Nonane (C9)	36	41	13	25	30-140
Decane (C10)	47	54	14	25	40-140
Dodecane (C12)	60	66	10	25	40-140
Tetradecane (C14)	66	74	11	25	40-140
Hexadecane (C16)	69	78	12	25	40-140

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0812866

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
EPH with MS Targets for sample(s) 01-02 (WG334715-2, WG334715-3)					
Octadecane (C18)	71	81	13	25	40-140
Nonadecane (C19)	72	83	14	25	40-140
Eicosane (C20)	74	86	15	25	40-140
Docosane (C22)	75	87	15	25	40-140
Tetracosane (C24)	80	92	14	25	40-140
Hexacosane (C26)	78	90	14	25	40-140
Octacosane (C28)	79	91	14	25	40-140
triacontane (C30)	80	93	15	25	40-140
Hexatriacontane (C36)	84	96	13	25	40-140
Surrogate(s)					
Chloro-Octadecane	68	79	15		40-140
o-Terphenyl	101	120	17		40-140
2-Fluorobiphenyl	100	106	6		40-140
2-Bromonaphthalene	103	108	5		40-140
O-Terphenyl-MS	71	91	25		40-140
% Naphthalene Breakthrough	0	0	NC		
% 2-Methylnaphthalene Breakthrough	0	0	NC		

**ALPHA ANALYTICAL
QUALITY ASSURANCE FRACTIONATION CHECK**

Laboratory Job Number: L0812866

Parameter	% Recovery	QC Criteria
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Fractionation Check Standard Recoveries for Lot 200818205

C9-C18 Aliphatics	77	40-140
C19-C36 Aliphatics	76	40-140
C11-C22 Aromatics	86	40-140
Naphthalene	82	40-140
2-Methylnaphthalene	78	40-140
Acenaphthylene	76	40-140
Acenaphthene	80	40-140
Fluorene	79	40-140
Phenanthrene	78	40-140
Anthracene	82	40-140
Fluoranthene	84	40-140
Pyrene	84	40-140
Benzo(a)anthracene	82	40-140
Chrysene	88	40-140
Benzo(b)fluoranthene	81	40-140
Benzo(k)fluoranthene	97	40-140
Benzo(a)pyrene	78	40-140
Indeno(1,2,3-cd)Pyrene	76	40-140
Dibenzo(a,h)anthracene	83	40-140
Benzo(ghi)perylene	82	40-140
Nonane (C9)	72	30-140
Decane (C10)	77	40-140
Dodecane (C12)	80	40-140
Tetradecane (C14)	76	40-140
Hexadecane (C16)	78	40-140
Octadecane (C18)	76	40-140
Nonadecane (C19)	75	40-140
Eicosane (C20)	77	40-140
Docosane (C22)	79	40-140
Tetracosane (C24)	83	40-140
Hexacosane (C26)	78	40-140
Octacosane (C28)	77	40-140
Triacontane (C30)	76	40-140
Hexatriacontane (C36)	75	40-140
Surrogate(s)		
Chloro-Octadecane	66	40-140
o-Terphenyl	83	40-140
2-Fluorobiphenyl	75	40-140
2-Bromonaphthalene	76	40-140
% Naphthalene Breakthrough	0	40-140
% 2-Methylnaphthalene Breakthrough	0	40-140

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0812866

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Blank Analysis for sample(s) 01-02 (WG334675-3)						
Volatile Petroleum Hydrocarbons				59 VPH-04-1.1	0902 09:29 TT	
C5-C8 Aliphatics	ND	ug/l	50.0			
C9-C12 Aliphatics	ND	ug/l	50.0			
C9-C10 Aromatics	ND	ug/l	50.0			
C5-C8 Aliphatics, Adjusted	ND	ug/l	50.0			
C9-C12 Aliphatics, Adjusted	ND	ug/l	50.0			
Benzene	ND	ug/l	2.00			
Toluene	ND	ug/l	2.00			
Ethylbenzene	ND	ug/l	2.00			
p/m-Xylene	ND	ug/l	2.00			
o-Xylene	ND	ug/l	2.00			
Methyl tert butyl ether	ND	ug/l	3.00			
Naphthalene	ND	ug/l	10.0			
Surrogate(s)	Recovery		QC Criteria			
2,5-Dibromotoluene-PID	98.0	%	70-130			
2,5-Dibromotoluene-FID	100	%	70-130			
Blank Analysis for sample(s) 01-02 (WG334715-1)						
EPH with MS Targets				61 EPH-04-1	0902 13:30 0903 16:06 MF	
C9-C18 Aliphatics	ND	ug/l	100			
C19-C36 Aliphatics	ND	ug/l	100			
C11-C22 Aromatics	ND	ug/l	100			
C11-C22 Aromatics, Adjusted	ND	ug/l	100			
Naphthalene	ND	ug/l	0.400			
2-Methylnaphthalene	ND	ug/l	0.400			
Acenaphthylene	ND	ug/l	0.400			
Acenaphthene	ND	ug/l	0.400			
Fluorene	ND	ug/l	0.400			
Phenanthrene	ND	ug/l	0.400			
Anthracene	ND	ug/l	0.400			
Fluoranthene	ND	ug/l	0.400			
Pyrene	ND	ug/l	0.400			
Benzo(a)anthracene	ND	ug/l	0.400			
Chrysene	ND	ug/l	0.400			
Benzo(b)fluoranthene	ND	ug/l	0.400			
Benzo(k)fluoranthene	ND	ug/l	0.400			
Benzo(a)pyrene	ND	ug/l	0.200			
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.400			
Dibenzo(a,h)anthracene	ND	ug/l	0.400			
Benzo(ghi)perylene	ND	ug/l	0.400			
Surrogate(s)	Recovery		QC Criteria			
Chloro-Octadecane	66.0	%	40-140			
o-Terphenyl	80.0	%	40-140			
2-Fluorobiphenyl	94.0	%	40-140			
2-Bromonaphthalene	95.0	%	40-140			

