LIGHTSHIP
ENGINEERING
ENVIRONMENTAL & LAND-USE CONSULTANTS

LSP SERVICES • CIVIL ENGINEERING • ASSESSMENT • PERMITTING • REMEDIATION • CONSTRUCTION MANAGEMENT

November 9, 2009

Olga Vergara
EPA New England
1 Congress Street, Suite 1100
Boston, Massachusetts 02114

RE: National Pollutant Discharge Elimination System Dewatering General Permit
Mirant Kendall Power Generation Station
265 First Street
Cambridge, Massachusetts
Lightship Eng. Project No. 504.2.18

Dear Ms. Vergara:

On behalf of the Mirant Kendall, LLC, Lightship Engineering, LLC ("Lightship Engineering") is submitting the attached Notice of Intent ("NOI") for coverage under the National Pollutant Discharge Elimination System ("NPDES") Dewatering General Permit ("DGP") during temporary construction-related dewatering at the Mirant Kendall Power Generation Station located in Cambridge, Massachusetts (the "Site"). The proposed construction project will require temporary dewatering of an excavation in a limited portion of the Site during construction activities. The construction activities will be conducted in an area that is less than one acre.

Please find the following attached information in connection with the DGP for the Site:

- Notice of Intent Submittal Form;
- Transmittal Form for Permit Application and Payment – X230661
- Attachment A – Figures
  - Figure 1 – Site Locus Map
  - Figure 2 – Site Map
  - Figure 3 – Description of Treatment System
- Attachment B – Laboratory Analytical Data Package;
- Attachment C – Areas of Critical Environmental Concern Documentation;
- Attachment D – Remediation Activities in Vicinity of Site;
- Attachment E – Endangered and Threatened Species Documentation; and
- Attachment F – National Register of Historic Places Documentation.

A pump will be used to transfer groundwater from the excavation area at the location indicated on Figure 2, Attachment A, through a 10,000-gallon fractionation tank and two bag filters (10 to 50 micron) in parallel prior to discharge to an on-Site stormwater catchbasin. The groundwater treatment system will be designed to treat and discharge groundwater at a maximum flow rate of 100 gallons per minute ("gpm") and an average flow rate of 50 gpm.

The treated groundwater will be discharged to a catchbasin on-Site, as indicated on Figure 2, Attachment A. The catchbasin ultimately discharges to the Broad Canal and thereby the Charles River. A schematic of the treatment system is provided as Figure 3, Attachment A.

The treated water will be sampled consistent with the DGP requirements from in-line influent and effluent sample ports. The samples will be submitted to a Commonwealth of Massachusetts certified analytical laboratory on a 48-hour to 72-hour turnaround time. The treatment system is expected to be operated for a period of two to four weeks.

Your assistance in processing this NOI is greatly appreciated. If you have any questions, please call Brian LaPierre or Timothy Condon at (508) 830-3344, extensions 150 and 120 respectively.

Very truly yours,
Lightship Engineering, LLC

Brian LaPierre, P.E.
Project Manager

Timothy Condon, P.E., LSP
Principal

Attachments

cc: Department of Environmental Protection, Division of Watershed Management
Mr. John Mesheau, Mirant Kendall, LLC

NOTICE OF INTENT SUBMITTAL FORM

II. Suggested Notice of Intent (NOI) Form

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

a) Name of facility: Mirant Kendall Power Generation Station	**Mailing Address for the Facility:** 265 First Street Cambridge, MA 02142	
b) Location Address of the Facility (if different from mailing address):	**Facility Location** **longitude:** -71° 4' 46.15" **latitude:** 42° 21' 52.17"	**Type of Business:** Steam Electric Generating Facility **Facility SIC codes:** 4911

c) Name of facility owner: Mirant Kendall, LLC **Owner's email:** john.mesheau@mirant.com

Owner's Tel #: 1-617-679-4818 **Owner's Fax #:**

Address of owner (if different from facility address)

Owner is (check one): 1. Federal____ 2. State _____ 3.Tribal_____ 4. Private ✓ 4. Other _____(Describe)

Legal name of Operator, if not owner: Lightship Engineering, LLC

Operator Contact Name: Brian LaPierre, P.E.

Operator Tel Number: (508) 830-3344 **Fax Number:** (508) 830-3360

Operator's email: blapierre@lightshipengineering.com

Operator Address (if different from owner)

39 Industrial Park Road, Unit C, Plymouth, MA 02360

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** MA0004898
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:** Broad Canal / 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.** #1 - See Cover Letter for details
2. **Short-term or long-term dewatering of foundation sumps.**
3. **Other.**

c) **Number of outfalls** 1

For each outfall:

d) **Estimate the maximum daily and average monthly flow of the discharge (in gallons per day – GPD). Max Daily Flow** 144,000 **GPD**
Average Monthly Flow 72,000 **GPD**

e) **What is the maximum and minimum monthly pH of the discharge (in s.u.)? Max pH** 8.5 **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.** Groundwater - see Attachment B for laboratory analytical results

g) **What treatment does the wastewater receive prior to discharge?** Dewatering frac tank for settlement and filtration with bag filters

h) **Is the discharge continuous? Yes** ✓ **No** _____ **If no, is the discharge periodic (P) (occurs regularly, i.e., monthly or seasonally, but is not continuous all year) or intermittent (I) (occurs sometimes but not regularly) or both (B)** _____
If (P), number of days or months per year of the discharge _____ **and the specific months of discharge** _____;
If (I), number of days/year there is a discharge _____
Is the discharge temporary? Yes ✓ **No** _____
If yes, approximate start date of dewatering November 2009 **approximate end date of dewatering** January 2010

i) **Latitude and longitude of each discharge within 100 feet (See http://www.epa.gov/tri/report/siting_tool): Outfall 1: long.** -71° 4' 48.50" **lat.** 42° 21' 45.44"; **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** Not Applicable **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 ✓** See Attachment C
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 LC_{50} in percent for aquatic organism(s)).** Not Applicable

b) **Please report any known remediation activities or water-quality issues in the vicinity of the discharge.** See Attachment D

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✓** See Attachment E
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?** N/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 ✓** See Attachment F
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 o3) have you met?** N/A

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: Mirant Kendall, LLC

Operator signature: Timothy Gahlen

Title: President, Lighthip Engineering

Date: 11/9/09

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 → X230661 (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

BRP WM 10 — 1. Permit Code: 7 or 8 character code from permit instructions
NPDES — 2. Name of Permit Category
Construction Site Dewatering — 3. Type of Project or Activity

B. Applicant Information – Firm or Individual

Mirant Kendall, LLC — 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

265 First Street — 5. Street Address

6. City/Town	7. State	8. Zip Code	9. Telephone #	10. Ext. #
Cambridge	MA	02142	(617) 679-4818	

John Mesheau — 11. Contact Person
John.Mesheau@Mirant.com — 12. e-mail address (optional)

C. Facility, Site or Individual Requiring Approval

Mirant Kendall Power Generation Station — 1. Name of Facility, Site Or Individual
265 First Street — 2. Street Address

3. City/Town	4. State	5. Zip Code	6. Telephone #	7. Ext. #
Cambridge	MA	02142	(617) 679-4818	

8. DEP Facility Number (if Known)	9. Federal I.D. Number (if Known)	10. BWSC Tracking # (if Known)
	MA0004898	

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

Lightship Engineering, LLC — 1. Name of Firm Or Individual
39 Industrial Park Road - Unit C — 2. Address

3. City/Town	4. State	5. Zip Code	6. Telephone #	7. Ext. #
Plymouth	MA	02360	(508) 830-3344	150

Brian LaPierre — 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 EOEA 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).

Check Number	Dollar Amount	Date
10578	$385.00	11/9/2009

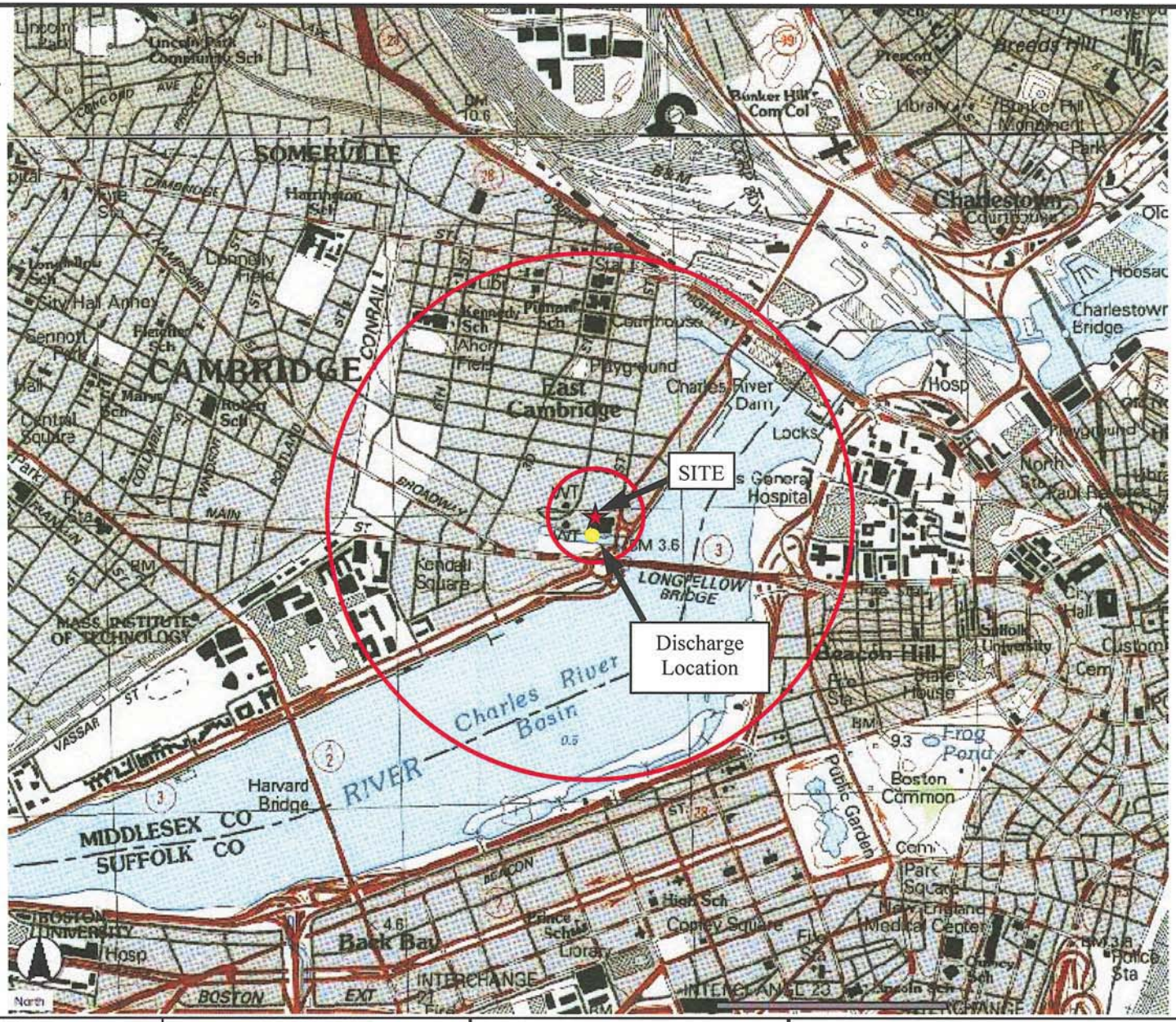
Attachment A

Figures

Figure 1	Site Locus Map
Figure 2	Site Map
Figure 3	Description of Treatment System

RADII: 500 feet and 1/2-mile

SCALE: Approx. 1" = 1600 feet

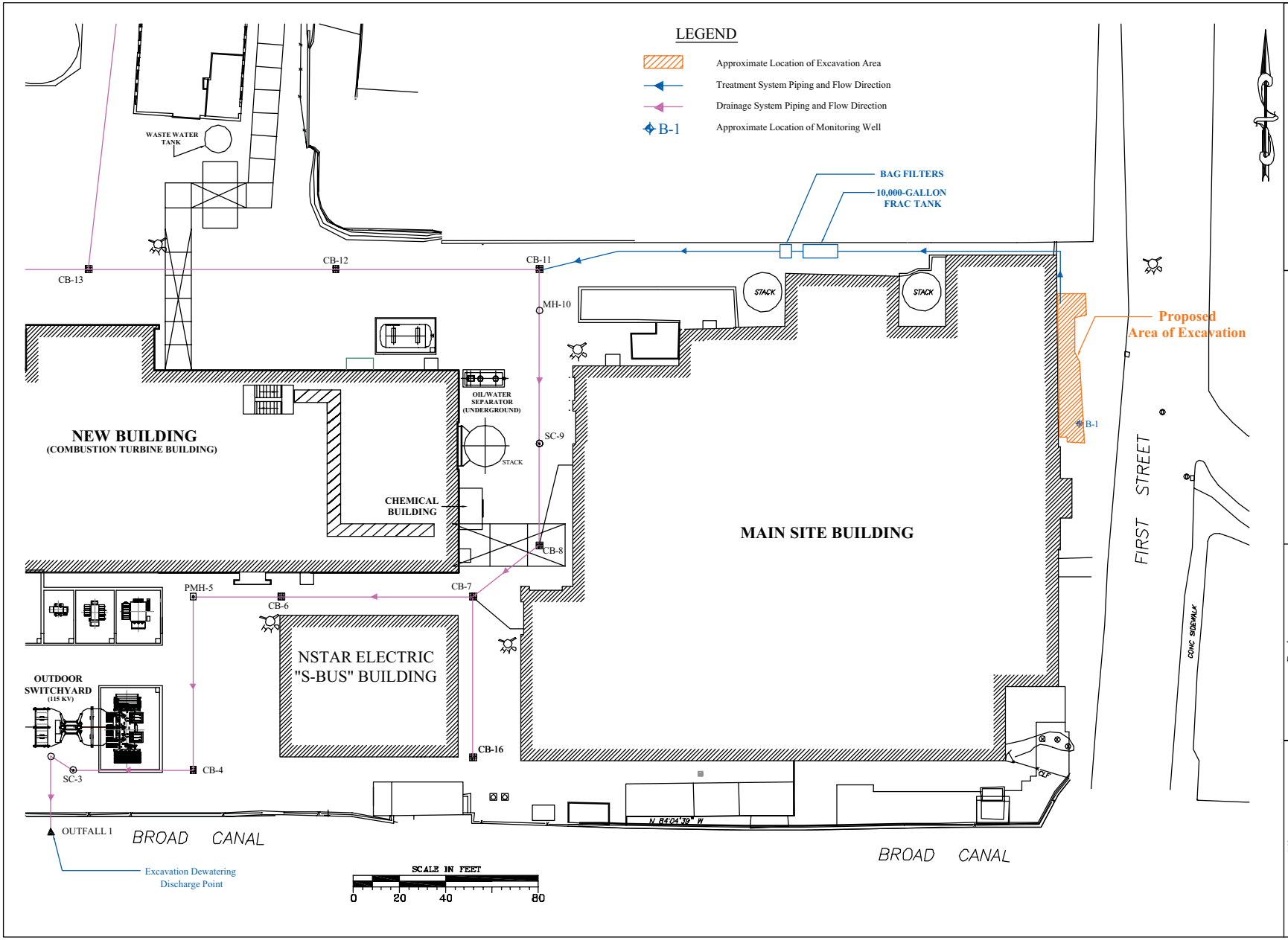


CLIENT	PROJECT
Mirant Kendall, LLC 265 First Street Cambridge, Massachusetts	MWRA Project 265 First Street Cambridge, Massachusetts

Source: MassGIS Online Viewer

FIGURE 1
Site Locus Map

LIGHTSHIP ENGINEERING
ENVIRONMENTAL & LAND-USE CONSULTANTS
39 Industrial Park Road • Unit C • Plymouth, Massachusetts 02360 • (508) 830-3344 • Fax: (508) 830-3360



LIGHTSHIP ENGINEERING
ENVIRONMENTAL & LAND-USE CONSULTANTS
31 Industrial Park Road, Plymouth, Massachusetts 02360
Phone: (508) 830-3366 Fax: (508) 830-3300

504.2.18

Date: 11/2/2009 | Drawn by: KDP | Scale: 1" = 40'

Sheet No. 1 of 1

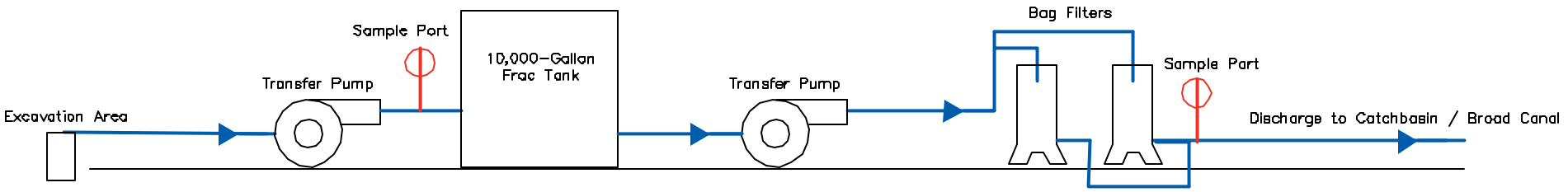
FIGURE 2
Site Map

Project
MWRA Project
265 First Street
Cambridge, Massachusetts

Client
Mirant Kendall, LLC
265 First Street
Cambridge, Massachusetts

Source: Base Site Plan Provided by Mirant, dated 3/04.
SEA Consultants Plan, dated 9/16/09

P:\Projects\504 - Mirant \504.0\504.2.18 - SEA Consultant Cont Project \NPDES RGP \Revised Site Map.dwg