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0812866

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01-02 (WG334715-1)							
EPH with MS Targets cont'd				61 EPH-04-1	0902 13:30	0903 16:06	MF
O-Terphenyl-MS	74.0	%	40-140				

**ALPHA ANALYTICAL
ADDENDUM I**

REFERENCES

59. Method for the Determination of Volatile Petroleum Hydrocarbons (VPH).
Massachusetts Department of Environmental Protection, DEA/ORS/BWSC. May 2004,
Revision 1.1.
61. Method for the Determination of Extractable Petroleum Hydrocarbons (EPH).
Massachusetts Department of Environmental Protection, DEA/ORS/BWSC. May 2004,
Revision 1.1.

GLOSSARY OF TERMS AND SYMBOLS

REF	Reference number in which test method may be found.
METHOD	Method number by which analysis was performed.
ID	Initials of the analyst.
ND	Not detected in comparison to the reported detection limit.
NI	Not Ignitable.
ug/cart	Micrograms per Cartridge.
H	The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. 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, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. 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, Inc.

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

**ALPHA ANALYTICAL
LOGIN SPECIFIC INFORMATION**

Laboratory Job Number: L0812866

Were project specific reporting limits specified? YES

Cooler Information

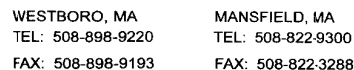
Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0812866-01A	Vial HCl preserved	A	N/A	2.5C	Y	Absent	VPH-DELUX-04
L0812866-01B	Amber 1000ml HCl preserved	A	<2	2.5C	Y	Absent	EPH-MS, EPHD-GC-04
L0812866-01C	Amber 1000ml HCl preserved	A	<2	2.5C	Y	Absent	EPH-MS, EPHD-GC-04
L0812866-02A	Vial HCl preserved	A	N/A	2.5C	Y	Absent	VPH-DELUX-04
L0812866-02B	Amber 1000ml HCl preserved	A	<2	2.5C	Y	Absent	EPH-MS, EPHD-GC-04

Container Comments

Container ID	Comments
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PAGE OF

ALPHA Job #: L0812866

Time:

Other Project Specific Requirements/Comments/Detection Limits:

Rebyd LOR12264-02,03

(w)

☒ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Filtration _____

☐ Done

☐ Not needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

Sample Specific Comments

ANALYSIS
0-HdV
0-Hd3

FORM NO: 01-01 (rev. 14-OCT-07)

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

Westborough, MA	Mansfield, MA
TEL: 508-898-9220	TEL: 508-822-9300
FAX: 508-898-8193	FAX: 508-822-3288

Client Information

Client: McPhail Associates
Address: 2269 Massachusetts Avenue
Cambridge, MA 02140
Phone: 617-868-1420

Fax: 617-868-1423

Email: cwinship@mcphailgeo.com
adonovan@mcphailgeo.com

☐ These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Project Information

Project Name: CRLS

Project Location: Cambridge, MA

Project #: 4223.9. 12

Project Manager: MZ

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: 8/25/02 Time:

Date Rec'd in Lab: 5/19/08

ALPHA Job #: L0812264

Report Information Data Deliverables Billing Information

☐ FAX ☐ EMAIL

☒ ADEx ☐ Add'l Deliverables

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program

Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☒ Yes	☐ No	Are MCP Analytical Methods Required?
☐ Yes	☒ No	Are CT RCP (Reasonable Confidence Protocols) Required?

ANALYSIS

[illegible]

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

[REDACTED]

Sample Specific
Comments

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

FORM NO: 01-01 (7)
(rev. 30-JUL-07)

Container Type

A	V
---	---

Preservative

Relinquished By:

Date/Time

Received By:

Date/Time

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

ALPHA ANALYTICAL

**Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220 www.alphalab.com**

MA:M-MA086 NH:2003 CT:PH-0574 ME:MA0086 RI:LA000065 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: McPhail Associates	Laboratory Job Number: L1002822
Address: 2269 Massachusetts Avenue	Date Received: 25-FEB-2010
Cambridge, MA 02140	Date Reported: 01-MAR-2010
Attn: Mr. Ambrose Donovan	Delivery Method: Alpha
Project Number: 4773	Site: 4773 CRLS

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L1002822-01	MAI-104 (OW)	CAMBRIDGE, MA

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

Authorized by: Michelle M. Monis
Technical Representative

**ALPHA ANALYTICAL
NARRATIVE REPORT**

Laboratory Job Number: L1002822

The samples were received in accordance with the chain of custody and no significant deviations were encountered during preparation or analysis unless otherwise noted below.