SOURCE	REVISIONS			PROJECT	DRAWING TITLE	AutoCAD DRAWING INFORMATION			
Lightship Engineering	NO.	DATE	DESCRIPTION	MWRA Project 265 First Street Cambridge, Massachusetts	Figure 3 Description of Treatment System	DRAWN BY:	BRL	DATE:	11/4/09
	1	11/09	Groundwater Treatment System			REVIEW:	TC	DWG SCALE	NONE
						P:\Projects\504 \504.2.18\NPDES RBP			
				APPLICANT					
LIGHTSHIP REF. NUMBER				Mirant Kendall, LLC 265 First Street Cambridge, Massachusetts					
504.2.18									
SHEET NO: 1 OF 1									

LIGHTSHIP ENGINEERING

ENVIRONMENTAL & LAND-USE CONSULTANTS

39 Industrial Park Road Unit C Plymouth, Massachusetts 02360 TEL:(508) 830-3344 FAX:(508) 830-3360

Attachment B

Laboratory Analytical Data Package

Sample – B-1 – October 26, 2009

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532

Telephone (508) 759-4441
FAX (508) 759-4475
www.groundwateranalytical.com

November 2, 2009

Ms. Amy Roth
Lightship Engineering
39 Industrial Park Road
Unit C
Plymouth, MA 02360

LABORATORY REPORT

Project: **Kendall/504.2.18**
Lab ID: **129014**
Received: **10-26-09**

Dear Amy:

Enclosed are the analytical results for the above referenced project. The project was processed for Priority turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC or NVLAP standards, except as may be specifically noted, or described in the project narrative. The analytical results relate only to the samples received. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Eric H. Jensen
Operations Manager

EHJ/elm
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project: **Kendall/504.2.18**
Client: **Lightship Engineering**
Lab ID: **129014**

Delivery: **Hand**
Airbill: **n/a**
Lab Receipt: **10-26-09**

Temperature: **5.7ºC**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
129014-1	B-1		Aqueous	10/26/09 10:35	EPA 8260B Volatile Organics with Oxygenates				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1118283	0 mL VOA VIAL w/HC	ICHEM	BX31798	HCL	n/a	n/a	n/a		
C1142763	0 mL VOA VIAL w/HC	ICHEM	BX31805	HCL	n/a	n/a	n/a		
C1142761	0 mL VOA VIAL w/HC	ICHEM	BX31805	HCL	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
129014-2	B-1		Aqueous	10/26/09 10:35	EPA 8270C Semivolatile Organics (Low Level)				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1242549	1 L Amber Glass	Proline	BX34726	None	n/a	n/a	n/a		
C1242544	1 L Amber Glass	Proline	BX34726	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
129014-3	B-1		Aqueous	10/26/09 10:35	EPA 8082 PCBs				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1242550	1 L Amber Glass	Proline	BX34726	None	n/a	n/a	n/a		
C1242548	1 L Amber Glass	Proline	BX34726	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
129014-4	B-1		Aqueous	10/26/09 10:35	EPA 200.7 Fe Total				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1156601	250 mL Plastic	Proline	BX34564	HNO3	R-5913A	09-09-09	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
129014-5	B-1		Aqueous	10/26/09 10:35	EPA 6010B/7470A 13 PP Metals				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1185539	500 mL Plastic	Proline	BX33920	HNO3	R-5913A	09-25-09	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
129014-6	B-1		Aqueous	10/26/09 10:35	TPH by GC EPA 8015B Mod				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1242515	1 L Amber Glass	Proline	BX34730	H2SO4	R-5914C	10-15-09	n/a		
C1242514	1 L Amber Glass	Proline	BX34730	H2SO4	R-5914C	10-15-09	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
129014-7	B-1		Aqueous	10/26/09 10:35	SM 2540 D Total Suspended Solids				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1220714	1 L Plastic	Proline	BX34902	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
129014-8	B-1		Aqueous	10/26/09 10:35	EPA 9012A Total Cyanide				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1252490	500 mL Plastic	Proline	BX34876	NaOH	R-5945B	10-08-09	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
129014-9	B-1		Aqueous	10/26/09 10:35	SM 4500-Cl G Total Residual Chlorine				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1167042	250 mL Glass	Proline	BX33600	None	n/a	n/a	n/a		

GROUNDWATER ANALYTICAL

Data Certification

Project: **Kendall/504.2.18** Lab ID: **129014**
Client: **Lightship Engineering** Received: **10-26-09 15:19**

MA DEP Compendium of Analytical Methods						
Project Location:	**n/a**			MA DEP RTN:	**n/a**	

This Form provides certifications for the following data set:

EPA 6010B: 129014-5
EPA 7470A: 129014-5
EPA 8260B: 129014-1
EPA 8270C: 129014-2
EPA 8082: 129014-3
EPA 9012A: 129014-8

Sample Matrices:	Groundwater (X)	Soil/Sediment ( )	Drinking Water ( )	Other ( )	
MCP SW-846 Methods Used	8260B (X)	8151A ( )	8330 ( )	6010B (X)	7470A/1A (X)
	8270C (X)	8081A ( )	VPH ( )	6020A ( )	9012A[2] (X)
As specified in MA DEP Compendium of Analytical Methods. (check all that apply)	8082 (X)	8021B ( )	EPH ( )	7000 S[3] ( )	Other ( )
	1. List Release Tracking Number (RTN), if known.				
	2. SW-846 Method 9012A (Equivalent to 9014) or MA DEP Physiologically Available Cyanide (PAC) Method				
	3. S - SW-846 Methods 7000 Series. List individual method and analyte.				

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

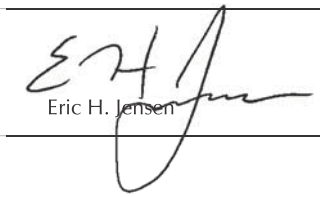
A.	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	Yes
B.	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and 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 MA DEP 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?	n/a

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

E.	Were all QC performance standards and recommendations for the specified methods achieved?	Yes
F.	Were results for all analyte-list compounds/elements for the specified method(s) reported?	No

All No answers are addressed in the attached Project 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 analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: 
Position: Operations Manager
Printed Name: Eric H. Jensen
Date: 11-02-09

GROUNDWATER ANALYTICAL

EPA Method 8260B
Volatile Organics by GC/MS

Field ID:	**B-1**	Matrix:	**Aqueous**
Project:	**Kendall/504.2.18**	Container:	**40 mL VOA VIAL w/HCL**
Client:	**Lightship Engineering**	Preservation:	**HCl/ Cool**
Laboratory ID:	**129014-1**	QC Batch ID:	**VM5-4060-W**
Sampled:	**10-26-09 10:35**	Instrument ID:	**MS-5 HP 6890**
Received:	**10-26-09 15:19**	Sample Volume:	**25 mL**
Analyzed:	**10-28-09 17:22**	Dilution Factor:	**1**
Analyst:	**LMG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	0.5
74-87-3	Chloromethane	BRL		ug/L	0.5
75-01-4	Vinyl Chloride	BRL		ug/L	0.5
74-83-9	Bromomethane	BRL		ug/L	0.5
75-00-3	Chloroethane	BRL		ug/L	0.5
75-69-4	Trichlorofluoromethane	BRL		ug/L	0.5
60-29-7	Diethyl Ether	BRL		ug/L	2
75-35-4	1,1-Dichloroethene	BRL		ug/L	0.5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	5
67-64-1	Acetone	BRL		ug/L	10
75-15-0	Carbon Disulfide	BRL		ug/L	5
75-09-2	Methylene Chloride	BRL		ug/L	3
107-13-1	Acrylonitrile	BRL		ug/L	0.5
156-60-5	*trans*-1,2-Dichloroethene	BRL		ug/L	0.5
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	BRL		ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL		ug/L	0.5
594-20-7	2,2-Dichloropropane	BRL		ug/L	0.5
156-59-2	*cis*-1,2-Dichloroethene	BRL		ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL		ug/L	5
74-97-5	Bromochloromethane	BRL		ug/L	0.5
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	5
67-66-3	Chloroform	BRL		ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL		ug/L	0.5
563-58-6	1,1-Dichloropropene	BRL		ug/L	0.5
71-43-2	Benzene	BRL		ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL		ug/L	0.5
79-01-6	Trichloroethene	BRL		ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL		ug/L	0.5
74-95-3	Dibromomethane	BRL		ug/L	0.5
75-27-4	Bromodichloromethane	BRL		ug/L	0.5
123-91-1	1,4-Dioxane	BRL		ug/L	500
10061-01-5	*cis*-1,3-Dichloropropene	BRL		ug/L	0.4
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	5
108-88-3	Toluene	BRL		ug/L	0.5
10061-02-6	*trans*-1,3-Dichloropropene	BRL		ug/L	0.4
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	0.5
127-18-4	Tetrachloroethene	BRL		ug/L	0.5
142-28-9	1,3-Dichloropropane	BRL		ug/L	0.5
591-78-6	2-Hexanone	BRL		ug/L	5
124-48-1	Dibromochloromethane	BRL		ug/L	0.5
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.5
108-90-7	Chlorobenzene	BRL		ug/L	0.5
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	0.5
100-41-4	Ethylbenzene	BRL		ug/L	0.5
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL		ug/L	0.5

GROUNDWATER ANALYTICAL

EPA Method 8260B (Continued)
Volatile Organics by GC/MS

Field ID:	**B-1**	Matrix:	**Aqueous**
Project:	**Kendall/504.2.18**	Container:	**40 mL VOA VIAL w/HCL**
Client:	**Lightship Engineering**	Preservation:	**HCl/ Cool**
Laboratory ID:	**129014-1**	QC Batch ID:	**VM5-4060-W**
Sampled:	**10-26-09 10:35**	Instrument ID:	**MS-5 HP 6890**
Received:	**10-26-09 15:19**	Sample Volume:	**25 mL**
Analyzed:	**10-28-09 17:22**	Dilution Factor:	**1**
Analyst:	**LMG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
95-47-6	*ortho*-Xylene	BRL		ug/L	0.5
100-42-5	Styrene	BRL		ug/L	0.5
75-25-2	Bromoform	BRL		ug/L	0.5
98-82-8	Isopropylbenzene	BRL		ug/L	0.5
108-86-1	Bromobenzene	BRL		ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	0.5
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	0.5
110-57-6	*trans*-1,4-Dichloro-2-butene	BRL		ug/L	25
103-65-1	*n*-Propylbenzene	BRL		ug/L	0.5
95-49-8	2-Chlorotoluene	BRL		ug/L	0.5
108-67-8	1,3,5-Trimethylbenzene	BRL		ug/L	0.5
106-43-4	4-Chlorotoluene	BRL		ug/L	0.5
98-06-6	*tert*-Butylbenzene	BRL		ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	BRL		ug/L	0.5
135-98-8	*sec*-Butylbenzene	BRL		ug/L	0.5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	0.5
99-87-6	4-Isopropyltoluene	BRL		ug/L	0.5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	0.5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	0.5
104-51-8	*n*-Butylbenzene	BRL		ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	0.5
108-70-3	1,3,5-Trichlorobenzene	BRL		ug/L	0.5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	0.5
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
91-20-3	Naphthalene	BRL		ug/L	0.5
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	0.5
75-65-0	*tert*-Butyl Alcohol (TBA)	BRL		ug/L	20
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	0.5
637-92-3	Ethyl *tert*-butyl Ether (ETBE)	BRL		ug/L	0.5
994-05-8	*tert*-Amyl Methyl Ether (TAME)	BRL		ug/L	0.5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	9	**94** %	70 - 130 %
1,2-Dichloroethane-d_4	10	9	**93** %	70 - 130 %
Toluene-d_8	10	10	**98** %	70 - 130 %
4-Bromofluorobenzene	10	10	**98** %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample preparation performed by EPA Method 5030B.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

EPA Method 8270C
Semivolatile Organics by GC/MS (Part 1)

Field ID:	**B-1**	Matrix:	**Aqueous**
Project:	**Kendall/504.2.18**	Container:	**1 L Amber Glass**
Client:	**Lightship Engineering**	Preservation:	**Cool**
Laboratory ID:	**129014-02**	QC Batch ID:	**SV-2436-F**
Sampled:	**10-26-09 10:35**	Instrument ID:	**MS-3 HP 5890**
Received:	**10-26-09 15:19**	Sample Volume:	**1,000 mL**
Extracted:	**10-29-09 17:30**	Final Volume:	**1 mL**
Analyzed:	**11-01-09 02:57**	Dilution Factor:	**1**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
62-75-9	N-Nitrosodimethylamine	BRL		ug/L	5
110-86-1	Pyridine	BRL		ug/L	5
108-95-2	Phenol	BRL		ug/L	5
62-53-3	Aniline	BRL		ug/L	5
111-44-4	Bis(2-chloroethyl) ether	BRL		ug/L	5
95-57-8	2-Chlorophenol	BRL		ug/L	5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	5
100-51-6	Benzyl Alcohol	BRL		ug/L	5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	5
95-48-7	2-Methylphenol	BRL		ug/L	5
108-60-1	Bis(2-chloroisopropyl) ether	BRL		ug/L	5
108-39-4/106-44-5	3 and 4-Methylphenol *	BRL		ug/L	5
621-64-7	N-Nitrosodi-n-propylamine	BRL		ug/L	5
98-86-2	Acetophenone	BRL		ug/L	5
67-72-1	Hexachloroethane	BRL		ug/L	5
98-95-3	Nitrobenzene	BRL		ug/L	5
78-59-1	Isophorone	BRL		ug/L	5
88-75-5	2-Nitrophenol	BRL		ug/L	5
105-67-9	2,4-Dimethylphenol	BRL		ug/L	5
111-91-1	Bis(2-chloroethoxy) methane	BRL		ug/L	5
120-83-2	2,4-Dichlorophenol	BRL		ug/L	5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	5
106-47-8	4-Chloroaniline	BRL		ug/L	5
87-68-3	Hexachlorobutadiene	BRL		ug/L	5
59-50-7	4-Chloro-3-methylphenol	BRL		ug/L	5
77-47-4	Hexachlorocyclopentadiene	BRL		ug/L	5
88-06-2	2,4,6-Trichlorophenol	BRL		ug/L	5
95-95-4	2,4,5-Trichlorophenol	BRL		ug/L	5
91-58-7	2-Chloronaphthalene	BRL		ug/L	5
88-74-4	2-Nitroaniline	BRL		ug/L	5
100-25-4	1,4-Dinitrobenzene	BRL		ug/L	5
131-11-3	Dimethyl phthalate	BRL		ug/L	5
99-65-0	1,3-Dinitrobenzene	BRL		ug/L	5
606-20-2	2,6-Dinitrotoluene	BRL		ug/L	5
528-29-0	1,2-Dinitrobenzene	BRL		ug/L	5
99-09-2	3-Nitroaniline	BRL		ug/L	5
51-28-5	2,4-Dinitrophenol	BRL		ug/L	5
100-02-7	4-Nitrophenol	BRL		ug/L	5
132-64-9	Dibenzofuran	BRL		ug/L	5
121-14-2	2,4-Dinitrotoluene	BRL		ug/L	5
84-66-2	Diethyl phthalate	BRL		ug/L	5
7005-72-3	4-Chlorophenyl phenyl ether	BRL		ug/L	5
100-01-6	4-Nitroaniline	BRL		ug/L	5
534-52-1	4,6-Dinitro-2-methylphenol	BRL		ug/L	5

GROUNDWATER ANALYTICAL

EPA Method 8270C (Continued)
Semivolatile Organics by GC/MS (Part 1)

Field ID:	**B-1**	Matrix:	**Aqueous**
Project:	**Kendall/504.2.18**	Container:	**1 L Amber Glass**
Client:	**Lightship Engineering**	Preservation:	**Cool**
Laboratory ID:	**129014-02**	QC Batch ID:	**SV-2436-F**
Sampled:	**10-26-09 10:35**	Instrument ID:	**MS-3 HP 5890**
Received:	**10-26-09 15:19**	Sample Volume:	**1,000 mL**
Extracted:	**10-29-09 17:30**	Final Volume:	**1 mL**
Analyzed:	**11-01-09 02:57**	Dilution Factor:	**1**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
86-30-6	N-Nitrosodiphenylamine †	BRL		ug/L	5
122-66-7	1,2-Diphenylhydrazine ◊	BRL		ug/L	5
101-55-3	4-Bromophenyl phenyl ether	BRL		ug/L	5
86-74-8	Carbazole	BRL		ug/L	5
84-74-2	Di-*n*-butyl phthalate	BRL		ug/L	5
85-68-7	Butyl benzyl phthalate	BRL		ug/L	5
91-94-1	3,3'-Dichlorobenzidine	BRL		ug/L	5
117-81-7	Bis(2-ethylhexyl) phthalate	BRL		ug/L	5
117-84-0	Di-*n*-octyl phthalate	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	9	**43** %	15 - 110 %
Phenol-d5	20	7	**37** %	15 - 110 %
Nitrobenzene-d5	10	6	**59** %	30 - 130 %
2-Fluorobiphenyl	10	6	**64** %	30 - 130 %
2,4,6-Tribromophenol	20	15	**74** %	15 - 110 %
Terphenyl-d14	10	6	**61** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

* Analyzed as 4-Methylphenol.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

GROUNDWATER ANALYTICAL

EPA Method 8270C
Semivolatile Organics by GC/MS-SIM (Part 2)

Field ID:	**B-1**	Matrix:	**Aqueous**
Project:	**Kendall/504.2.18**	Container:	**1 L Amber Glass**
Client:	**Lightship Engineering**	Preservation:	**Cool**
Laboratory ID:	**129014-02**	QC Batch ID:	**SV-2436-F**
Sampled:	**10-26-09 10:35**	Instrument ID:	**MS-6 HP 6890**
Received:	**10-26-09 15:19**	Sample Volume:	**1,000 mL**
Extracted:	**10-29-09 17:30**	Final Volume:	**1 mL**
Analyzed:	**10-30-09 18:25**	Dilution Factor:	**1**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/L	0.5
91-57-6	2-Methylnaphthalene	BRL		ug/L	0.5
208-96-8	Acenaphthylene	BRL		ug/L	0.5
83-32-9	Acenaphthene	BRL		ug/L	0.5
86-73-7	Fluorene	BRL		ug/L	0.5
85-01-8	Phenanthrene	BRL		ug/L	0.5
120-12-7	Anthracene	BRL		ug/L	0.5
206-44-0	Fluoranthene	BRL		ug/L	0.5
129-00-0	Pyrene	BRL		ug/L	0.5
56-55-3	Benzo[a]anthracene	BRL		ug/L	0.1
218-01-9	Chrysene	BRL		ug/L	0.1
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	0.1
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	0.1
50-32-8	Benzo[a]pyrene	BRL		ug/L	0.1
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	0.1
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	0.1
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	0.1
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
118-74-1	Hexachlorobenzene	BRL		ug/L	0.5
87-86-5	Pentachlorophenol	BRL		ug/L	1.0

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	9.2	**46** %	15 - 110 %
Phenol-d5	20	8.7	**43** %	15 - 110 %
Nitrobenzene-d5	10	7.2	**72** %	30 - 130 %
2-Fluorobiphenyl	10	7.0	**70** %	30 - 130 %
2,4,6-Tribromophenol	20	16	**82** %	15 - 110 %
Terphenyl-d14	10	5.3	**53** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Sample extraction performed by EPA Method 3510C.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

EPA Method 8082
Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID:	**B-1**	Matrix:	**Aqueous**
Project:	**Kendall/504.2.18**	Container:	**1 L Amber Glass**
Client:	**Lightship Engineering**	Preservation:	**Cool**
Laboratory ID:	**129014-03**	QC Batch ID:	**PB-2548-F**
Sampled:	**10-26-09 10:35**	Instrument ID:	**GC-11 Agilent 6890**
Received:	**10-26-09 15:19**	Sample Weight:	**1000 mL**
Extracted:	**10-29-09 19:00**	Final Volume:	**10 mL**
Cleaned Up:	**10-29-09 23:00**	Dilution Factor:	**1**
Analyzed:	**11-01-09 12:58**		
Analyst:	**AWG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/L	0.2
11104-28-2	Aroclor 1221	BRL		ug/L	0.2
11141-16-5	Aroclor 1232	BRL		ug/L	0.2
53469-21-9	Aroclor 1242	BRL		ug/L	0.2
12672-29-6	Aroclor 1248	BRL		ug/L	0.2
11097-69-1	Aroclor 1254	BRL		ug/L	0.2
11096-82-5	Aroclor 1260	BRL		ug/L	0.2
37324-23-5	Aroclor 1262 †	BRL		ug/L	0.2
11100-14-4	Aroclor 1268 †	BRL		ug/L	0.2

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First	Tetrachloro-*m*-xylene	0.20	0.15	**77** %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.18	**91** %	30 - 150 %
Second	Tetrachloro-*m*-xylene	0.20	0.16	**81** %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.18	**89** %	30 - 150 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Non-target analyte. Result is based on a single mid-range calibration standard.

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	**B-1**	Matrix:	**Aqueous**
Project:	**Kendall/504.2.18**	Container:	**250 mL Plastic**
Client:	**Lightship Engineering**	Preservation:	**HNO3 / Cool**
Laboratory ID:	**129014-4**	Preserved:	**10-26-09 10:35**
Sampled:	**10-26-09 10:35**		
Received:	**10-26-09 15:19**		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 200.7[1]	MB-3899-W	EPA 200.7	10-28-09 00:00	50 mL	ICP-1 PE 3000	MP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-89-6	Iron, Total	**3.1**		mg/L	0.1	1	10-28-09 19:02	EPA 200.7[1]

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	**B-1**	Matrix:	**Aqueous**
Project:	**Kendall/504.2.18**	Container:	**500 mL Plastic**
Client:	**Lightship Engineering**	Preservation:	**HNO3 / Cool**
Laboratory ID:	**129014-5**	Preserved:	**10-26-09 10:35**
Sampled:	**10-26-09 10:35**		
Received:	**10-26-09 15:19**		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B[1]	MB-3898-W	EPA 3010A	10-28-09 00:00	50 mL	ICP-1 PE 3000	MP
EPA 7470A[2]	MP-2235-W	EPA 7470A	10-28-09 00:00	25 mL	CVAA-1 PE FIMS	MP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-38-2	Arsenic, Total	BRL		mg/L	0.01	1	10-28-09 16:51	EPA 6010B[1]
7440-36-0	Antimony, Total	BRL		mg/L	0.06	1	10-28-09 16:51	EPA 6010B[1]
7440-41-7	Beryllium, Total	BRL		mg/L	0.004	1	10-28-09 16:51	EPA 6010B[1]
7440-43-9	Cadmium, Total	BRL		mg/L	0.004	1	10-28-09 16:51	EPA 6010B[1]
7440-47-3	Chromium, Total	BRL		mg/L	0.01	1	10-28-09 16:51	EPA 6010B[1]
7440-50-8	Copper, Total	BRL		mg/L	0.025	1	10-28-09 16:51	EPA 6010B[1]
7439-92-1	Lead, Total	**0.016**		mg/L	0.005	1	10-28-09 16:51	EPA 6010B[1]
7439-97-6	Mercury, Total	BRL		mg/L	0.0002	1	10-28-09 15:34	EPA 7470A[2]
7440-02-0	Nickel, Total	BRL		mg/L	0.04	1	10-28-09 16:51	EPA 6010B[1]
7782-49-2	Selenium, Total	BRL		mg/L	0.05	1	10-28-09 16:51	EPA 6010B[1]
7440-22-4	Silver, Total	BRL		mg/L	0.007	1	10-28-09 16:51	EPA 6010B[1]
7440-28-0	Thallium, Total	BRL		mg/L	0.02	1	10-28-09 16:51	EPA 6010B[1]
7440-66-6	Zinc, Total	BRL		mg/L	0.2	1	10-28-09 16:51	EPA 6010B[1]

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

EPA Method 8015B (Modified)
Total Petroleum Hydrocarbons by GC/FID

Field ID:	**B-1**	Matrix:	**Aqueous**
Project:	**Kendall/504.2.18**	Container:	**1 L Amber Glass**
Client:	**Lightship Engineering**	Preservation:	**H2SO4/ Cool/Cool**
Laboratory ID:	**129014-6**	QC Batch ID:	**HF-2163-F**
Sampled:	**10-26-09 10:35**	Instrument ID:	**GC4 HP 5890**
Received:	**10-26-09 15:19**	Sample Volume:	**970 mL**
Extracted:	**10-28-09 17:00**	Final Volume:	**1 mL**
Analyzed:	**10-29-09 14:02**	Dilution Factor:	**1**
Analyst:	**MB**		

Analyte	Concentration	Notes	Units	Reporting Limit
Total Petroleum Hydrocarbons	**0.6**		mg/L	0.2

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho -Terphenyl	0.041	0.029	**70** %	60 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified to quantify total petroleum hydrocarbons in the range n-C 9 through n-C 36. Results are quantified on the basis of a series of aromatic and aliphatic hydrocarbons, using 5-alpha-androstane as an internal standard.
Sample extraction performed by EPA Method 3510C.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **B-1** Matrix: **Aqueous**
Project: **Kendall/504.2.18** Received: **10-26-09 15:19**
Client: **Lightship Engineering**

Lab ID: **129014-07** Sampled: **10-26-09 10:35** Container: **1 L Plastic** Preservation: **Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	**150**	mg/L	10	5	100 mL	10-28-09 16:52	TSS-1692-W	SM 2540 D	3	JR

Lab ID: **129014-08** Sampled: **10-26-09 10:35** Container: **500 mL Plastic** Preservation: **NaOH/Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Cyanide, Total	BRL	mg/L	0.01	1	50 mL	10-30-09 11:58	TCN-1528-W	EPA 9012A	1	JR

Lab ID: **129014-09** Sampled: **10-26-09 10:35** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Chlorine, Total Residual	BRL	mg/L	0.02	1	5 mL	10-27-09 08:00	TRC-0818-W	SM 4500-Cl G	2	JR

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

RL Reporting Limit.

DF Dilution Factor.

1 Instrument ID: Lachat 8000 Autoanalyzer

2 Instrument ID: Thermo Electron Genesys 20

3 Instrument ID: Mettler AT 200 Balance

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**Kendall/504.2.18**	Lab ID:	**129014**
Client:	**Lightship Engineering**	Received:	**10-26-09 15:19**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1 . No documentation discrepancies, changes, or amendments were noted.

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1 . EPA 8270C Modification: Sample 129014-2. Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method. GC/MS-SIM was used to achieve low quantification limits necessary for regulatory compliance.

2 . EPA 6010B Note: Sample 129014-5. Sample was analyzed for selected target analytes, as requested by client.

GROUNDWATER ANALYTICAL

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CHAIN-OF-CUSTODY RECORD AND WORK ORDER

Project Name: KENDALL	Firm: LIGHTSHIP ENGINEERING
Project Number: 504.2.18	Address: 39 INDUSTRIAL PARK RD
Sampler Name: TOM REMMERS	City / State / Zip:: PLYMOUTH MA 02362
Project Manager: AMY ROTH	Telephone: 508-830-3344

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- ☐ 10 Business Days
- ☑ 5 Business Days
- ☐ RUSH (RAN- _____)
  (Rush requires Rush Authorization Number)
- ☑ Please Email to: AROTH@LIGHTSHIPENGINEERING.COM
- ☐ Please FAX to: _____

BILLING

- ☑ Purchase Order No.: 504.2.18
- ☐ Third Party Billing: _____
- ☐ GWA Quote: _____

ANALYSIS REQUEST

OPTIONS: ☐ TIC Search

Volatiles
- SDWA: ☐ 524.2
- NPDES: ☐ 624
- RCRA/TE: ☐ 8260B TCL+MTBE; ☑ 8260B

☐ 8260B Aromatics
☐ 8260B Halocarbons
☐ 8021B Vermont
☑ 8270C

Semivolatiles
- OPTIONS: ☐ Acids Only; ☐ B/N Only; ☐ TIC Search
- SDWA: ☐ 525.2
- NPDES: ☐ 625
- RCRA/TE: ☐ 8270C PAHs only

Pest/Herb/PCBs Extractable
- SDWA: ☐ 505 ☐ 508
- NPDES: ☐ 608 Pesticides
- RCRA/TE: ☐ 8081A Pesticides; ☑ 8082 PCBs

Pest/Herb/PCBs Vol.
- SDWA: ☐ 531.1; ☐ 552.3; ☐ 504.1 EDB/DBCP
- NPDES: ☐ 615
- RCRA/TE: ☐ 8151A Herbicides; ☐ 8011 EDB/DBCP

Metals
- SDWA: ☐ Lead and Copper
- NPDES: ☑ 13 Priority Pollutant
- RCRA/TE: ☐ 8 RCRA; ☐ 5 RCRA; ☐ 14 MA DEP Metals; ☐ 23 TAL

Specify For Water Samples: ☑ Total ☐ Dissolved

☐ Specify:

Petroleum Hydrocarbon
- Ext. TPH: ☐ Diesel Range Organics (DRO) ☐ ME DRO; ☐ GT ETPH; ☐ MA DEP EPH w/all targets ☐ EPH C-carbon Ranges only ☐ EPH w/4 PAHs; ☐ Hydrocarbon Fingerprint (62.5R0) by ASTM D3328-96 Mod.)
- Vol. TPH: ☑ TPH by GC/FID (8015/8100 Mod) Quantitative Only; ☐ Gasoline Range Organics (GRO) ☐ ME GRO; ☐ MA DEP VPH w/all targets ☐ VPH Carbon ranges only

Haz. Waste
☐ TCLP ☐ SPLP ☐ 13 Metals ☐ Pl only ☐ VOA ☐ Semi VOA ☐ Pesticides ☐ Herbicides; ☐ Corrosivity (as pH) ☐ Reactivity ☐ Ignitability ☐ Conductivity ☐ Paint Filter; ☐ MA Basic Disposal: 8260/8TCL TPH, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity; ☐ MA Extended Disposal: 8260B, 8270C, TPH, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity

General Chemistry
☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Fluoride ☐ Sulfate; ☐ Dissolved Phosphorus; ☐ Ammonia ☐ TKN ☐ Total Phosphorus ☐ Total N (as NH3/NO3/TKN); ☐ Oil & Grease; ☐ COD ☐ TOC; ☐ BOD ☐ CBOD ☐ TSS ☑ TS ☐ Alkalinity: SM2540 D

Other
☐ pH ☐ Dissolved Oxygen ☐ Turbidity; ☐ Total Coliform ☐ Fecal Coliform ☐ HPC; ☐ MA DEP Asbestos in Soil ☐ Asbestos (PLM)

Sampling DATE	Sampling TIME	SAMPLE IDENTIFICATION	Matrix	Type	Container(s)	Preservation	Filtered	LABORATORY NUMBER (Lab Use Only)	Analysis Request
10/21/19	1005	B-1	GROUNDWATER: X	COMPOSITE; GRAB	NUMBER: 3; 40ml VOA Vial *6: 3; 60mL/2 oz Glass; 120mL/4 oz Amber Glass; 250mL/8 oz Glass: 1; 500mL/16 oz Glass; 1 L/32 oz Amber Glass: 6; 250mL/8 oz Plastic *; 500mL/16 oz Plastic **: 2; 1 L/32 oz Plastic *: 1; 130mL Sterile	HCl: X; HNO3: X; H2SO4: X; NaOH: X; Methanol; Sodium Bisulfate; ICE: X	YES; NO		Volatiles: 8260B: X; Semivolatiles: 8270C: X; Pest/Herb/PCBs Extractable: 8082 PCBs: X; Metals: 13 Priority Pollutant: X; Specify For Water Samples: Total; Petroleum Hydrocarbon Vol. TPH: TPH by GC/FID (8015/8100 Mod) Quantitative Only: X; Haz. Waste: TCLP: X; General Chemistry: TSS: X; Alkalinity: SM2540 D; Other: Total Residual Chlorine SM4500-Cl G: X; IRON 200.7: X

REMARKS / SPECIAL INSTRUCTIONS

- ☑ YES ☐ NO MCP Data Certification required.
- ☐ YES ☐ NO MCP Drinking Water Sample Included.
  (Volatile analyses require duplicate collection and Trip Blanks).
- ☐ Analyze Duplicates and Trips Blanks only if positive results.

☐ YES ☐ NO CT RCP Data Certification required.

Signature: _____

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
☐ CT	☑ MCP GW-1/S-1	☐ PWS Form
☐ ME	☐ MCP GW-2/S-2	☐ MWRA
☑ MA	☐ NY STARS	☐ _____
☐ NH	☐ Drinking Water	
☐ NY	☐ Wastewater	
☐ RI	☐ Waste Disposal	
☐ VT	☐ Dredge Material	
☐ ___	☐ _____	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required	Selection of QC Sample
☐ Sample Duplicate	☐ Please use sample: _____
☐ Matrix Spike	
☐ Matrix Spike Duplicate	

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

	Date	Time		
Relinquished by Sampler:	10/21/19	1519	Received by:	Receipt Temperature: ☐ Ice ☐ Refrigerated 2-6°C Recommended: 3.7
Relinquished by:			Received by:	Container Count:
Relinquished by:			Received by Laboratory:	Shipping/Airbill Number:

Method of Shipment: ☐ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ _____

Custody Seal Number:

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category:	**EPA 8015B Mod TPH**	Instrument ID:	**GC4 HP 5890**
QC Batch ID:	**HF-2163-F**	Extracted:	**10-28-09 17:00**
Matrix:	**Aqueous**	Analyzed:	**10-29-09 14:59**
Units:	**mg/L**	Analyst:	**MB**

Analyte	Spiked	Measured	Recovery	QC Limits
Fuel Oil No. 2	2.0	1.6	**80** %	60 - 140 %

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	0.040	0.035	**88** %	60 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified to quantify total petroleum hydrocarbons in the range n-C 9 through n-C 36. Results are quantified on the basis of a series of aromatic and aliphatic hydrocarbons, using 5-alpha-androstane as an internal standard.
Sample extraction performed by EPA Method 3510C.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA 8015B Mod TPH**	Instrument ID:	**GC4 HP 5890**
QC Batch ID:	**HF-2163-F**	Extracted:	**10-28-09 17:00**
Matrix:	**Aqueous**	Analyzed:	**10-29-09 14:04**
		Analyst:	**MB**

Analyte	Concentration	Notes	Units	Reporting Limit
Total Petroleum Hydrocarbons	BRL		mg/L	0.2

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho -Terphenyl	0.040	0.032	**81** %	60 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified to quantify total petroleum hydrocarbons in the range n-C 9 through n-C 36. Results are quantified on the basis of a series of aromatic and aliphatic hydrocarbons, using 5-alpha-androstane as an internal standard.
Sample extraction performed by EPA Method 3510C.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Laboratory Control Samples

Category: **Inorganics**
Matrix: **Aqueous**
Units: **mg/L**

Sample Type	Method	QC Batch ID	Prep Method	Prepared	Analyzed	Instrument ID	Analyst
LCS	EPA 9012A	TCN-1528-W	EPA 9012A	10/30/2009 8:00	10/30/2009 11:38	Lachat 8000 Autoanalyzer	JR
LCSD	EPA 9012A	TCN-1528-W	EPA 9012A	10/30/2009 8:00	10/30/2009 11:39	Lachat 8000 Autoanalyzer	JR

Analyte	LCS			LCS Duplicate				QC Limits		Method
	Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
Cyanide, Total	0.45	0.54	**120%**	0.45	0.54	**120%**	**0 %**	80-120%	20 %	EPA 9012A

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **Inorganic Chemistry**
Matrix: **Aqueous**

Analyte	Units	Spiked	Measured	Recovery	QC Limits	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	mg/L	88	74	**84 %**	80 - 120 %	10-28-09 16:52	TSS-1692-W	SM 2540 D	2	JR
Chlorine, Total Residual	mg/L	0.05	0.05	**102 %**	80 - 120 %	10-27-09 08:00	TRC-0818-W	SM 4500-Cl G	1	JR

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

1 Instrument ID: Thermo Electron Genesys 20

2 Instrument ID: Mettler AT 200 Balance

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **Inorganic Chemistry**
Matrix: **Aqueous**

Analyte	Result	Units	RL	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	BRL	mg/L	2	10-28-09 16:52	TSS-1692-W	SM 2540 D	3	JR
Chlorine, Total Residual	BRL	mg/L	0.02	10-27-09 08:00	TRC-0818-W	SM 4500-Cl G	2	JR
Cyanide, Total	BRL	mg/L	0.01	10-30-09 11:38	TCN-1528-W	EPA 9012A	1	JR

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

RL Reporting Limit.