Chloride

L1002822-01 has an elevated detection limit due to the 10x dilution required to quantitate the result within the calibration range.

**ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:2003 CT:PH-0574 ME:MA0086 RI:LA000065 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L1002822-01
MAI-104 (OW)

Sample Matrix: WATER

Condition of Sample: Satisfactory

Number & Type of Containers: 2-Plastic

Date Collected: 25-FEB-2010 11:00

Date Received : 25-FEB-2010

Date Reported : 01-MAR-2010

Field Prep: None

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
General Chemistry - Westborough Lab						
Chloride	530	mg/l	10	1 9251	0226 18:33	LA
pH	7.3	SU	-	1 9040B	0225 21:00	DD
Chromium, Hexavalent	ND	mg/l	0.010	1 7196A	0225 22:40	0225 22:40 DD
Total Metals - Westborough Lab						
Antimony, Total	0.0010	mg/l	0.0005	1 6020	0226 13:40	0227 02:26 BM
Arsenic, Total	0.0007	mg/l	0.0005	1 6020	0226 13:40	0227 02:26 BM
Cadmium, Total	ND	mg/l	0.0005	1 6020	0226 13:40	0227 02:26 BM
Chromium, Total	ND	mg/l	0.0005	1 6020	0226 13:40	0227 02:26 BM
Copper, Total	0.0045	mg/l	0.0005	1 6020	0226 13:40	0227 02:26 BM
Iron, Total	ND	mg/l	0.05	19 200.7	0226 10:30	0226 16:01 MG
Mercury, Total	ND	mg/l	0.0002	3 245.1	0226 16:40	0301 10:52 EZ
Nickel, Total	0.0021	mg/l	0.0005	1 6020	0226 13:40	0227 02:26 BM
Silver, Total	ND	mg/l	0.0005	1 6020	0226 13:40	0227 02:26 BM
Zinc, Total	ND	mg/l	0.0050	1 6020	0226 13:40	0227 02:26 BM

Comments: Complete list of References and Glossary of Terms found in Addendum I

**ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS**

Laboratory Job Number: L1002822

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
General Chemistry - Westborough Lab for sample(s) 01 (L1002800-01, WG402159-4)					
Chloride	1300	1300	mg/l	0	7
General Chemistry - Westborough Lab for sample(s) 01 (L1002830-07, WG402037-2)					
pH	6.4	6.4	SU	0	5
General Chemistry - Westborough Lab for sample(s) 01 (L1002822-01, WG402036-4)					
Chromium, Hexavalent	ND	ND	mg/l	NC	20
Total Metals - Westborough Lab for sample(s) 01 (L1002822-01, WG402126-3)					
Antimony, Total	0.0010	0.0009	mg/l	19	20
Arsenic, Total	0.0007	0.0006	mg/l	8	20
Cadmium, Total	ND	ND	mg/l	NC	20
Chromium, Total	ND	ND	mg/l	NC	20
Copper, Total	0.0045	0.0045	mg/l	0	20
Nickel, Total	0.0021	0.0021	mg/l	1	20
Silver, Total	ND	ND	mg/l	NC	20
Zinc, Total	ND	ND	mg/l	NC	20
Total Metals - Westborough Lab for sample(s) 01 (L1002822-01, WG402177-3)					
Mercury, Total	ND	ND	mg/l	NC	20

**ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH SPIKE ANALYSES**

Laboratory Job Number: L1002822

Parameter	% Recovery	QC Criteria
General Chemistry - Westborough Lab LCS for sample(s) 01 (WG402159-1)		
Chloride	103	90-110
General Chemistry - Westborough Lab LCS for sample(s) 01 (WG402037-1)		
pH	100	99-101
General Chemistry - Westborough Lab LCS for sample(s) 01 (WG402036-1)		
Chromium, Hexavalent	102	85-115
Total Metals - Westborough Lab LCS for sample(s) 01 (WG402115-2)		
Iron, Total	110	85-115
Total Metals - Westborough Lab LCS for sample(s) 01 (WG402126-2)		
Antimony, Total	101	80-120
Arsenic, Total	100	80-120
Cadmium, Total	108	80-120
Chromium, Total	100	80-120
Copper, Total	105	80-120
Nickel, Total	104	80-120
Silver, Total	103	80-120
Zinc, Total	109	80-120
Total Metals - Westborough Lab LCS for sample(s) 01 (WG402177-2)		
Mercury, Total	111	85-115
General Chemistry - Westborough Lab SPIKE for sample(s) 01 (L1002800-01, WG402159-3)		
Chloride	0	58-140
General Chemistry - Westborough Lab SPIKE for sample(s) 01 (L1002822-01, WG402036-3)		
Chromium, Hexavalent	101	85-115
Total Metals - Westborough Lab SPIKE for sample(s) 01 (L1002810-01, WG402115-4)		
Iron, Total	100	75-125
Total Metals - Westborough Lab SPIKE for sample(s) 01 (L1002822-01, WG402126-4)		
Antimony, Total	105	80-120
Arsenic, Total	107	80-120
Cadmium, Total	111	80-120
Chromium, Total	99	80-120
Copper, Total	105	80-120
Nickel, Total	103	80-120
Silver, Total	106	80-120
Zinc, Total	107	80-120
Total Metals - Westborough Lab SPIKE for sample(s) 01 (L1002822-01, WG402177-4)		
Mercury, Total	118	70-130

**ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS**

Laboratory Job Number: L1002822

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Blank Analysis for sample(s) 01 (WG402159-2)						
General Chemistry - Westborough Lab						
Chloride	ND	mg/l	1.0	1 9251	0226 17:03	LA
Blank Analysis for sample(s) 01 (WG402036-2)						
General Chemistry - Westborough Lab						
Chromium, Hexavalent	ND	mg/l	0.010	1 7196A	0225 22:40	0225 22:40 DD
Blank Analysis for sample(s) 01 (WG402115-1)						
Total Metals - Westborough Lab						
Iron, Total	ND	mg/l	0.05	19 200.7	0226 10:30	0226 15:38 MG
Blank Analysis for sample(s) 01 (WG402126-1)						
Total Metals - Westborough Lab						
Antimony, Total	ND	mg/l	0.0005	1 6020	0226 13:40	0227 01:19 BM
Arsenic, Total	ND	mg/l	0.0005	1 6020	0226 13:40	0227 01:19 BM
Cadmium, Total	ND	mg/l	0.0005	1 6020	0226 13:40	0227 01:19 BM
Chromium, Total	ND	mg/l	0.0005	1 6020	0226 13:40	0227 01:19 BM
Copper, Total	ND	mg/l	0.0005	1 6020	0226 13:40	0227 01:19 BM
Nickel, Total	ND	mg/l	0.0005	1 6020	0226 13:40	0227 01:19 BM
Silver, Total	ND	mg/l	0.0005	1 6020	0226 13:40	0227 01:19 BM
Zinc, Total	ND	mg/l	0.0050	1 6020	0226 13:40	0227 01:19 BM
Blank Analysis for sample(s) 01 (WG402177-1)						
Total Metals - Westborough Lab						
Mercury, Total	ND	mg/l	0.0002	3 245.1	0226 16:40	0301 10:47 EZ

**ALPHA ANALYTICAL
ADDENDUM I**

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
3. Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
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.

GLOSSARY OF TERMS AND SYMBOLS

REF	Reference number in which test method may be found.
METHOD	Method number by which analysis was performed.
ID	Initials of the analyst.
ND	Not detected in comparison to the reported detection limit.
NI	Not Ignitable.
ug/cart	Micrograms per Cartridge.
H	The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. 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, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. 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, Inc.

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

Certificate/Approval Program Summary

Last revised January 11, 2010 - Westboro Facility

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

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

Drinking Water (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Haloacetic Acids, Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP), Ethylene Dibromide (EDB).)

Wastewater/Non-Potable Water (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Calcium Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, 2,4-D, 2,4,5-T, 2,4,5-TP (Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: Lead in Paint, pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), Reactivity. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP (Silvex), Volatile Organics, Acid Extractables (Phenols), 3,3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

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

Drinking Water (Inorganic Parameters: SM9215B, 9221E, 9222B, 9222D, 9223B, EPA 180.1, 300.0, 353.2, SM2130B, 2320B, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1. Organic Parameters: 504.1, 524.2, SM 6251B.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, Lachat 10-107-06-1-B, SM2320B, 2340B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NH3-H, 4500NO3-F, 4500P-B.5, 4500P-E, 5210B, 5220D, 5310C, EPA 200.7, 200.8, 245.1. Organic Parameters: 608, 624.)

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

Drinking Water

Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl)

(EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Fluoride, Sulfate)

353.2 for: Nitrate-N, Nitrite-N; SM4500NO3-F, 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, 2320B, SM2540C, SM4500H-B.

Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics)

(504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), 314.0, 332.

Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; MF-SM9222D

Non-Potable Water

Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn)

(EPA 200.7 for: Al,Sb,As,Be,Cd,Cr,Co,Cu,Fe,Pb,Mn,Mo,Ni,Se,Ag,Sr,Tl, V,Zn,Ca,Mg,Na,K)

245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2540B, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-B,C-Titr, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics)

(608 for: Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, PCBs-Water), EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables, 600/4-81-045-PCB-Oil

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

Drinking Water (Inorganic Parameters: SM6215B, 9222B, 9223B Colilert, EPA 200.7, 200.8, 245.2, 120.1, 300.0, 314.0, SM4500CN-E, 4500H+B, 4500NO₃-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 331.0. Organic Parameters: 504.1, 524.2, SM6251B.)

Non-Potable Water (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 200.7, 200.8, 245.1, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 351.1, 353.2, 420.1, 1664A, SW-846 9010, 9030, 9040B, SM426C, SM2310B, 2540B, 2540D, 4500H+B, 4500NH₃-H, 4500NH₃-E, 4500NO₂-B, 4500P-E, 4500-S₂-D, 5210B, 2320B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-117-07-1-B, LACHAT 10-107-06-1-B, LACHAT 10-107-04-1-C, LACHAT 10-107-04-1-J, LACHAT 10-117-07-1-A, SM4500CL-E, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D. Organic Parameters: SW-846 3005A, 3015A, 3510C, 5030B, 8021B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 7.3.3.2, 7.3.4.2, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040, 9045C, 9050C, 1311, 3005A, 3050B, 3051A. Organic Parameters: SW-846 3540C, 3545, 3580A, 5030B, 5035, 8021B, 8260B, 8270C, 8330, 8151A, 8082, 8081A.)