1 Instrument ID: Lachat 8000 Autoanalyzer

2 Instrument ID: Thermo Electron Genesys 20

3 Instrument ID: Mettler AT 200 Balance

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8082**	Instrument ID:	**GC-11 Agilent 6890**	Instrument ID:	**GC-11 Agilent 6890**
QC Batch ID:	**PB-2548-F**	Extracted:	**10-29-09 19:00**	Extracted:	**10-29-09 19:00**
Matrix:	**Aqueous**	Cleaned Up:	**10-29-09 23:00**	Cleaned Up:	**10-29-09 23:00**
Units:	**ug/L**	Analyzed:	**11-01-09 12:11**	Analyzed:	**11-01-09 12:34**
		Analyst:	**AWG**	Analyst:	**AWG**

CAS Number	Analyte	LCS					LCS Duplicate							QC Limits	
		Spiked	Measured		Recovery		Spiked	Measured		Recovery		RPD			
			1st Col	2nd Col	1st Col	2nd Col		1st Col	2nd Col	1st Col	2nd Col	1st Col	2nd Col	Spike	RPD
12674-11-2	Aroclor 1016	5.0	5.0	5.0	**100%**	**100%**	5.0	5.1	4.9	**102%**	**98%**	**2 %**	**2 %**	40 - 140%	30 %
11096-82-5	Aroclor 1260	5.0	5.1	4.9	**102%**	**98%**	5.0	5.2	4.8	**104%**	**95%**	**1 %**	**2 %**	40 - 140%	30 %

QC Surrogate Compound	Surrogate Recovery											QC Limits
Tetrachloro-*m* -xylene	0.20	0.17	0.18	**86%**	**90%**	0.20	0.18	0.19	**90%**	**94%**		30 - 150 %
Decachlorobiphenyl	0.20	0.22	0.23	**111%**	**116%**	0.20	0.23	0.22	**114%**	**111%**		30 - 150 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8082**	Instrument ID:	**GC-11 Agilent 6890**
QC Batch ID:	**PB-2548-F**	Extracted:	**10-29-09 19:00**
Matrix:	**Aqueous**	Cleaned Up:	**10-29-09 23:00**
		Analyzed:	**11-01-09 11:47**
		Analyst:	**AWG**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/L	0.2
11104-28-2	Aroclor 1221	BRL		ug/L	0.2
11141-16-5	Aroclor 1232	BRL		ug/L	0.2
53469-21-9	Aroclor 1242	BRL		ug/L	0.2
12672-29-6	Aroclor 1248	BRL		ug/L	0.2
11097-69-1	Aroclor 1254	BRL		ug/L	0.2
11096-82-5	Aroclor 1260	BRL		ug/L	0.2
37324-23-5	Aroclor 1262 †	BRL		ug/L	0.2
11100-14-4	Aroclor 1268 †	BRL		ug/L	0.2

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First	Tetrachloro-*m*-xylene	0.20	0.18	**88** %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.22	**109** %	30 - 150 %
Second	Tetrachloro-*m*-xylene	0.20	0.18	**92** %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.22	**109** %	30 - 150 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Non-target analyte. Result is based on a single mid-range calibration standard.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **Metals**
Matrix: **Aqueous**
Units: **mg/L**

Analysis Method	QC Batch ID	Prep Method	Prepared	Instrument ID	Analyst
EPA 200.7	MB-3899-WL	EPA 200.7	10-28-09 00:00	ICP-1 PE 3000	JK

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits	Analyzed	Method
7439-89-6	Iron	5.0	5.2	**103** %	85-115 %	10-28-09 18:49	EPA 200.7

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **Metals**
Matrix: **Aqueous**

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 200.7	MB-3899-WB	EPA 200.7	10-28-09 00:00	50 mL	ICP-1 PE 3000	JK

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-89-6	Iron	BRL		mg/L	0.1	1	10-28-09 18:45	EPA 200.7

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

Category: **Metals**
Matrix: **Aqueous**
Units: **mg/L**

Sample Type	Method	QC Batch ID	Prep Method	Prepared	Analyzed	Instrument ID	Analyst
LCS	EPA 6010B	MB-3898-WL	EPA 3010A	10-28-09 00:00	10-28-09 16:39	ICP-1 PE 3000	JK
LCS	EPA 7470A	MP-2235-WL	EPA 7470A	10-28-09 00:00	10-28-09 14:42	CVAA-1 PE FIMS	MP
LCSD	EPA 6010B	MB-3898-WL	EPA 3010A	10-28-09 00:00	10-28-09 16:45	ICP-1 PE 3000	JK
LCSD	EPA 7470A	MP-2235-WL	EPA 7470A	10-28-09 00:00	10-28-09 14:45	CVAA-1 PE FIMS	MP

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits		Method
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
7440-36-0	Antimony	5.0	4.8	**96%**	5.0	4.6	**93%**	**2 %**	80-120 %	20 %	EPA 6010B
7440-38-2	Arsenic	5.0	4.8	**96%**	5.0	4.6	**92%**	**2 %**	80-120 %	20 %	EPA 6010B
7440-41-7	Beryllium	1.0	0.97	**97%**	1.0	0.95	**95%**	**1 %**	80-120 %	20 %	EPA 6010B
7440-43-9	Cadmium	1.0	0.97	**97%**	1.0	0.95	**95%**	**1 %**	80-120 %	20 %	EPA 6010B
7440-47-3	Chromium	1.0	0.95	**95%**	1.0	0.93	**93%**	**1 %**	80-120 %	20 %	EPA 6010B
7440-50-8	Copper	1.0	0.93	**93%**	1.0	0.91	**91%**	**1 %**	80-120 %	20 %	EPA 6010B
7439-92-1	Lead	5.0	4.8	**96%**	5.0	4.6	**92%**	**2 %**	80-120 %	20 %	EPA 6010B
7439-97-6	Mercury	0.0010	0.0009	**90%**	0.0010	0.0011	**105%**	**8 %**	80-120 %	20 %	EPA 7470A
7440-02-0	Nickel	1.0	0.99	**99%**	1.0	0.96	**96%**	**2 %**	80-120 %	20 %	EPA 6010B
7782-49-2	Selenium	5.0	4.6	**92%**	5.0	4.4	**89%**	**2 %**	80-120 %	20 %	EPA 6010B
7440-22-4	Silver	1.0	0.98	**98%**	1.0	0.97	**97%**	**1 %**	80-120 %	20 %	EPA 6010B
7440-28-0	Thallium	5.0	4.7	**94%**	5.0	4.6	**92%**	**1 %**	80-120 %	20 %	EPA 6010B
7440-66-6	Zinc	1.0	0.94	**94%**	1.0	0.92	**92%**	**1 %**	80-120 %	20 %	EPA 6010B

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **Metals**
Matrix: **Aqueous**

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B	MB-3898-WB	EPA 3010A	10-28-09 00:00	50 mL	ICP-1 PE 3000	JK
EPA 7470A	MP-2235-WB	EPA 7470A	10-28-09 00:00	25 mL	CVAA-1 PE FIMS	MP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-36-0	Antimony	BRL		mg/L	0.06	1	10-28-09 16:35	EPA 6010B
7440-38-2	Arsenic	BRL		mg/L	0.01	1	10-28-09 16:35	EPA 6010B
7440-41-7	Beryllium	BRL		mg/L	0.004	1	10-28-09 16:34	EPA 6010B
7440-43-9	Cadmium	BRL		mg/L	0.004	1	10-28-09 16:35	EPA 6010B
7440-47-3	Chromium	BRL		mg/L	0.01	1	10-28-09 16:34	EPA 6010B
7440-50-8	Copper	BRL		mg/L	0.025	1	10-28-09 16:34	EPA 6010B
7439-92-1	Lead	BRL		mg/L	0.005	1	10-28-09 16:35	EPA 6010B
7439-97-6	Mercury	BRL		mg/L	0.0002	1	10-28-09 14:42	EPA 7470A
7440-02-0	Nickel	BRL		mg/L	0.04	1	10-28-09 16:34	EPA 6010B
7782-49-2	Selenium	BRL		mg/L	0.05	1	10-28-09 16:35	EPA 6010B
7440-22-4	Silver	BRL		mg/L	0.007	1	10-28-09 16:34	EPA 6010B
7440-28-0	Thallium	BRL		mg/L	0.02	1	10-28-09 16:35	EPA 6010B
7440-66-6	Zinc	BRL		mg/L	0.2	1	10-28-09 16:35	EPA 6010B

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA Method 8260B**	Instrument ID:	**MS-5 HP 6890**	Instrument ID:	**MS-5 HP 6890**
QC Batch ID:	**VM5-4060-W**	Analyzed:	**10-28-09 07:05**	Analyzed:	**10-28-09 07:46**
Matrix:	**Aqueous**	Analyst:	**LMG**	Analyst:	**LMG**
Units:	**ug/L**				

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
75-71-8	Dichlorodifluoromethane	10	11	**114** %	10	11	**110** %	**3** %	70 - 130 %	25%
74-87-3	Chloromethane	10	10	**105** %	10	10	**100** %	**4** %	70 - 130 %	25%
75-01-4	Vinyl Chloride	10	11	**106** %	10	10	**104** %	**2** %	70 - 130 %	25%
74-83-9	Bromomethane	10	10	**101** %	10	9.9	**99** %	**2** %	70 - 130 %	25%
75-00-3	Chloroethane	10	11	**107** %	10	11	**106** %	**1** %	70 - 130 %	25%
75-69-4	Trichlorofluoromethane	10	9.4	**94** %	10	10	**101** %	**7** %	70 - 130 %	25%
60-29-7	Diethyl Ether	20	21	**104** %	20	21	**106** %	**1** %	70 - 130 %	25%
75-35-4	1,1-Dichloroethene	10	11	**108** %	10	9.9	**99** %	**9** %	70 - 130 %	25%
76-13-1	1,1,2-Trichlorotrifluoroethane	20	25	**124** %	20	24	**122** %	**2** %	70 - 130 %	25%
67-64-1	Acetone	20	15	**77** %	20	16	**78** %	**1** %	70 - 130 %	25%
75-15-0	Carbon Disulfide	20	22	**111** %	20	22	**108** %	**2** %	70 - 130 %	25%
75-09-2	Methylene Chloride	10	10	**100** %	10	10	**101** %	**0** %	70 - 130 %	25%
107-13-1	Acrylonitrile	10	11	**109** %	10	10	**100** %	**8** %	70 - 130 %	25%
156-60-5	*trans*-1,2-Dichloroethene	10	10	**102** %	10	9.9	**99** %	**3** %	70 - 130 %	25%
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	10	11	**112** %	10	11	**113** %	**0** %	70 - 130 %	25%
75-34-3	1,1-Dichloroethane	10	10	**104** %	10	10	**103** %	**0** %	70 - 130 %	25%
594-20-7	2,2-Dichloropropane	10	11	**108** %	10	10	**105** %	**3** %	70 - 130 %	25%
156-59-2	*cis*-1,2-Dichloroethene	10	10	**104** %	10	10	**104** %	**0** %	70 - 130 %	25%
78-93-3	2-Butanone (MEK)	20	16	**78** %	20	17	**86** %	**10** %	70 - 130 %	25%
74-97-5	Bromochloromethane	10	10	**101** %	10	10	**104** %	**3** %	70 - 130 %	25%
109-99-9	Tetrahydrofuran (THF)	20	19	**97** %	20	19	**93** %	**4** %	70 - 130 %	25%
67-66-3	Chloroform	10	10	**102** %	10	10	**101** %	**1** %	70 - 130 %	25%
71-55-6	1,1,1-Trichloroethane	10	10	**100** %	10	9.9	**99** %	**1** %	70 - 130 %	25%
56-23-5	Carbon Tetrachloride	10	10	**100** %	10	9.9	**99** %	**1** %	70 - 130 %	25%
563-58-6	1,1-Dichloropropene	10	10	**102** %	10	10	**101** %	**1** %	70 - 130 %	25%
71-43-2	Benzene	10	10	**102** %	10	10	**101** %	**1** %	70 - 130 %	25%
107-06-2	1,2-Dichloroethane	10	9.5	**95** %	10	9.6	**96** %	**0** %	70 - 130 %	25%
79-01-6	Trichloroethene	10	9.7	**97** %	10	9.7	**97** %	**0** %	70 - 130 %	25%
78-87-5	1,2-Dichloropropane	10	10	**101** %	10	10	**101** %	**0** %	70 - 130 %	25%
74-95-3	Dibromomethane	10	9.8	**98** %	10	9.9	**99** %	**2** %	70 - 130 %	25%
75-27-4	Bromodichloromethane	10	10	**101** %	10	10	**101** %	**0** %	70 - 130 %	25%
123-91-1	1,4-Dioxane	200	200	**101** %	200	190	**95** %	**7** %	70 - 130 %	25%
10061-01-5	*cis*-1,3-Dichloropropene	10	9.8	**98** %	10	9.9	**99** %	**1** %	70 - 130 %	25%
108-10-1	4-Methyl-2-Pentanone (MIBK)	20	20	**100** %	20	20	**101** %	**1** %	70 - 130 %	25%
108-88-3	Toluene	10	10	**101** %	10	9.9	**99** %	**2** %	70 - 130 %	25%
10061-02-6	*trans*-1,3-Dichloropropene	10	8.8	**88** %	10	8.8	**88** %	**1** %	70 - 130 %	25%
79-00-5	1,1,2-Trichloroethane	10	9.9	**99** %	10	10	**101** %	**3** %	70 - 130 %	25%
127-18-4	Tetrachloroethene	10	10	**102** %	10	10	**102** %	**0** %	70 - 130 %	25%
142-28-9	1,3-Dichloropropane	10	9.8	**98** %	10	10	**100** %	**2** %	70 - 130 %	25%
591-78-6	2-Hexanone	20	19	**96** %	20	20	**98** %	**2** %	70 - 130 %	25%
124-48-1	Dibromochloromethane	10	9.8	**98** %	10	10	**100** %	**2** %	70 - 130 %	25%
106-93-4	1,2-Dibromoethane (EDB)	10	10	**101** %	10	10	**103** %	**2** %	70 - 130 %	25%
108-90-7	Chlorobenzene	10	10	**100** %	10	10	**100** %	**0** %	70 - 130 %	25%
630-20-6	1,1,1,2-Tetrachloroethane	10	10	**101** %	10	10	**101** %	**0** %	70 - 130 %	25%
100-41-4	Ethylbenzene	10	11	**105** %	10	11	**106** %	**0** %	70 - 130 %	25%
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	20	21	**105** %	20	21	**105** %	**0** %	70 - 130 %	25%
95-47-6	*ortho*-Xylene	10	10	**103** %	10	10	**103** %	**0** %	70 - 130 %	25%
100-42-5	Styrene	10	11	**106** %	10	11	**106** %	**0** %	70 - 130 %	25%
75-25-2	Bromoform	10	10	**100** %	10	10	**100** %	**1** %	70 - 130 %	25%

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA Method 8260B**	Instrument ID:	**MS-5 HP 6890**	Instrument ID:	**MS-5 HP 6890**
QC Batch ID:	**VM5-4060-W**	Analyzed:	**10-28-09 07:05**	Analyzed:	**10-28-09 07:46**
Matrix:	**Aqueous**	Analyst:	**LMG**	Analyst:	**LMG**
Units:	**ug/L**				