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

Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500NO₃-F, 4500F-C, EPA 300.0, 200.7, 2540C, 2320B, 314.0, SM2120B, 2510B, 5310C, SM4500H-B, EPA 200.8, 245.2. Organic Parameters: 504.1, SM6251B, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500Cl-D, EPA 300.0, SM2120B, SM4500F-BC, EPA 200.7, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO₃-F, 4500NO₂-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM4500P-B₅+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, SM9221CE, 9222D, 9221B, 9222B, 9215B, 2310B, 2320B, 4500NH₃-H, 4500-S D, EPA 350.1, SM5210B, SW-846 3015, 6020, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, EPA 245.1, 245.2, SW-846 9040B, 3005A, EPA 6010B, 7196A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8270C, 3510C, EPA 608, 624, 625, SW-846 5030B, 8021B, 8081A, 8082, 8151A, 8330, NJ OQA-QAM-025 Rev.7.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 9040B, 3005A, 6010B, 7196A, 5030B, 9010B, 9030B, 1030, 1311, 3050B, 3051, 7471A, 9014, 9012A, 9045C, 9050A, 9065. Organic Parameters: SW-846 8021B, 8081A, 8082, 8151A, 8330, 8260B, 8270C, 1311, 1312, 3540C, 3545, 3550B, 3580A, 5035L, 5035H, NJ OQA-QAM-025 Rev.7.)

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

Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 314.0, 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500H-B, 4500NO₃-F, 2540C, EPA 120.1, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, LACHAT 10-117-07-1A or B, SM4500Cl-E, 4500F-C, SM15 426C, EPA 350.1, LACHAT 10-107-06-1-B, SM4500NH₃-H, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, LACHAT 10-107-041-C, SM4500-NO₃-F, 4500-NO₂-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, SM3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, SM4500-CN-E LACHAT 10-204-00-1-A, EPA 9040B, SM4500-HB, EPA 1664A, SM5310C, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015. Organic Parameters: EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, EPA 3510C, 5030B, 9010B, 9030B.)

Solid & Hazardous Waste (Inorganic Parameters: 1010, 1030, SW-846 Ch 7 Sec 7.3, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 1312, 3005A, 3050B, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8081A, 8151A, 8330, 8082, 3540C, 3545, 3546, 3580, 5030B, 5035.)

North Carolina Department of the Environment and Natural Resources Certificate/Lab ID: 666. Organic Parameters: MA-EPH, MA-VPH.

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

Non-Potable Water (Organic Parameters: EPA 3510C, 5030B, 625, 624. 608, 8081A, 8082, 8151A, 8260B, 8270C, 8330)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010, 1030, 1311, 3050B, 3051, 6010B, EPA 7.3.3.2, EPA 7.3.4.2, 7196A, 7471A, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065. Organic Parameters: 3540C, 3545, 3580A, 5035, 8021B, 8081A, 8082, 8151A, 8260B, 8270C, 8330)

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

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

Refer to NY-DOH Certificate for Potable and Non-Potable Water.

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

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 376.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 S²⁻D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

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

Utah Department of Health Certificate/Lab ID: AAMA. **NELAP Accredited.**

Non-Potable Water (Inorganic Parameters: Chloride EPA 300.0)

Department of Defense Certificate/Lab ID: L2217.

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

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6020, 245.1, 245.2, 7470A, 9040B, 300.0, 9251, 9038, 350.1, 353.2, 351.1, 314, 120.1, 9050A, 410.4, 9060, 1664, 420.1, LACHAT 10-107-06-1-B, SM 4500CN-E, 4500H-B, 4500CL-E, 4500F-BC, 4500SO4-E, 426C, 4500NH3-B, 4500NH3-H, 4500NO3-F, 4500NO2-B, 4500Norg-C, 4500PE, 2510B, 5540C, 5220D, 5310C, 2540B, 2540C, 2540D, 510C, 4500S2-AD, 3005A, 3015, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8330, 625, 8082, 8151A, 8081A, 3510C, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010B, 7471A, 9040B, 9045C, 9065, 420.1, 9012A, 6860, 1311, 1312, 3050B, 9030B, 3051, 9010B, 3540C, SM 510ABC, 4500CN-CE, 2540G, SW-846 7.3, Organic Parameters: EPA 8260B, 8270C, 8330, 8082, 8081A, 8151A, 3545, 3546, 3580, 5035.)

Analytes Not Accredited by NELAP

Certification is not available by NELAP for the following analytes: **EPA 8260B:** Freon-113, 1,2,4,5-Tetramethylbenzene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methyl naphthalenes, Total Dimethyl naphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline. **EPA 350.1** for Ammonia in a Soil matrix.