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
98-82-8	Isopropylbenzene	10	9.7	**97** %	10	9.5	**95** %	**2** %	70 - 130 %	25%
108-86-1	Bromobenzene	10	10	**104** %	10	10	**103** %	**0** %	70 - 130 %	25%
79-34-5	1,1,2,2-Tetrachloroethane	10	11	**106** %	10	10	**103** %	**3** %	70 - 130 %	25%
96-18-4	1,2,3-Trichloropropane	10	11	**110** %	10	11	**113** %	**3** %	70 - 130 %	25%
110-57-6	*trans*-1,4-Dichloro-2-butene	200	240	**118** %	200	240	**119** %	**1** %	70 - 130 %	25%
103-65-1	*n*-Propylbenzene	10	11	**112** %	10	11	**110** %	**1** %	70 - 130 %	25%
95-49-8	2-Chlorotoluene	10	10	**102** %	10	10	**104** %	**2** %	70 - 130 %	25%
108-67-8	1,3,5-Trimethylbenzene	10	11	**107** %	10	11	**106** %	**1** %	70 - 130 %	25%
106-43-4	4-Chlorotoluene	10	10	**104** %	10	10	**104** %	**1** %	70 - 130 %	25%
98-06-6	*tert*-Butylbenzene	10	11	**109** %	10	11	**108** %	**1** %	70 - 130 %	25%
95-63-6	1,2,4-Trimethylbenzene	10	11	**108** %	10	11	**107** %	**1** %	70 - 130 %	25%
135-98-8	*sec*-Butylbenzene	10	11	**110** %	10	11	**108** %	**2** %	70 - 130 %	25%
541-73-1	1,3-Dichlorobenzene	10	10	**103** %	10	10	**102** %	**1** %	70 - 130 %	25%
99-87-6	4-Isopropyltoluene	10	11	**108** %	10	11	**107** %	**1** %	70 - 130 %	25%
106-46-7	1,4-Dichlorobenzene	10	10	**101** %	10	10	**100** %	**1** %	70 - 130 %	25%
95-50-1	1,2-Dichlorobenzene	10	10	**104** %	10	10	**102** %	**2** %	70 - 130 %	25%
104-51-8	*n*-Butylbenzene	10	11	**110** %	10	11	**108** %	**2** %	70 - 130 %	25%
96-12-8	1,2-Dibromo-3-chloropropane	10	9.0	**90** %	10	9.1	**91** %	**0** %	70 - 130 %	25%
108-70-3	1,3,5-Trichlorobenzene	10	11	**106** %	10	10	**104** %	**1** %	70 - 130 %	25%
120-82-1	1,2,4-Trichlorobenzene	10	10	**104** %	10	10	**104** %	**0** %	70 - 130 %	25%
87-68-3	Hexachlorobutadiene	10	9.8	**98** %	10	9.5	**95** %	**3** %	70 - 130 %	25%
91-20-3	Naphthalene	10	9.3	**93** %	10	9.4	**94** %	**1** %	70 - 130 %	25%
87-61-6	1,2,3-Trichlorobenzene	10	10	**103** %	10	10	**103** %	**0** %	70 - 130 %	25%
75-65-0	*tert*-Butyl Alcohol (TBA)	200	200	**101** %	200	180	**89** %	**13** %	70 - 130 %	25%
108-20-3	Di-isopropyl Ether (DIPE)	10	10	**104** %	10	10	**104** %	**1** %	70 - 130 %	25%
637-92-3	Ethyl *tert*-butyl Ether (ETBE)	10	11	**105** %	10	11	**106** %	**1** %	70 - 130 %	25%
994-05-8	*tert*-Amyl Methyl Ether (TAME)	10	9.6	**96** %	10	9.6	**96** %	**0** %	70 - 130 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
Dibromofluoromethane	10	9	**88** %	10	9	**93** %		70 - 130 %
1,2-Dichloroethane-d_4	10	9	**88** %	10	10	**96** %		70 - 130 %
Toluene-d_8	10	10	**97** %	10	10	**102** %		70 - 130 %
4-Bromofluorobenzene	10	10	**96** %	10	10	**104** %		70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Sample preparation performed by EPA Method 5030B.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM5-4060-W**
Matrix: **Aqueous**

Instrument ID: **MS-5 HP 6890**
Analyzed: **10-28-09 08:26**
Analyst: **LMG**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	0.5
74-87-3	Chloromethane	BRL		ug/L	0.5
75-01-4	Vinyl Chloride	BRL		ug/L	0.5
74-83-9	Bromomethane	BRL		ug/L	0.5
75-00-3	Chloroethane	BRL		ug/L	0.5
75-69-4	Trichlorofluoromethane	BRL		ug/L	0.5
60-29-7	Diethyl Ether	BRL		ug/L	2
75-35-4	1,1-Dichloroethene	BRL		ug/L	0.5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	5
67-64-1	Acetone	BRL		ug/L	10
75-15-0	Carbon Disulfide	BRL		ug/L	5
75-09-2	Methylene Chloride	BRL		ug/L	3
107-13-1	Acrylonitrile	BRL		ug/L	0.5
156-60-5	*trans*-1,2-Dichloroethene	BRL		ug/L	0.5
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	BRL		ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL		ug/L	0.5
594-20-7	2,2-Dichloropropane	BRL		ug/L	0.5
156-59-2	*cis*-1,2-Dichloroethene	BRL		ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL		ug/L	5
74-97-5	Bromochloromethane	BRL		ug/L	0.5
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	5
67-66-3	Chloroform	BRL		ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL		ug/L	0.5
563-58-6	1,1-Dichloropropene	BRL		ug/L	0.5
71-43-2	Benzene	BRL		ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL		ug/L	0.5
79-01-6	Trichloroethene	BRL		ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL		ug/L	0.5
74-95-3	Dibromomethane	BRL		ug/L	0.5
75-27-4	Bromodichloromethane	BRL		ug/L	0.5
123-91-1	1,4-Dioxane	BRL		ug/L	500
10061-01-5	*cis*-1,3-Dichloropropene	BRL		ug/L	0.4
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	5
108-88-3	Toluene	BRL		ug/L	0.5
10061-02-6	*trans*-1,3-Dichloropropene	BRL		ug/L	0.4
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	0.5
127-18-4	Tetrachloroethene	BRL		ug/L	0.5
142-28-9	1,3-Dichloropropane	BRL		ug/L	0.5
591-78-6	2-Hexanone	BRL		ug/L	5
124-48-1	Dibromochloromethane	BRL		ug/L	0.5
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.5
108-90-7	Chlorobenzene	BRL		ug/L	0.5
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	0.5
100-41-4	Ethylbenzene	BRL		ug/L	0.5
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL		ug/L	0.5
95-47-6	*ortho*-Xylene	BRL		ug/L	0.5
100-42-5	Styrene	BRL		ug/L	0.5
75-25-2	Bromoform	BRL		ug/L	0.5

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM5-4060-W**
Matrix: **Aqueous**
Instrument ID: **MS-5 HP 6890**
Analyzed: **10-28-09 08:26**
Analyst: **LMG**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
98-82-8	Isopropylbenzene	BRL		ug/L	0.5
108-86-1	Bromobenzene	BRL		ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	0.5
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	0.5
110-57-6	*trans*-1,4-Dichloro-2-butene	BRL		ug/L	25
103-65-1	*n*-Propylbenzene	BRL		ug/L	0.5
95-49-8	2-Chlorotoluene	BRL		ug/L	0.5
108-67-8	1,3,5-Trimethylbenzene	BRL		ug/L	0.5
106-43-4	4-Chlorotoluene	BRL		ug/L	0.5
98-06-6	*tert*-Butylbenzene	BRL		ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	BRL		ug/L	0.5
135-98-8	*sec*-Butylbenzene	BRL		ug/L	0.5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	0.5
99-87-6	4-Isopropyltoluene	BRL		ug/L	0.5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	0.5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	0.5
104-51-8	*n*-Butylbenzene	BRL		ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	0.5
108-70-3	1,3,5-Trichlorobenzene	BRL		ug/L	0.5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	0.5
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
91-20-3	Naphthalene	BRL		ug/L	0.5
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	0.5
75-65-0	*tert*-Butyl Alcohol (TBA)	BRL		ug/L	20
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	0.5
637-92-3	Ethyl *tert*-butyl Ether (ETBE)	BRL		ug/L	0.5
994-05-8	*tert*-Amyl Methyl Ether (TAME)	BRL		ug/L	0.5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	9	**95** %	70 - 130 %
1,2-Dichloroethane-d_4	10	9	**95** %	70 - 130 %
Toluene-d_8	10	10	**100** %	70 - 130 %
4-Bromofluorobenzene	10	10	**101** %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample preparation performed by EPA Method 5030B.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C (Part 2)**	Instrument ID:	**MS-6 HP 6890**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**SV-2436-F**	Extracted:	**10-29-09 17:30**	Extracted:	**10-29-09 17:30**
Matrix:	**Aqueous**	Analyzed:	**10-30-09 16:23**	Analyzed:	**10-30-09 17:04**
Units:	**ug/L**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
91-20-3	Naphthalene	5.0	4.0	**81** %	5.0	3.8	**76** %	**6** %	40 - 140 %	25%
91-57-6	2-Methylnaphthalene	5.0	4.1	**83** %	5.0	3.9	**78** %	**6** %	40 - 140 %	25%
208-96-8	Acenaphthylene	5.0	4.4	**88** %	5.0	4.2	**83** %	**5** %	40 - 140 %	25%
83-32-9	Acenaphthene	5.0	4.2	**84** %	5.0	4.2	**83** %	**1** %	40 - 140 %	25%
86-73-7	Fluorene	5.0	4.2	**84** %	5.0	4.2	**83** %	**1** %	40 - 140 %	25%
85-01-8	Phenanthrene	5.0	3.8	**76** %	5.0	3.7	**75** %	**2** %	40 - 140 %	25%
120-12-7	Anthracene	5.0	4.2	**83** %	5.0	4.3	**86** %	**3** %	40 - 140 %	25%
206-44-0	Fluoranthene	5.0	4.0	**79** %	5.0	3.9	**79** %	**1** %	40 - 140 %	25%
129-00-0	Pyrene	5.0	3.8	**75** %	5.0	3.7	**74** %	**2** %	40 - 140 %	25%
56-55-3	Benzo[a]anthracene	5.0	3.9	**78** %	5.0	3.9	**79** %	**1** %	40 - 140 %	25%
218-01-9	Chrysene	5.0	3.7	**74** %	5.0	3.8	**76** %	**2** %	40 - 140 %	25%
205-99-2	Benzo[b]fluoranthene	5.0	4.1	**82** %	5.0	4.2	**84** %	**1** %	40 - 140 %	25%
207-08-9	Benzo[k]fluoranthene	5.0	4.0	**80** %	5.0	4.0	**81** %	**1** %	40 - 140 %	25%
50-32-8	Benzo[a]pyrene	5.0	4.0	**79** %	5.0	4.0	**81** %	**3** %	40 - 140 %	25%
193-39-5	Indeno[1,2,3-c,d]pyrene	5.0	4.2	**84** %	5.0	4.2	**85** %	**1** %	40 - 140 %	25%
53-70-3	Dibenzo[a,h]anthracene	5.0	4.0	**79** %	5.0	4.1	**82** %	**4** %	40 - 140 %	25%
191-24-2	Benzo[g,h,i]perylene	5.0	3.9	**78** %	5.0	4.0	**80** %	**3** %	40 - 140 %	25%
87-68-3	Hexachlorobutadiene	5.0	3.9	**78** %	5.0	3.6	**72** %	**8** %	40 - 140 %	25%
118-74-1	Hexachlorobenzene	5.0	4.2	**85** %	5.0	4.3	**85** %	**0** %	40 - 140 %	25%
87-86-5	Pentachlorophenol	5.0	5.2	**103** %	5.0	5.4	**107** %	**4** %	30 - 130 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
2-Fluorophenol	20	11	**54** %	20	11	**53** %		15 - 110 %
Phenol-d5	20	10	**52** %	20	9.9	**49** %		15 - 110 %
Nitrobenzene-d5	10	9.1	**91** %	10	8.9	**89** %		30 - 130 %
2-Fluorobiphenyl	10	8.2	**82** %	10	7.7	**77** %		30 - 130 %
2,4,6-Tribromophenol	20	18	**89** %	20	18	**90** %		15 - 110 %
Terphenyl-d14	10	6.6	**66** %	10	6.6	**66** %		30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Sample extraction performed by EPA Method 3510C.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8270C (Part 2)**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**SV-2436-F**	Extracted:	**10-29-09 17:30**
Matrix:	**Aqueous**	Analyzed:	**10-30-09 17:44**
		Analyst:	**MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/L	0.5
91-57-6	2-Methylnaphthalene	BRL		ug/L	0.5
208-96-8	Acenaphthylene	BRL		ug/L	0.5
83-32-9	Acenaphthene	BRL		ug/L	0.5
86-73-7	Fluorene	BRL		ug/L	0.5
85-01-8	Phenanthrene	BRL		ug/L	0.5
120-12-7	Anthracene	BRL		ug/L	0.5
206-44-0	Fluoranthene	BRL		ug/L	0.5
129-00-0	Pyrene	BRL		ug/L	0.5
56-55-3	Benzo[a]anthracene	BRL		ug/L	0.1
218-01-9	Chrysene	BRL		ug/L	0.1
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	0.1
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	0.1
50-32-8	Benzo[a]pyrene	BRL		ug/L	0.1
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	0.1
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	0.1
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	0.1
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
118-74-1	Hexachlorobenzene	BRL		ug/L	0.5
87-86-5	Pentachlorophenol	BRL		ug/L	1.0

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	11	**57** %	15 - 110 %
Phenol-d5	20	11	**55** %	15 - 110 %
Nitrobenzene-d5	10	9.2	**92** %	30 - 130 %
2-Fluorobiphenyl	10	9.5	**95** %	30 - 130 %
2,4,6-Tribromophenol	20	18	**90** %	15 - 110 %
Terphenyl-d14	10	7.0	**70** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Sample extraction performed by EPA Method 3510C.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C (Part 1)**	Instrument ID:	**MS-3 HP 5890**	Instrument ID:	**MS-3 HP 5890**
QC Batch ID:	**SV-2436-F**	Extracted:	**10-29-09 17:30**	Extracted:	**10-29-09 17:30**
Matrix:	**Aqueous**	Analyzed:	**11-01-09 00:52**	Analyzed:	**11-01-09 01:34**
Units:	**ug/L**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
62-75-9	N-Nitrosodimethylamine	50	29	**58** %	50	26	**52** %	**11** %	40 - 140 %	25%
110-86-1	Pyridine	50	28	**56** %	50	25	**49** %	**14** %	40 - 140 %	25%
108-95-2	Phenol	50	26	**53** %	50	25	**49** %	**7** %	30 - 130 %	25%
62-53-3	Aniline	50	42	**83** %	50	35	**69** %	**19** %	40 - 140 %	25%
111-44-4	Bis(2-chloroethyl) ether	50	38	**76** %	50	36	**72** %	**6** %	40 - 140 %	25%
95-57-8	2-Chlorophenol	50	39	**78** %	50	36	**71** %	**10** %	30 - 130 %	25%
541-73-1	1,3-Dichlorobenzene	50	40	**79** %	50	36	**73** %	**8** %	40 - 140 %	25%
106-46-7	1,4-Dichlorobenzene	50	40	**80** %	50	37	**74** %	**8** %	40 - 140 %	25%
100-51-6	Benzyl Alcohol	50	40	**79** %	50	35	**71** %	**11** %	30 - 130 %	25%
95-50-1	1,2-Dichlorobenzene	50	40	**80** %	50	38	**75** %	**7** %	40 - 140 %	25%
95-48-7	2-Methylphenol	50	42	**83** %	50	36	**72** %	**14** %	30 - 130 %	25%
108-60-1	Bis(2-chloroisopropyl) ether	50	39	**79** %	50	36	**72** %	**9** %	40 - 140 %	25%
106-44-5	4-Methylphenol	50	39	**78** %	50	36	**71** %	**9** %	30 - 130 %	25%
621-64-7	N-Nitrosodi-n-propylamine	50	42	**85** %	50	38	**76** %	**11** %	40 - 140 %	25%
98-86-2	Acetophenone	50	48	**97** %	50	44	**88** %	**10** %	40 - 140 %	25%
67-72-1	Hexachloroethane	50	40	**80** %	50	37	**74** %	**8** %	40 - 140 %	25%
98-95-3	Nitrobenzene	50	41	**81** %	50	38	**75** %	**8** %	40 - 140 %	25%
78-59-1	Isophorone	50	43	**87** %	50	41	**82** %	**5** %	40 - 140 %	25%
88-75-5	2-Nitrophenol	50	43	**86** %	50	41	**82** %	**5** %	30 - 130 %	25%
105-67-9	2,4-Dimethylphenol	50	39	**77** %	50	37	**73** %	**5** %	30 - 130 %	25%
111-91-1	Bis(2-chloroethoxy) methane	50	41	**83** %	50	39	**78** %	**7** %	40 - 140 %	25%
120-83-2	2,4-Dichlorophenol	50	42	**84** %	50	40	**79** %	**7** %	30 - 130 %	25%
120-82-1	1,2,4-Trichlorobenzene	50	40	**81** %	50	39	**78** %	**4** %	40 - 140 %	25%
106-47-8	4-Chloroaniline	50	46	**93** %	50	39	**77** %	**18** %	40 - 140 %	25%
87-68-3	Hexachlorobutadiene	50	40	**80** %	50	39	**78** %	**3** %	40 - 140 %	25%
59-50-7	4-Chloro-3-methylphenol	50	47	**94** %	50	43	**85** %	**9** %	30 - 130 %	25%
77-47-4	Hexachlorocyclopentadiene	50	40	**80** %	50	37	**74** %	**8** %	40 - 140 %	25%
88-06-2	2,4,6-Trichlorophenol	50	46	**92** %	50	44	**87** %	**5** %	30 - 130 %	25%
95-95-4	2,4,5-Trichlorophenol	50	47	**94** %	50	43	**86** %	**9** %	30 - 130 %	25%
91-58-7	2-Chloronaphthalene	50	45	**90** %	50	42	**84** %	**6** %	40 - 140 %	25%
88-74-4	2-Nitroaniline	50	50	**101** %	50	47	**94** %	**7** %	40 - 140 %	25%
100-25-4	1,4-Dinitrobenzene	50	52	**103** %	50	48	**96** %	**7** %	40 - 140 %	25%
131-11-3	Dimethyl phthalate	50	48	**97** %	50	44	**88** %	**9** %	40 - 140 %	25%
99-65-0	1,3-Dinitrobenzene	50	51	**103** %	50	47	**95** %	**8** %	40 - 140 %	25%
606-20-2	2,6-Dinitrotoluene	50	50	**100** %	50	46	**92** %	**8** %	40 - 140 %	25%
528-29-0	1,2-Dinitrobenzene	50	50	**100** %	50	46	**91** %	**10** %	40 - 140 %	25%
99-09-2	3-Nitroaniline	50	51	**101** %	50	45	**91** %	**11** %	40 - 140 %	25%
51-28-5	2,4-Dinitrophenol	50	42	**85** %	50	41	**82** %	**3** %	30 - 130 %	25%
100-02-7	4-Nitrophenol	50	31	**62** %	50	28	**57** %	**8** %	30 - 130 %	25%
132-64-9	Dibenzofuran	50	48	**96** %	50	44	**87** %	**10** %	40 - 140 %	25%
121-14-2	2,4-Dinitrotoluene	50	53	**105** %	50	48	**96** %	**10** %	40 - 140 %	25%
84-66-2	Diethyl phthalate	50	49	**99** %	50	45	**90** %	**9** %	40 - 140 %	25%
7005-72-3	4-Chlorophenyl phenyl ether	50	47	**94** %	50	44	**88** %	**7** %	40 - 140 %	25%
100-01-6	4-Nitroaniline	50	51	**103** %	50	47	**93** %	**10** %	40 - 140 %	25%
534-52-1	4,6-Dinitro-2-methylphenol	50	50	**101** %	50	45	**91** %	**10** %	30 - 130 %	25%
86-30-6	N-Nitrosodiphenylamine †	50	48	**95** %	50	43	**85** %	**11** %	40 - 140 %	25%
122-66-7	1,2-Diphenylhydrazine à	50	49	**98** %	50	45	**89** %	**9** %	40 - 140 %	25%
101-55-3	4-Bromophenyl phenyl ether	50	41	**83** %	50	38	**76** %	**9** %	40 - 140 %	25%