CHAIN OF CUSTODY

PAGE 1 OF 1

WESTBORO, MA
TEL: 508-898-9220
FAX: 508-898-9193

MANSFIELD, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: McPhail Assoc.
Address: 2269 Massachusetts Ave
Cambridge, MA 02142
Phone: 617 868 1420
Fax: x 1423
Email:
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: 4773 Cambridge Ridge Hall
Project Location: Cambridge, MA School
Project #: 4773
Project Manager: Bill Burns
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved!)
Date Due: 3/1/10 Time:

Date Rec'd in Lab: 2/25/10

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

ALPHA Job #: U1002822

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program Criteria

EPA NPOES Standard

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

☐ Yes ☒ No Are MCP Analytical Methods Required?
☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

ANALYSIS
Total Metals
PH
Chloride
(Antimony, Chromium, Manganese, VI, Iron, Mercury, Arsenic, Cadmium, Copper, Nickel, Silver, Zinc) Total

SAMPLE HANDLING

Filtration _____
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials											
		Date	Time													
02822.1	MA1-104 (ow)	2/25	11 ⁰⁰	GW	ALD	X	X	X	X	X	X	X	X	X	X	2

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT
MA MCP or CT RCP?

Container Type

Preservative

P P P P P P P P
C A A C C C C C

Relinquished By:

Date/Time

Received By:

Date/Time

Alison Dadone 2/25/10 12:00 [Signature] 2/25/10 16:25
[Signature] 2/25/10 17:25 [Signature] 2/25/10 17:35

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



Geotechnical Engineers

ATTACHMENT C

ASSESSMENT OF DEP-LISTED SITES

The DEP on-line waste site database indicates that there are six (6) DEP listed sites within close proximity of the subject site. In addition, the DEP database indicates that the subject site is a listed disposal site. With the exception of one site, the releases of OHM which triggered notification to the DEP have achieved a Class A-2 Response Action Outcome (RAO) statement. A Class A-2 RAO indicates that response actions were performed at the site which resulted in a Permanent Solution to the release and achieved a Condition of No Significant Risk at the site. In addition, the DEP on-line database reports the remaining off-site release site, located at 80-88 Trowbridge Street, approximately 225 feet to the northeast of the subject site to have received a Class A-3 RAO Statement. A Class A-3 RAO indicates that a Permanent Solution was achieved for the release and a Condition of No Significant Risk exists at the site under the implementation of an Activity and Use Limitation. Based on the DEP status, the off-site disposal sites are not considered to pose a threat of impact to the groundwater dewatering activities at the subject site. However, given that the subject site is listed in the DEP database, the on-site disposal site was assessed for its potential to affect groundwater dewatering activities at the subject site.

The Massachusetts DEP database indicates that the subject site is a DEP-listed site with the assigned release tracking number (RTN) of 3-22883. According to the Response Action Outcome Statement report dated September 29, 2003 and prepared by Clean Harbors Environmental Services, Inc., in May of 2003, a release of oil occurred in the boiler room on the second floor of the Cambridge Rindge and Latin School. Reportedly, as a result of a ruptured fuel line, approximately 750 to 1,000 gallons of No. 4 fuel oil was released to the boiler room and a vault within an adjacent storage room. The RAO report indicates that prior to securing the floor drains in the boiler room, oil entered the drains which were connected to the MWRA sewer system.

According to Clean Harbors, response actions at the release site included the removal and disposal of approximately 446-gallons of oil/water by a vactor truck in addition to the removal of 25 cubic yards of oil absorbent materials and oily debris from the boiler and storage rooms. Clean Harbors reports that an inspection of sewer manholes on the School property did not indicate the presence of a sheen. Based on the results of subsequent indoor air testing, Clean Harbors filed a Class A-2 RAO for the release indicating that a Permanent Solution was achieved and a Condition of No Significant Risk exists at the site.

As indicated in **Attachment B**, in 2008 McPhail Associates tested samples of groundwater from observation wells located adjacent to the north of the release site for the presence of petroleum constituents. The results of this analysis indicated that groundwater had not been impacted by petroleum constituents at concentrations above the RGP effluent limits for discharge into a freshwater surface body. Based on the results of the 2008 analysis in conjunction with the DEP status of the disposal site, the on-site release listed with RTN 3-22883 is not considered to affect groundwater dewatering activities at the site.



Geotechnical Engineers

ATTACHMENT D

AREAS OF CRITICAL CONCERN, ENDANGERED AND THREATENED SPECIES

Based on a review of the DEP Priority Resources Map, the site is not located within a Zone II of a public water supply, an Interim Wellhead Protection Area, or a Zone A of a Class A surface water supply reservoir. The site is not located within a Non-Potential Drinking Water Source Area of medium yield. There are no surface water bodies located within the site boundaries. The site is not located within an Area of Critical Environmental Concern (ACEC) nor are ACECs located within 1-mile of the subject site. In addition, the point of discharge in the Charles River is not an ACEC.

A review of the most recent federal listing of threatened and endangered species published by the U.S. Fish and Wildlife Service did not identify the presence of threatened and/or endangered species at or in the vicinity of the discharge location and/or discharge outfall. In addition, a review of the Massachusetts Division of Fisheries and Wildlife on-line database did not report the presence of threatened or endangered species at the point of discharge and/or the discharge outfall.



Species Reports

Environmental Conservation Online System

(<http://www.fws.gov>)

Species listed in Massachusetts based on published population data

Notes:

- This report shows the species listed in this state according to the Federal Register listing description.
- This list does not include experimental populations and similarity of appearance listings.
- This list includes species or populations under the sole jurisdiction of the National Marine Fisheries Service.
- Click on the highlighted scientific names below to view a Species Profile for each listing.