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C (Part 1)**	Instrument ID:	**MS-3 HP 5890**	Instrument ID:	**MS-3 HP 5890**
QC Batch ID:	**SV-2436-F**	Extracted:	**10-29-09 17:30**	Extracted:	**10-29-09 17:30**
Matrix:	**Aqueous**	Analyzed:	**11-01-09 00:52**	Analyzed:	**11-01-09 01:34**
Units:	**ug/L**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
86-74-8	Carbazole	50	50	**101** %	50	46	**92** %	**9** %	40 - 140 %	25%
84-74-2	Di-*n*-butyl phthalate	50	50	**99** %	50	45	**90** %	**10** %	40 - 140 %	25%
85-68-7	Butyl benzyl phthalate	50	49	**97** %	50	44	**89** %	**9** %	40 - 140 %	25%
91-94-1	3,3'-Dichlorobenzidine	50	44	**88** %	50	40	**79** %	**10** %	40 - 140 %	25%
117-81-7	Bis(2-ethylhexyl) phthalate	50	49	**99** %	50	44	**89** %	**11** %	40 - 140 %	25%
117-84-0	Di-*n*-octyl phthalate	50	49	**97** %	50	44	**89** %	**9** %	40 - 140 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
2-Fluorophenol	20	11	**56** %	20	10	**51** %		15 - 110 %
Phenol-d5	20	9.6	**48** %	20	8.8	**44** %		15 - 110 %
Nitrobenzene-d5	10	7.7	**77** %	10	6.0	**60** %		30 - 130 %
2-Fluorobiphenyl	10	8.7	**87** %	10	7.9	**79** %		30 - 130 %
2,4,6-Tribromophenol	20	20	**98** %	20	18	**89** %		15 - 110 %
Terphenyl-d14	10	8.4	**84** %	10	7.6	**76** %		30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Sample extraction performed by EPA Method 3510C.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8270C (Part 1)**
QC Batch ID: **SV-2436-F**
Matrix: **Aqueous**

Instrument ID: **MS-3 HP 5890**
Extracted: **10-29-09 17:30**
Analyzed: **11-01-09 02:15**
Analyst: **MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
62-75-9	N-Nitrosodimethylamine	BRL		ug/L	5
110-86-1	Pyridine	BRL		ug/L	5
108-95-2	Phenol	BRL		ug/L	5
62-53-3	Aniline	BRL		ug/L	5
111-44-4	Bis(2-chloroethyl) ether	BRL		ug/L	5
95-57-8	2-Chlorophenol	BRL		ug/L	5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	5
100-51-6	Benzyl Alcohol	BRL		ug/L	5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	5
95-48-7	2-Methylphenol	BRL		ug/L	5
108-60-1	Bis(2-chloroisopropyl) ether	BRL		ug/L	5
108-39-4/106-44-5	3 and 4-Methylphenol *	BRL		ug/L	5
621-64-7	N-Nitrosodi-n-propylamine	BRL		ug/L	5
98-86-2	Acetophenone	BRL		ug/L	5
67-72-1	Hexachloroethane	BRL		ug/L	5
98-95-3	Nitrobenzene	BRL		ug/L	5
78-59-1	Isophorone	BRL		ug/L	5
88-75-5	2-Nitrophenol	BRL		ug/L	5
105-67-9	2,4-Dimethylphenol	BRL		ug/L	5
111-91-1	Bis(2-chloroethoxy) methane	BRL		ug/L	5
120-83-2	2,4-Dichlorophenol	BRL		ug/L	5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	5
106-47-8	4-Chloroaniline	BRL		ug/L	5
87-68-3	Hexachlorobutadiene	BRL		ug/L	5
59-50-7	4-Chloro-3-methylphenol	BRL		ug/L	5
77-47-4	Hexachlorocyclopentadiene	BRL		ug/L	5
88-06-2	2,4,6-Trichlorophenol	BRL		ug/L	5
95-95-4	2,4,5-Trichlorophenol	BRL		ug/L	5
91-58-7	2-Chloronaphthalene	BRL		ug/L	5
88-74-4	2-Nitroaniline	BRL		ug/L	5
100-25-4	1,4-Dinitrobenzene	BRL		ug/L	5
131-11-3	Dimethyl phthalate	BRL		ug/L	5
99-65-0	1,3-Dinitrobenzene	BRL		ug/L	5
606-20-2	2,6-Dinitrotoluene	BRL		ug/L	5
528-29-0	1,2-Dinitrobenzene	BRL		ug/L	5
99-09-2	3-Nitroaniline	BRL		ug/L	5
51-28-5	2,4-Dinitrophenol	BRL		ug/L	5
100-02-7	4-Nitrophenol	BRL		ug/L	5
132-64-9	Dibenzofuran	BRL		ug/L	5
121-14-2	2,4-Dinitrotoluene	BRL		ug/L	5
84-66-2	Diethyl phthalate	BRL		ug/L	5
7005-72-3	4-Chlorophenyl phenyl ether	BRL		ug/L	5
100-01-6	4-Nitroaniline	BRL		ug/L	5
534-52-1	4,6-Dinitro-2-methylphenol	BRL		ug/L	5

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8270C (Part 1)**	Instrument ID:	**MS-3 HP 5890**
QC Batch ID:	**SV-2436-F**	Extracted:	**10-29-09 17:30**
Matrix:	**Aqueous**	Analyzed:	**11-01-09 02:15**
		Analyst:	**MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
86-30-6	N-Nitrosodiphenylamine †	BRL		ug/L	5
122-66-7	1,2-Diphenylhydrazine ◊	BRL		ug/L	5
101-55-3	4-Bromophenyl phenyl ether	BRL		ug/L	5
86-74-8	Carbazole	BRL		ug/L	5
84-74-2	Di-*n*-butyl phthalate	BRL		ug/L	5
85-68-7	Butyl benzyl phthalate	BRL		ug/L	5
91-94-1	3,3'-Dichlorobenzidine	BRL		ug/L	5
117-81-7	Bis(2-ethylhexyl) phthalate	BRL		ug/L	5
117-84-0	Di-*n*-octyl phthalate	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	10	**51** %	15 - 110 %
Phenol-d5	20	8	**41** %	15 - 110 %
Nitrobenzene-d5	10	8	**80** %	30 - 130 %
2-Fluorobiphenyl	10	8	**80** %	30 - 130 %
2,4,6-Tribromophenol	20	16	**78** %	15 - 110 %
Terphenyl-d14	10	7	**74** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

* Analyzed as 4-Methylphenol.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states.
Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT

Department of Health Services, PH-0586 — Potable Water, Wastewater, Solid Waste and Soil
http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/Out State.pdf

MASSACHUSETTS

Department of Environmental Protection, M-MA-103 — Potable Water and Non-Potable Water
http://public.dep.state.ma.us/labcert/labcert.aspx

Department of Labor,
Division of Occupational Safety, AA000195 — Asbestos Analytical Services, Class A
http://www.mass.gov/dos/forms/la-rpt list aa.pdf

NEW HAMPSHIRE

Department of Environmental Services, 202708 — Potable Water, Non-Potable Water, Solid and Chemical Materials
http://www4.egov.nh.gov/DES/NHELAP

NEW YORK

Department of Health, 11754 — Potable Water, Non-Potable Water, Solid and Hazardous Waste
http://www.wadsworth.org/labcert/elap/comm.html

RHODE ISLAND

Department of Health,
Division of Laboratories, LAO00054 — Potable and Non-Potable Water Microbiology, Organic and Inorganic Chemistry
http://www.health.ri.gov/labs/outofstatelabs.pdf

U.S. DEPARTMENT OF AGRICULTURE

USDA, Soil Permit, S-53921 — Foreign soil import permit

VERMONT

Department of Health, VT-87643 — Potable Water
http://healthvermont.gov/enviro/ph lab/water test.aspx#cert

GROUNDWATER ANALYTICAL

Certifications and Approvals

MASSACHUSETTS — **Department of Environmental Protection, M-MA-103**

Groundwater Analytical maintains MassDEP environmental laboratory certification for only the methods and analytes listed below. Analyses for certified analytes are conducted in accordance with MassDEP certification standards, except as may be specifically noted in the project narrative.

Potable Water (Drinking Water)

Analyte	Method
1,2-Dibromo-3-Chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1
Alkalinity, Total	SM 2320-B
Antimony	EPA 200.8
Arsenic	EPA 200.8
Barium	EPA 200.7
Barium	EPA 200.8
Beryllium	EPA 200.7
Beryllium	EPA 200.8
Cadmium	EPA 200.7
Cadmium	EPA 200.8
Calcium	EPA 200.7
Chlorine, Residual Free	SM 4500-CL-G
Chromium	EPA 200.7
Copper	EPA 200.7
Copper	EPA 200.8
Cyanide, Total	Lachat 10-204-00-1-A
E. Coli (Treatment and Distribution)	EC-MUG SM 9221-F
E. Coli (Treatment and Distribution)	Enz. Sub. SM 9223
E. Coli (Treatment and Distribution)	NA-MUG SM 9222-G
Fecal Coliform (Source Water)	MF SM 9222-D
Fluoride	EPA 300.0
Fluoride	SM 4500-F-C
Heterotrophic Plate Count	SM 9215-B
Lead	EPA 200.8
Mercury	EPA 245.1
Nickel	EPA 200.7
Nickel	EPA 200.8
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Nitrite-N	EPA 300.0
Nitrite-N	Lachat 10-107-04-1-C
pH	SM 4500-H-B
Selenium	EPA 200.8
Silver	EPA 200.7
Silver	EPA 200.8
Sodium	EPA 200.7
Sulfate	EPA 300.0
Thallium	EPA 200.8
Total Coliform (Treatment and Distribution)	Enz. Sub. SM 9223
Total Coliform (Treatment and Distribution)	MF SM 9222-B
Total Dissolved Solids	SM 2540-C
Trihalomethanes	EPA 524.2
Turbidity	SM 2130-B
Volatile Organic Compounds	EPA 524.2

Non-Potable Water (Wastewater)

Analyte	Method
Aldrin	EPA 608
Alkalinity, Total	SM 2320-B
Alpha-BHC	EPA 608
Aluminum	EPA 200.7
Aluminum	EPA 200.8

Non-Potable Water (Wastewater)

Analyte	Method
Ammonia-N	Lachat 10-107-06-1-B
Antimony	EPA 200.7
Antimony	EPA 200.8
Arsenic	EPA 200.7
Arsenic	EPA 200.8
Beryllium	EPA 200.7
Beryllium	EPA 200.8
Beta-BHC	EPA 608
Biochemical Oxygen Demand	SM 5210-B
Cadmium	EPA 200.7
Cadmium	EPA 200.8
Calcium	EPA 200.7
Chemical Oxygen Demand	SM 5220-D
Chlordane	EPA 608
Chloride	EPA 300.0
Chlorine, Total Residual	SM 4500-CL-G
Chromium	EPA 200.7
Chromium	EPA 200.8
Cobalt	EPA 200.7
Cobalt	EPA 200.8
Copper	EPA 200.7
Copper	EPA 200.8
Cyanide, Total	Lachat 10-204-00-1-A
DDD	EPA 608
DDE	EPA 608
DDT	EPA 608
Delta-BHC	EPA 608
Dieldrin	EPA 608
Endosulfan I	EPA 608
Endosulfan II	EPA 608
Endosulfan Sulfate	EPA 608
Endrin	EPA 608
Endrin Aldehyde	EPA 608
Fluoride	EPA 300.0
Gamma-BHC	EPA 608
Hardness (CaCO3), Total	EPA 200.7
Hardness (CaCO3), Total	SM 2340-B
Heptachlor	EPA 608
Heptachlor Epoxide	EPA 608
Iron	EPA 200.7
Kjeldahl-N	Lachat 10-107-06-02-D
Lead	EPA 200.7
Magnesium	EPA 200.7
Manganese	EPA 200.7
Manganese	EPA 200.8
Mercury	EPA 245.1
Molybdenum	EPA 200.7
Molybdenum	EPA 200.8
Nickel	EPA 200.7
Nickel	EPA 200.8
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Non-Filterable Residue	SM 2540-D
Oil and Grease	EPA 1664

GROUNDWATER ANALYTICAL

Certifications and Approvals

MASSACHUSETTS — **Department of Environmental Protection, M-MA-103**

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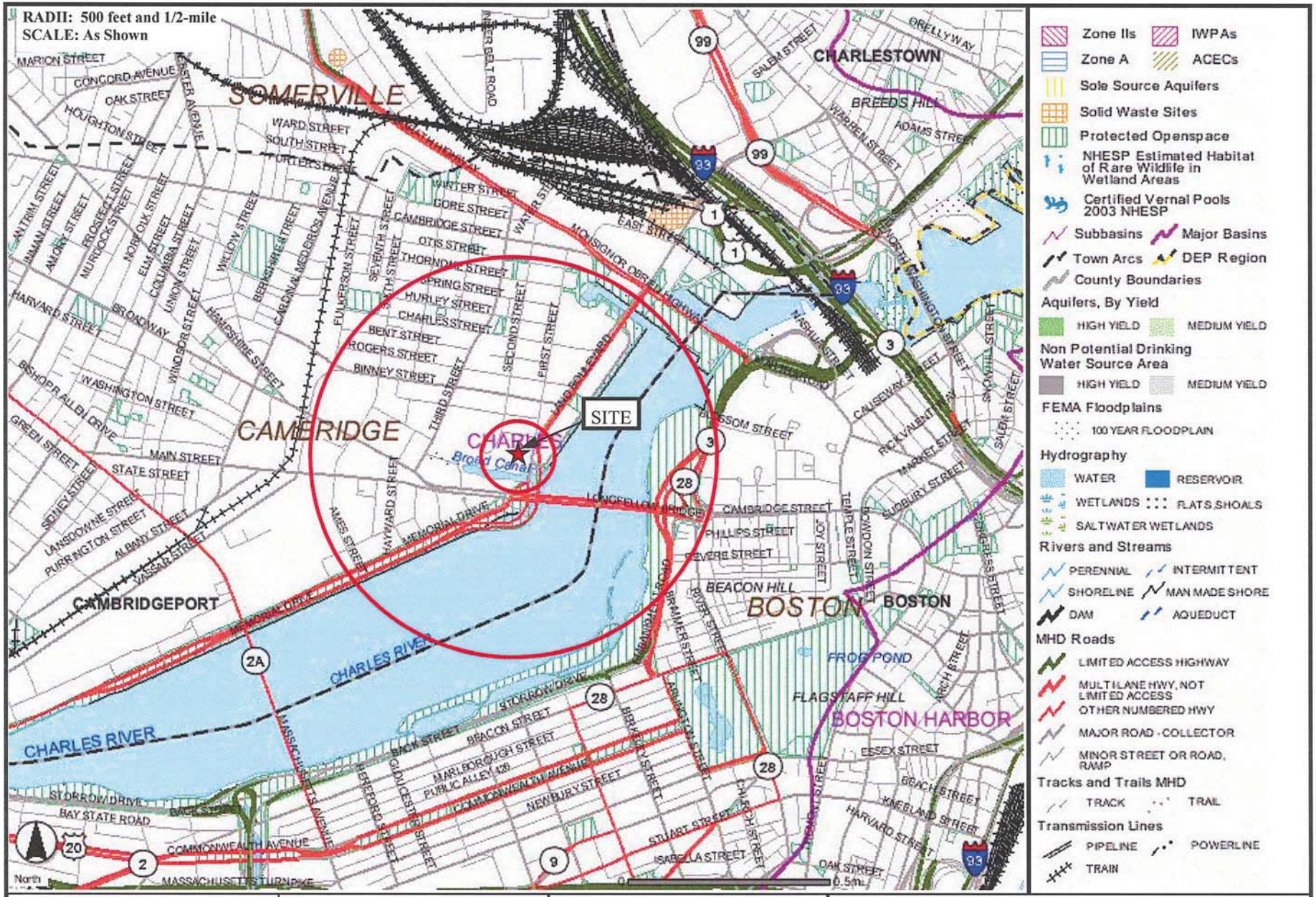
Non-Potable Water (Wastewater)

Analyte	Method
Orthophosphate	Lachat 10-115-01-1-A
pH	SM 4500-H-B
Phenolics, Total	EPA 420.4
Phenolics, Total	Lachat 10-210-00-1-B
Phosphorus, Total	Lachat 10-115-01-1-C
Phosphorus, Total	SM 4500-P-B,E
Polychlorinated Biphenyls (Oil)	EPA 600/4-81-045
Polychlorinated Biphenyls (Water)	EPA 608
Potassium	EPA 200.7
Selenium	EPA 200.7
Selenium	EPA 200.8
Silver	EPA 200.7
Sodium	EPA 200.7
Specific Conductivity	SM 2510-B
Strontium	EPA 200.7
Sulfate	EPA 300.0
SVOC-Acid Extractables	EPA 625
SVOC-Base/Neutral Extractables	EPA 625
Thallium	EPA 200.7
Thallium	EPA 200.8
Titanium	EPA 200.7
Total Dissolved Solids	SM 2540-C
Total Organic Carbon	SM 5310-B
Toxaphene	EPA 608
Vanadium	EPA 200.7
Vanadium	EPA 200.8
Volatile Aromatics	EPA 602
Volatile Aromatics	EPA 624
Volatile Halocarbons	EPA 624
Zinc	EPA 200.7
Zinc	EPA 200.8

Attachment C

Areas of Critical Environmental Concern Documentation

Lightship Engineering reviewed the most recent listing of Areas of Critical Environmental Concern ("ACEC") published in June 2009 by the Massachusetts Department of Conservation and Recreation. As indicated on the following documentation, there are no ACEC in the vicinity of the Site or the discharge to the Broad Canal/ Charles River.



CLIENT	PROJECT
Mirant Kendall, LLC 265 First Street Cambridge, Massachusetts	MWRA Project 265 First Street Cambridge, Massachusetts

Source: MassGIS Online Viewer

FIGURE
MassGIS Map

LIGHTSHIP ENGINEERING
ENVIRONMENTAL & LAND-USE CONSULTANTS
39 Industrial Park Road • Unit C • Plymouth, Massachusetts 02360 • (508) 830-3344 • Fax: (508) 830-3360

Attachment D

Remediation Activities in Vicinity of Site

Lightship Engineering reviewed records from the Massachusetts Department of Environmental Protection (MassDEP) to identify any known remediation sites in the vicinity of the work area.

RTNs 3-15754 and 3-15243 – Former Manufactured Gas Plant and Release of No. 6 Fuel Oil

A release of oil and/or hazardous material ("OHM") was detected in 1997 at the Site in connection with the former manufactured gas plant ("MGP") formerly located at the Site and the release of approximately 5,000-gallons of No. 6 fuel oil at the Site. An Activity and Use Limitation has been implemented at the Site in connection with the releases. Additional information is available in the *Phase I Supplemental Site Investigation Report in Support of Class B-2 RAO for RTN 3-15754 Former MGP and Tar Processing Disposal Site and Class A-3 RAO for RTN 3-15243 No. 6 Fuel Oil Disposal Site* submitted to the Commonwealth of Massachusetts Department of Environmental Protection ("DEP") in 1998.

RTN 3-00052 – Commonwealth Electric – Jet A Fuel

A release of Jet A fuel detected in October 1985 potentially associated with the overfill of three 30,000-gallon Jet Fuel USTs. Additional information is available in the Class A-2 Response Action Outcome ("RAO") submitted to the Commonwealth of Massachusetts Department of Environmental Protection ("DEP") in July 2000.

RTN 3-20386 – Mirant Kendall – Sulfuric Acid

A release of 5 to 20 gallons of sulfuric acid was observed in February 2001. The release occurred adjacent to the sulfuric acid above-ground storage tank ("AST") located north of the main plant building along the property line. Additional information is available in the Class A-1 RAO submitted to DEP in April 2001.

RTN 3-23732 – Mirant Kendall – No. 6 Fuel Oil

Release of approximately 20 to 30 gallons of No. 6 fuel oil in April 2004 associated with a tanker truck off-loading fuel to the No. 35 AST. The responsible party for this release was Truck Service. The release was limited to the paved area immediately adjacent to the pump house. A Class A-1 RAO was submitted to DEP in February 2005.

Attachment D – Continued

Remediation Activities in Vicinity of Site

RTN 3-26398 – Mirant Kendall – Sodium Hydroxide
On November 20, 2006, a release of approximately 300 gallons of Optisperse HP3100, a sodium hydroxide-based boiler treatment chemical (7.6 percent NaOH), occurred in the Heat Recovery Steam Generator ("HRSG") chemical storage room at the Site. The release of Optisperse resulted in the release of approximately 248 pounds of NaOH to the environment. A Class A-2 RAO was submitted to DEP in September 2007.

RTN 3-27153 – Mirant Kendall – Lube Oil
In October 2007, NAPL identified as lube oil was detected in MW-11 at a thickness of up to 0.6 feet. The presence of lube oil indicated a new release condition and was reported to the DEP on October 5, 2007. The release is an ongoing Immediate Response Action.

Site Information			
Site Number:	**3-0015243**	Category:	TWO HR
Site Name:	KENDALL STATION	Release Type:	RAO
Address:	265 FIRST ST	Current date:	11/27/1998
Town:	CAMBRIDGE	Phase:	
Zipcode:	02142-0000	RAO class:	A3
Official notification date:	6/25/1997	Location type:	INDUSTRIAL
Initial status date:	6/25/1998	Source:	AST, PIPE

Response Action Information	
Response Action Type:	RAO - Response Action Outcome - RAO
Status:	FEECRD - Fee Not Required - Fee Credited - TFS Use Only
Submittal Date:	**12/12/2003**
RAO class:	A3
Activity & Use Limitation:	NOTICE

Response Action Information	
Response Action Type:	AUL - Activity and Use Limitation
Status:	LEGNOT - Legal Notice Published
Submittal Date:	**5/14/2003**
RAO class:	
Activity & Use Limitation:	

Response Action Information	
Response Action Type:	IRA - Immediate Response Action
Status:	CSRCVD - Completion Statement Received
Submittal Date:	**9/2/1997**
RAO class:	
Activity & Use Limitation:	

Response Action Information	
Response Action Type:	RNF - Release Notification Form Received
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	**7/17/1997**
RAO class:	
Activity & Use Limitation:	

Response Action Information	
Response Action Type:	REL - Potential Release or Threat of Release
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	**6/25/1997**
RAO class:	
Activity & Use Limitation:	

Chemicals		
Chemical	**Amount**	**Units**
FUEL OIL #6	3000	GAL
FUEL OIL #6	5000	GAL

LSPs	
LSP#	**Name**
4078	PIERDINOCK, MICHAEL J
3497	SIMPSON, DANA A

RAO Detail			
Class	**Method**	**GW Category**	**Soil Category**
A3	3	2	3

Location

Site Information			
Site Number:	**3-0015754**	Category:	120 DY
Site Name:	CAMBRIDGE ELECTRIC LIGHT CO	Release Type:	RAO
Address:	265 FIRST ST	Current date:	11/27/1998
Town:	CAMBRIDGE	Phase:	
Zipcode:		RAO class:	B2
Official notification date:	11/20/1997	Location type:	
Initial status date:	11/20/1998	Source:	

Response Action Information	
Response Action Type:	AUL - Activity and Use Limitation
Status:	LEGNOT - Legal Notice Published
Submittal Date:	**5/14/2003**
RAO class:	
Activity & Use Limitation:	

Response Action Information	
Response Action Type:	RAO - Response Action Outcome - RAO
Status:	TSAUD - Level I - Technical Screen Audit
Submittal Date:	**10/10/2002**
RAO class:	B2
Activity & Use Limitation:	NOTICE

Response Action Information	
Response Action Type:	REL - Potential Release or Threat of Release
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	**11/20/1997**
RAO class:	
Activity & Use Limitation:	

Response Action Information	
Response Action Type:	RNF - Release Notification Form Received
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	**11/20/1997**
RAO class:	
Activity & Use Limitation:	

Chemicals		
Chemical	**Amount**	**Units**
BENZO(K)FLUORANTHENE	11	MG/KG
BENZO[A]ANTHRACENE	15	MG/KG
BENZO[A]PYRENE	16	MG/KG
BENZO[B]FLUORANTHENE	16	MG/KG
CHRYSENE	18	MG/KG
CYANIDE	190	MG/KG
DIBENZ[A,H]ANTHRACENE	17	MG/KG
INDENO(1,2,3-CD)PYRENE	7.5	MG/KG
TPH	7600	MG/KG

LSPs	
LSP#	**Name**
4078	PIERDINOCK, MICHAEL J

RAO Detail			
Class	**Method**	**GW Category**	**Soil Category**
B2	3	2	3

Location

Site Information			
Site Number:	3-0000052	Category:	NONE
Site Name:	COMMONWEALTH ELECTRIC	Release Type:	RAO
Address:	265 FIRST ST	Current date:	7/21/2000
Town:	CAMBRIDGE	Phase:	PHASE II
Zipcode:	02138	RAO class:	A2
Official notification date:	1/15/1990	Location type:	
Initial status date:	8/2/1996	Source:	

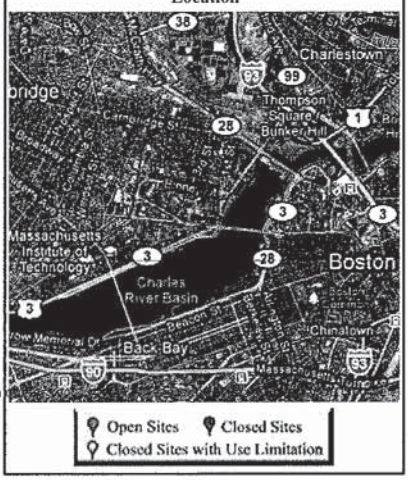
Response Action Information	
Response Action Type:	IRA - Immediate Response Action
Status:	CSRCVD - Completion Statement Received
Submittal Date:	**7/21/2000**
RAO class:	
Activity & Use Limitation:	
Response Action Information	
Response Action Type:	RAO - Response Action Outcome - RAO
Status:	RAORCD - RAO Statement Received
Submittal Date:	**7/21/2000**
RAO class:	A2
Activity & Use Limitation:	NONE
Response Action Information	
Response Action Type:	PHASEI - Phase 1
Status:	CSRCVD - Completion Statement Received
Submittal Date:	**8/2/1996**
RAO class:	
Activity & Use Limitation:	
Response Action Information	
Response Action Type:	TCLASS - Tier Classification
Status:	TIERII - Tier 2 Classification
Submittal Date:	**8/2/1996**
RAO class:	
Activity & Use Limitation:	
Response Action Information	
Response Action Type:	REL - Potential Release or Threat of Release
Status:	TCTRNS - Tier Classified Transition Sites
Submittal Date:	**1/15/1990**
RAO class:	
Activity & Use Limitation:	

Chemicals		
Chemical	**Amount**	**Units**
UNKNOWN		

RAO Detail			
Class	**Method**	**GW Category**	**Soil Category**
A2	1	2	1

Tier Classification Detail							
NRS Totals	**II**	**III**	**IV**	**V**	**VI**	**Zone 2**	**Imminent Hazard**
182	60	72	20	30	0	N	N

Location



Site Information			
Site Number:	3-0027153	Category:	72 HR
Site Name:	MW-11 LUBRICATION OIL RELEASE	Release Type:	TIERII
Address:	265 FIRST ST	Current date:	10/6/2008
Town:	CAMBRIDGE	Phase:	PHASE II
Zipcode:	02142-0000	RAO class:	
Official notification date:	10/5/2007	Location type:	INDUSTRIAL
Initial status date:	10/5/2008	Source:	SITE, SUSPECTD, COMPRESSR, UNKNOWN
Click Here for File Viewer			

Response Action Information	
Response Action Type:	IRA - Immediate Response Action
Status:	RMRINT - RMR Interim Report Received
Submittal Date:	**7/31/2009**
RAO class:	
Activity & Use Limitation:	
Response Action Information	
Response Action Type:	TCLASS - Tier Classification
Status:	LEGNOT - Legal Notice Published
Submittal Date:	**10/10/2008**
RAO class:	
Activity & Use Limitation:	
Response Action Information	
Response Action Type:	PHASEI - Phase 1
Status:	CSRCVD - Completion Statement Received
Submittal Date:	**10/6/2008**
RAO class:	
Activity & Use Limitation:	
Response Action Information	
Response Action Type:	PHASII - Phase 2
Status:	SOW - Scope of Work Received
Submittal Date:	**10/6/2008**
RAO class:	
Activity & Use Limitation:	
Response Action Information	
Response Action Type:	RNF - Release Notification Form Received
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	**12/4/2007**
RAO class:	
Activity & Use Limitation:	
Response Action Information	
Response Action Type:	REL - Potential Release or Threat of Release
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	**10/5/2007**
RAO class:	
Activity & Use Limitation:	

Chemicals		
Chemical	**Amount**	**Units**
LUBRICATION OIL	4.8	INCH
PETROLEUM NOS	7.72	INCH

LSPs	
LSP#	**Name**
2509	ROTH, AMY A

Tier Classification Detail							
NRS Totals	**II**	**III**	**IV**	**V**	**VI**	**Zone 2**	**Imminent Hazard**
262	35	117	20	90	0	N	N

Site Information			
Site Number:	3-0020386	Category:	TWO HR
Site Name:	NO LOCATION AID	Release Type:	RAO
Address:	265 FIRST ST	Current date:	4/12/2001
Town:	CAMBRIDGE	Phase:	
Zipcode:	02142-0000	RAO class:	A1
Official notification date:	2/12/2001	Location type:	COMMERCIAL
Initial status date:	2/12/2002	Source:	AST, PIPE

Response Action Information	
Response Action Type:	RNF - Release Notification Form Received
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	4/12/2001
RAO class:	
Activity & Use Limitation:	

Response Action Information	
Response Action Type:	IRA - Immediate Response Action
Status:	CSRCVD - Completion Statement Received
Submittal Date:	4/12/2001
RAO class:	
Activity & Use Limitation:	

Response Action Information	
Response Action Type:	RAO - Response Action Outcome - RAO
Status:	RAORCD - RAO Statement Received
Submittal Date:	4/12/2001
RAO class:	A1
Activity & Use Limitation:	NONE

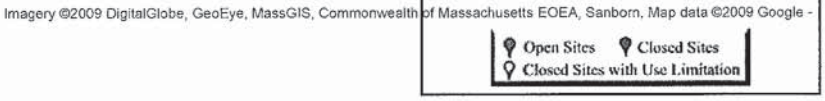
Response Action Information	
Response Action Type:	REL - Potential Release or Threat of Release
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	2/12/2001
RAO class:	
Activity & Use Limitation:	

Chemicals		
Chemical	Amount	Units
SULFURIC ACID	5	GAL
SULFURIC ACID	20	GAL

LSPs	
LSP#	Name
4078	PIERDINOCK, MICHAEL J

RAO Detail			
Class	Method	GW Category	Soil Category
A1	N	2	1

Location



Open Sites Closed Sites
Closed Sites with Use Limitation

Site Information			
Site Number:	3-0023732	Category:	TWO HR
Site Name:	MIRANT KENDALL GENERATING FACILITY	Release Type:	RAO
Address:	265 FIRST ST	Current date:	2/8/2005
Town:	CAMBRIDGE	Phase:	
Zipcode:	02142-1214	RAO class:	A1
Official notification date:	9/3/2004	Location type:	COMMERCIAL, INDUSTRIAL
Initial status date:	9/3/2005	Source:	PIPE, TANKER

Response Action Information	
Response Action Type:	RAO - Response Action Outcome - RAO
Status:	FEEREC - Fee Received - TFS Use Only
Submittal Date:	**9/22/2005**
RAO class:	A1
Activity & Use Limitation:	NONE
Response Action Information	
Response Action Type:	RNF - Release Notification Form Received
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	**2/8/2005**
RAO class:	
Activity & Use Limitation:	
Response Action Information	
Response Action Type:	IRA - Immediate Response Action
Status:	APORAL - Oral Approval of Plan or Action
Submittal Date:	**4/3/2004**
RAO class:	
Activity & Use Limitation:	
Response Action Information	
Response Action Type:	REL - Potential Release or Threat of Release
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	**4/3/2004**
RAO class:	
Activity & Use Limitation:	

Chemicals

Chemical	Amount	Units
#6 FUEL OIL	100	GAL
FUEL OIL #6	25	GAL

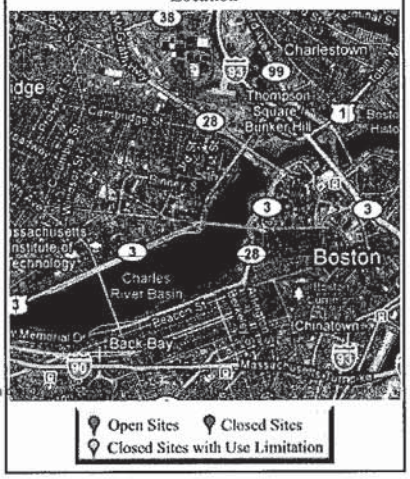
LSPs

LSP#	Name
N/A	PATTERSON, JOHN H

RAO Detail

Class	Method	GW Category	Soil Category
A1	N		3

Location



Site Information			
Site Number:	3-0026398	Category:	TWO HR
Site Name:	MIRANT KENDALL LLC	Release Type:	RAO
Address:	265 FIRST ST	Current date:	9/21/2007
Town:	CAMBRIDGE	Phase:	
Zipcode:	02142-1214	RAO class:	A2
Official notification date:	11/20/2006	Location type:	INDUSTRIAL
Initial status date:	11/20/2007	Source:	PIPE, SYSTEM, TREATMT, WASTE

Response Action Information	
Response Action Type:	RAO - Response Action Outcome - RAO
Status:	TSAUD - Level I - Technical Screen Audit
Submittal Date:	**6/2/2008**
RAO class:	A2
Activity & Use Limitation:	NONE
Response Action Information	
Response Action Type:	IRA - Immediate Response Action
Status:	CSRCVD - Completion Statement Received
Submittal Date:	**9/21/2007**
RAO class:	
Activity & Use Limitation:	
Response Action Information	
Response Action Type:	RNF - Release Notification Form Received
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	**1/22/2007**
RAO class:	
Activity & Use Limitation:	
Response Action Information	
Response Action Type:	REL - Potential Release or Threat of Release
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	**11/20/2006**
RAO class:	
Activity & Use Limitation:	

Chemicals

Chemical	Amount	Units
SODIUM HYDROXIDE	140	LBS
SODIUM HYDROXIDE	2700	LBS

LSPs

LSP#	Name
2075	CONDON, TIMOTHY F
6786	NICKERSON, TODD W

RAO Detail

Class	Method	GW Category	Soil Category
A2	3	2	3

Location

Attachment E

Endangered and Threatened Species Documentation

Lightship Engineering reviewed federal listings of endangered and threatened species published by the U.S. Fish and Wildlife Service. No records exist for the vicinity of the Site or discharge area. In addition, Lightship Engineering reviewed the Massachusetts Division of Fisheries and Wildlife list for Massachusetts, and the city of Cambridge. No records exist for the vicinity of the Site or discharge area.