Listed species (based on published population data) -- 27 listings

Animals -- 22 listings

Status (javascript:launch ('/tess_public/html/db-status.html'))	Species/Listing Name
E	Beetle, American burying (<i>Nicrophorus americanus</i> (/speciesProfile/profile/speciesProfile.action?scode=I028))
T	Plover, piping except Great Lakes watershed (<i>Charadrius melodus</i> (/speciesProfile/profile/speciesProfile.action?scode=B079))
E	Plymouth Red-Bellied Turtle (<i>Pseudemys rubriventris bangsi</i> (/speciesProfile/profile/speciesProfile.action?scode=C021))
T	Sea turtle, green except where endangered (<i>Chelonia mydas</i> (/speciesProfile/profile/speciesProfile.action?scode=C00S))
E	Sea turtle, hawksbill (<i>Eretmochelys imbricata</i> (/speciesProfile/profile/speciesProfile.action?scode=C00E))
E	Sea turtle, Kemp's ridley (<i>Lepidochelys kempii</i> (/speciesProfile/profile/speciesProfile.action?scode=C00O))
E	Sea turtle, leatherback (<i>Dermochelys coriacea</i> (/speciesProfile/profile/speciesProfile.action?scode=C00F))
T	Sea turtle, loggerhead (<i>Caretta caretta</i> (/speciesProfile/profile/speciesProfile.action?scode=C00U))
E	Sturgeon, shortnose (<i>Acipenser brevirostrum</i> (/speciesProfile/profile/speciesProfile.action?scode=E00B))
E	Tern, roseate northeast U.S. nesting pop. (<i>Sterna dougallii dougallii</i> (/speciesProfile/profile/speciesProfile.action?scode=B07O))
T	Tiger beetle, northeastern beach (<i>Cicindela dorsalis dorsalis</i> (/speciesProfile/profile/speciesProfile.action?scode=I02C))
T	Turtle, bog (=Muhlenberg) northern (<i>Clemmys muhlenbergii</i> (/speciesProfile/profile/speciesProfile.action?scode=C048))

Status (javascript:launch ('/tess_public/html/db-status.html'))	Species/Listing Name
E	Wedgemussel, dwarf (<i>Alasmidonta heterodon</i> (/speciesProfile/profile/speciesProfile.action?scode=F029))
E	Whale, blue (<i>Balaenoptera musculus</i> (/speciesProfile/profile/speciesProfile.action?scode=A02M))
E	Whale, finback (<i>Balaenoptera physalus</i> (/speciesProfile/profile/speciesProfile.action?scode=A02O))
E	Whale, humpback (<i>Megaptera novaeangliae</i> (/speciesProfile/profile/speciesProfile.action?scode=A02Q))
E	Whale, right (<i>Balaena glacialis (incl. australis)</i> (/speciesProfile/profile/speciesProfile.action?scode=A02R))
E	Whale, Sei (<i>Balaenoptera borealis</i> (/speciesProfile/profile/speciesProfile.action?scode=A02S))

Plants -- 5 listings

Status (javascript:launch ('/tess_public/html/db-status.html'))	Species/Listing Name
E	Bulrush, Northeastern (<i>Scirpus ancistrochaetus</i> (/speciesProfile/profile/speciesProfile.action?scode=Q21H))
E	Gerardia, sandplain (<i>Agalinis acuta</i> (/speciesProfile/profile/speciesProfile.action?scode=Q24K))
T	Pogonia, small whorled (<i>Isotria medeoloides</i> (/speciesProfile/profile/speciesProfile.action?scode=Q1XL))

Last updated: February 24, 2010

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Species Reports

Environmental Conservation Online System

(<http://www.fws.gov>)

Listings and occurrences for Massachusetts

Notes:

- This report shows the listed species associated in some way with this state.
- This list does not include experimental populations and similarity of appearance listings.
- This list includes non-nesting sea turtles and whales in State/Territory coastal waters.
- This list includes species or populations under the sole jurisdiction of the National Marine Fisheries Service.
- Click on the highlighted scientific names below to view a Species Profile for each listing.

Summary of species listings and occurrences for Massachusetts

- 27 listings in Massachusetts
- 20 occurring in Massachusetts
- 7 not occurring in Massachusetts
- 1 species listed in some other state occurring in Massachusetts

Summary of Animals listings

- 22 listings in Massachusetts
- 17 occurring in Massachusetts
- 5 not occurring in Massachusetts
- 1 species listed in some other state occurring in Massachusetts

Animal species listed in this state and that occur in this state

Status (javascript:launch ('/tess_public/html/db-status.html'))	Species
E	Beetle, American burying (<i>Nicrophorus americanus</i> (/speciesProfile/profile/speciesProfile.action?scode=I028))
T	Plover, piping except Great Lakes watershed (<i>Charadrius melodus</i> (/speciesProfile/profile/speciesProfile.action?scode=B079))
E	Plymouth Red-Bellied Turtle (<i>Pseudemys rubriventris bangsi</i> (/speciesProfile/profile/speciesProfile.action?scode=C021))
E	Sea turtle, hawksbill (<i>Eretmochelys imbricata</i> (/speciesProfile/profile/speciesProfile.action?scode=C00E))
E	Sea turtle, Kemp's ridley (<i>Lepidochelys kempii</i> (/speciesProfile/profile/speciesProfile.action?scode=C00O))
E	Sea turtle, leatherback (<i>Dermochelys coriacea</i> (/speciesProfile/profile/speciesProfile.action?scode=C00F))
T	Sea turtle, loggerhead (<i>Caretta caretta</i>)

Status (javascript:launch ('/tess_public/html/db-status.html'))	Species
E	Sturgeon, shortnose (<i><u>Acipenser brevirostrum</u></i> (/speciesProfile/profile/speciesProfile.action?scode=E00B))
E	Tern, roseate northeast U.S. nesting pop. (<i><u>Sterna dougallii dougallii</u></i> (/speciesProfile/profile/speciesProfile.action?scode=B07O))
T	Tiger beetle, northeastern beach (<i><u>Cicindela dorsalis dorsalis</u></i> (/speciesProfile/profile/speciesProfile.action?scode=I02C))
T	Turtle, bog (=Muhlenberg) northern (<i><u>Clemmys muhlenbergii</u></i> (/speciesProfile/profile/speciesProfile.action?scode=C048))
E	Wedgemussel, dwarf (<i><u>Alasmidonta heterodon</u></i> (/speciesProfile/profile/speciesProfile.action?scode=F029))
E	Whale, blue (<i><u>Balaenoptera musculus</u></i> (/speciesProfile/profile/speciesProfile.action?scode=A02M))
E	Whale, finback (<i><u>Balaenoptera physalus</u></i> (/speciesProfile/profile/speciesProfile.action?scode=A02O))
E	Whale, humpback (<i><u>Megaptera novaeangliae</u></i> (/speciesProfile/profile/speciesProfile.action?scode=A02Q))
E	Whale, right (<i><u>Balaena glacialis (incl. australis)</u></i> (/speciesProfile/profile/speciesProfile.action?scode=A02R))
E	Whale, Sei (<i><u>Balaenoptera borealis</u></i> (/speciesProfile/profile/speciesProfile.action?scode=A02S))

Animal species listed in this state that do not occur in this state

Status (javascript:launch ('/tess_public/html/db-status.html'))	Species
E	Butterfly, Karner blue (<i><u>Lycaeides melissa samuelis</u></i> (/speciesProfile/profile/speciesProfile.action?scode=I00F))
E	Curlew, Eskimo (<i><u>Numenius borealis</u></i> (/speciesProfile/profile/speciesProfile.action?scode=B01A))
E	Puma (=cougar), eastern (<i><u>Puma (=Felis) concolor cougar</u></i> (/speciesProfile/profile/speciesProfile.action?scode=A046))
T	Tiger beetle, Puritan (<i><u>Cicindela puritana</u></i> (/speciesProfile/profile/speciesProfile.action?scode=I02D))
E	Wolf, gray Lower 48 States, except where delisted and where EXPN. Mexico. (<i><u>Canis lupus</u></i> (/speciesProfile/profile/speciesProfile.action?scode=A00D))

Animal listed species occurring in this state that are not listed in this state

Status (javascript:launch ('/tess_public/html/db-status.html'))	Species
T	Sea turtle, green except where endangered (<i><u>Chelonia mydas</u></i> (/speciesProfile/profile/speciesProfile.action?scode=C00S))

Summary of Plant listings

- 2 not occurring in Massachusetts
- 0 species listed in some other state occurring in Massachusetts

Plant species listed in this state and that occur in this state

Status (javascript:launch ('/tess_public/html/db-status.html'))	Species
E	Bulrush, Northeastern (Scirpus ancistrochaetus (/speciesProfile/profile/speciesProfile.action?sPCODE=Q21H))
E	Gerardia, sandplain (Agalinis acuta (/speciesProfile/profile/speciesProfile.action?sPCODE=Q24K))
T	Pogonia, small whorled (Isotria medeoloides (/speciesProfile/profile/speciesProfile.action?sPCODE=Q1XL))

Plant species listed in this state that do not occur in this state

Status (javascript:launch ('/tess_public/html/db-status.html'))	Species
T	Amaranth, seabeach (Amaranthus pumilus (/speciesProfile/profile/speciesProfile.action?sPCODE=Q2MZ))
E	Chaffseed, American (Schwalbea americana (/speciesProfile/profile/speciesProfile.action?sPCODE=Q2I4))

Last updated: February 24, 2010[ECOS Home \(/ecos_public/\)](#) | [Contact Us \(/ecos/helpdesk.do?version=TESS_PUBLIC-1_0_86\)](#)



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ATTACHMENT E

NATIONAL REGISTER OF HISTORIC PLACES

The National Register of Historic Places on-line database was reviewed for listings located within the immediate vicinity of the Site in Cambridge, Massachusetts. The National Register of Historic Places indicates that the Cambridge Public Library, located approximately 200 feet to the south of the dewatering activities, is a listed National Historic Place. The dewatering of groundwater at the site will be temporary and intermittent. In addition, the discharge of effluent will be to a storm water catch basin located along Cambridge Street approximately 300 feet to the north of the Cambridge Public Library. Therefore, based on the duration and location of discharge, dewatering activities are not considered to affect the Cambridge Public Library. Hence, the site meets the Permit Eligibility Criteria 1 under the Dewatering General Permit.