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 (***Nicrophorus americanus*** (/speciesProfile/profile/speciesProfile.action?spcode=I028))
E	Butterfly, Karner blue (***Lycaeides melissa samuelis*** (/speciesProfile/profile/speciesProfile.action?spcode=I00F))
E	Curlew, Eskimo (***Numenius borealis*** (/speciesProfile/profile/speciesProfile.action?spcode=B01A))
T	Plover, piping except Great Lakes watershed (***Charadrius melodus*** (/speciesProfile/profile/speciesProfile.action?spcode=B079))
E	Plymouth Red-Bellied Turtle (***Pseudemys rubriventris bangsi*** (/speciesProfile/profile/speciesProfile.action?spcode=C021))
E	Puma (=cougar), eastern (***Puma (=Felis) concolor couguar*** (/speciesProfile/profile/speciesProfile.action?spcode=A046))
E	Sea turtle, hawksbill (***Eretmochelys imbricata*** (/speciesProfile/profile/speciesProfile.action?spcode=C00E))
E	Sea turtle, Kemp's ridley (***Lepidochelys kempii*** (/speciesProfile/profile/speciesProfile.action?spcode=C00O))
E	Sea turtle, leatherback (***Dermochelys coriacea*** (/speciesProfile/profile/speciesProfile.action?spcode=C00F))
T	Sea turtle, loggerhead (***Caretta caretta*** (/speciesProfile/profile/speciesProfile.action?spcode=C00U))
E	Sturgeon, shortnose (***Acipenser brevirostrum*** (/speciesProfile/profile/speciesProfile.action?spcode=E00B))
E	Tern, roseate northeast U.S. nesting pop. (***Sterna dougallii dougallii*** (/speciesProfile/profile/speciesProfile.action?spcode=B07O))

Status (javascript:launch('/tess_public/html/db-status.html'))	Species/Listing Name
T	Tiger beetle, northeastern beach (***Cicindela dorsalis dorsalis*** (/speciesProfile/profile/speciesProfile.action?spcode=I02C))
T	Tiger beetle, Puritan (***Cicindela puritana*** (/speciesProfile/profile/speciesProfile.action?spcode=I02D))
T	Turtle, bog (=Muhlenberg) northern (***Clemmys muhlenbergii*** (/speciesProfile/profile/speciesProfile.action?spcode=C048))
E	Wedgemussel, dwarf (***Alasmidonta heterodon*** (/speciesProfile/profile/speciesProfile.action?spcode=F029))
E	Whale, blue (***Balaenoptera musculus*** (/speciesProfile/profile/speciesProfile.action?spcode=A02M))
E	Whale, finback (***Balaenoptera physalus*** (/speciesProfile/profile/speciesProfile.action?spcode=A02O))
E	Whale, humpback (***Megaptera novaeangliae*** (/speciesProfile/profile/speciesProfile.action?spcode=A02Q))
E	Whale, right (***Balaena glacialis (incl. australis)*** (/speciesProfile/profile/speciesProfile.action?spcode=A02R))
E	Whale, Sei (***Balaenoptera borealis*** (/speciesProfile/profile/speciesProfile.action?spcode=A02S))
E	Wolf, gray Lower 48 States, except where delisted and where EXPN. Mexico. (***Canis lupus*** (/speciesProfile/profile/speciesProfile.action?spcode=A00D))

Plants -- 5 listings

Status (javascript:launch('/tess_public/html/db-status.html'))	Species/Listing Name
T	Amaranth, seabeach (***Amaranthus pumilus*** (/speciesProfile/profile/speciesProfile.action?spcode=Q2MZ))
E	Bulrush, Northeastern (***Scirpus ancistrochaetus*** (/speciesProfile/profile/speciesProfile.action?spcode=Q21H))
E	Chaffseed, American (***Schwalbea americana*** (/speciesProfile/profile/speciesProfile.action?spcode=Q2I4))
E	Gerardia, sandplain (***Agalinis acuta*** (/speciesProfile/profile/speciesProfile.action?spcode=Q24K))
T	Pogonia, small whorled (***Isotria medeoloides*** (/speciesProfile/profile/speciesProfile.action?spcode=Q1XL))

Last updated: November 4, 2009

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Massachusetts List of Endangered, Threatened and Special Concern Species

As published in the Code of Massachusetts Regulations
August 8, 2008

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List of Rare Species in Massachusetts

VERTEBRATES
INVERTEBRATES
PLANTS

To access a species fact sheet click on the "Common Name".
Please note that some species do not have a fact sheet available at this time.

Questions/Comments to
natural.heritage@state.ma.us

Updated: 09/21/2009

VERTEBRATES

Common Name	Scientific Name	MA Status	Fed Status	Notes
Fish				
American Brook Lamprey	*Lampetra appendix*	T		
Shortnose Sturgeon	*Acipenser brevirostrum*	E	E	
Atlantic Sturgeon	*Acipenser oxyrinchus*	E		
Lake Chub	*Couesius plumbeus*	E		
Eastern Silvery Minnow	*Hybognathus regius*	SC		
Bridle Shiner	*Notropis bifrenatus*	SC		
Northern Redbelly Dace	*Phoxinus eos*	E		
Longnose Sucker	*Catostomus catostomus*	SC		
Burbot	*Lota lota*	SC		
Threespine Stickleback	*Gasterosteus aculeatus*	T		1
Amphibians				
Jefferson Salamander	*Ambystoma jeffersonianum*	SC		2

Blue-Spotted Salamander	*Ambystoma laterale*	SC		3
Marbled Salamander	*Ambystoma opacum*	T		
Eastern Spadefoot	*Scaphiopus holbrookii*	T		
Reptiles				
Loggerhead Seaturtle	*Caretta caretta*	T	T	
Green Seaturtle	*Chelonia mydas*	T	T	
Hawksbill Seaturtle	*Eretmochelys imbricata*	E	E	
Kemp's Ridley Seaturtle	*Lepidochelys kempii*	E	E	
Leatherback Seaturtle	*Dermochelys coriacea*	E	E	
Wood Turtle	*Glyptemys insculpta*	SC		
Bog Turtle	*Glyptemys muhlenbergii*	E	T	
Blanding's Turtle	*Emydoidea blandingii*	T		
Diamond-backed Terrapin	*Malaclemys terrapin*	T		
Northern Red-bellied Cooter	*Pseudemys rubriventris*	E	E	4
Eastern Box Turtle	*Terrapene carolina*	SC		
Eastern Wormsnake	*Carphophis amoenus*	T		
Eastern Ratsnake	*Pantherophis alleghaniensis*	E		
Copperhead	*Agkistrodon contortrix*	E		
Timber Rattlesnake	*Crotalus horridus*	E		
Birds				
Common Loon	*Gavia immer*	SC		
Pied-Billed Grebe	*Podilymbus podiceps*	E		
Leach's Storm-Petrel	*Oceanodroma leucorhoa*	E		
American Bittern	*Botaurus lentiginosus*	E		
Least Bittern	*Ixobrychus exilis*	E		
Bald Eagle	*Haliaeetus leucocephalus*	E		
Northern Harrier	*Circus cyaneus*	T		
Sharp-Shinned Hawk	*Accipiter striatus*	SC		
Peregrine Falcon	*Falco peregrinus*	E		
King Rail	*Rallus elegans*	T		
Common Moorhen	*Gallinula chloropus*	SC		
Piping Plover	*Charadrius melodus*	T	T	
Upland Sandpiper	*Bartramia longicauda*	E		
Roseate Tern	*Sterna dougallii*	E	E	
Common Tern	*Sterna hirundo*	SC		
Arctic Tern	*Sterna paradisaea*	SC		
Least Tern	*Sternula antillarum*	SC		

Barn Owl	*Tyto alba*	SC	
Long-Eared Owl	*Asio otus*	SC	
Short-Eared Owl	*Asio flammeus*	E	
Sedge Wren	*Cistothorus platensis*	E	
Golden-Winged Warbler	*Vermivora chrysoptera*	E	
Northern Parula	*Parula americana*	T	
Blackpoll Warbler	*Dendroica striata*	SC	
Mourning Warbler	*Oporornis philadelphia*	SC	
Vesper Sparrow	*Pooecetes gramineus*	T	
Grasshopper Sparrow	*Ammodramus savannarum*	T	
Henslow's Sparrow	*Ammodramus henslowii*	E	
Mammals			
Water Shrew	*Sorex palustris*	SC	
Rock Shrew	*Sorex dispar*	SC	
Indiana Myotis	*Myotis sodalis*	E	E
Small-Footed Myotis	*Myotis leibii*	SC	
Southern Bog Lemming	*Synaptomys cooperi*	SC	
Sperm Whale	*Physeter catodon*	E	E
Fin Whale	*Balaenoptera physalus*	E	E
Sei Whale	*Balaenoptera borealis*	E	E
Blue Whale	*Balaenoptera musculus*	E	E
Humpback Whale	*Megaptera novaeangliae*	E	E
Northern Right Whale	*Eubalaena glacialis*	E	E

INVERTEBRATES

Common Name	Scientific Name	MA Status	Fed Status	Notes
Sponges				
Smooth Branched Sponge	*Spongilla aspinosa*	SC		
Flatworms				
Sunderland Spring Planarian	*Polycelis remota*	E		
Segmented Worms				
New England Medicinal Leech	*Macrobdella sestertia*	SC		
Snails				
New England Siltsnail	*Floridobia winkleyi*	SC		
Walker's Limpet	*Ferrissia walkeri*	SC		
Coastal Marsh Snail	*Littoridinops tenuipes*	SC		

Slender Walker	*Pomatiopsis lapidaria*	E	
Boreal Marstonia	*Marstonia lustrica*	E	
Boreal Turret Snail	*Valvata sincera*	E	
Mussels			
Dwarf Wedgemussel	*Alasmidonta heterodon*	E	E
Triangle Floater	*Alasmidonta undulata*	SC	
Swollen Wedgemussel	*Alasmidonta varicosa*	E	
Yellow Lampmussel	*Lampsilis cariosa*	E	
Tidewater Mucket	*Leptodea ochracea*	SC	
Eastern Pondmussel	*Ligumia nasuta*	SC	
Creeper	*Strophitus undulatus*	SC	
Crustaceans			
Intricate Fairy Shrimp	*Eubranchipus intricatus*	SC	
Agassiz's Clam Shrimp	*Eulimnadia agassizii*	E	
Northern Spring Amphipod	*Gammarus pseudolimnaeus*	SC	
American Clam Shrimp	*Limnadia lenticularis*	SC	
Taconic Cave Amphipod	*Stygobromus borealis*	E	
Piedmont Groundwater Amphipod	*Stygobromus tenuis tenuis*	SC	
Coastal Swamp Amphipod	*Synurella chamberlaini*	SC	
Dragonflies			
Spatterdock Darner	*Rhionaeschna mutata*	SC	
Subarctic Darner	*Aeshna subarctica*	T	
Comet Darner	*Anax longipes*	SC	
Ocellated Darner	*Boyeria grafiana*	SC	
Spine-Crowned Clubtail	*Gomphus abbreviatus*	E	
Harpoon Clubtail	*Gomphus descriptus*	E	
Midland Clubtail	*Gomphus fraternus*	E	
Rapids Clubtail	*Gomphus quadricolor*	T	
Cobra Clubtail	*Gomphus vastus*	SC	
Skillet Clubtail	*Gomphus ventricosus*	SC	
Umber Shadowdragon	*Neurocordulia obsoleta*	SC	
Stygian Shadowdragon	*Neurocordulia yamaskanensis*	SC	
Brook Snaketail	*Ophiogomphus aspersus*	SC	
Riffle Snaketail	*Ophiogomphus carolus*	T	
Ski-tipped Emerald	*Somatochlora elongata*	SC	
Forcipate Emerald	*Somatochlora forcipata*	SC	

Coppery Emerald	*Somatochlora georgiana*	E	
Incurvate Emerald	*Somatochlora incurvata*	T	
Kennedy's Emerald	*Somatochlora kennedyi*	E	
Mocha Emerald	*Somatochlora linearis*	SC	
Riverine Clubtail	*Stylurus amnicola*	E	
Zebra Clubtail	*Stylurus scudderi*	SC	
Arrow Clubtail	*Stylurus spiniceps*	T	
Ebony Boghaunter	*Williamsonia fletcheri*	E	
Ringed Boghaunter	*Williamsonia lintneri*	E	
Damselflies			
Tule Bluet	*Enallagma carunculatum*	SC	
Attenuated Bluet	*Enallagma daeckii*	SC	
New England Bluet	*Enallagma laterale*	SC	
Scarlet Bluet	*Enallagma pictum*	T	
Pine Barrens Bluet	*Enallagma recurvatum*	T	
Beetles			
Twelve-Spotted Tiger Beetle	*Cicindela duodecimguttata*	SC	
Hentz's Redbelly Tiger Beetle	*Cicindela rufiventris hentzii*	T	
Northeastern Beach Tiger Beetle	*Cicindela dorsalis dorsalis*	E	T
Bank Tiger Beetle	*Cicindela limbalis*	SC	
Cobblestone Tiger Beetle	*Cicindela marginipennis*	E	
Barrens Tiger Beetle	*Cicindela patruela*	E	
Puritan Tiger Beetle	*Cicindela puritana*	E	T
Purple Tiger Beetle	*Cicindela purpurea*	SC	
American Burying Beetle	*Nicrophorus americanus*	E	E
Butterflies and Moths			
Coastal Heathland Cutworm	*Abagrotis nefascia*	SC	
Barrens Daggermoth	*Acronicta albarufa*	T	
Drunk Apamea Moth	*Apamea inebriata*	SC	
New Jersey Tea Inchworm	*Apodrepanulatrix liberaria*	E	
Straight Lined Mallow Moth	*Bagisara rectifascia*	SC	
Hessel's Hairstreak	*Callophrys hesseli*	SC	
Frosted Elfin	*Callophrys irus*	SC	
Bog Elfin	*Callophrys lanoraieensis*	T	
Gerhard's Underwing	*Catocala herodias gerhardi*	SC	
Precious Underwing Moth	*Catocala pretiosa pretiosa*	E	
Waxed Sallow Moth	*Chaetaglaea cerata*	SC	

Melsheimer's Sack Bearer	*Cicinnus melsheimeri*	T		
Chain Dot Geometer	*Cingilia catenaria*	SC		
Unexpected Cycnia	*Cycnia inopinatus*	T		
Three-Lined Angle Moth	*Digrammia eremiata*	T		
Imperial Moth	*Eacles imperialis*	T		
Early Hairstreak	*Erora laeta*	T		
Persius Duskywing	*Erynnis persius persius*	E		
Sandplain Euchlaena	*Euchlaena madusaria*	SC		
Dion Skipper	*Euphyes dion*	T		
The Pink Streak	*Faronta rubripennis*	T		
Phyllira Tiger Moth	*Grammia phyllira*	E		
Slender Clearwing Sphinx Moth	*Hemaris gracilis*	SC		
Barrens Buckmoth	*Hemileuca maia*	SC		
Buchholz's Gray	*Hypomecis buchholzaria*	E		
Pine Barrens Itame	*Itame* sp. 1	SC		5
Pale Green Pinion Moth	*Lithophane viridipallens*	SC		
Twilight Moth	*Lycia rachelae*	E		
Pine Barrens Lycia	*Lycia ypsilon*	T		
Barrens Metarranthis	*Metarranthis apiciaria*	E		
Coastal Swamp Metarranthis	*Metarranthis pilosaria*	SC		
Northern Brocade Moth	*Neoligia semicana*	SC		
Dune Noctuid Moth	*Oncocnemis riparia*	SC		
Pitcher Plant Borer	*Papaipema appassionata*	T		
Ostrich Fern Borer	*Papaipema* sp. 2	.SC		6
Chain Fern Borer	*Papaipema stenocelis*	T		
Water-willow Stem Borer	*Papaipema sulphurata*	T		
Mustard White	*Pieris oleracea*	T		
Pink Sallow Moth	*Psectraglaea carnosa*	SC		
Southern Ptichodis	*Ptichodis bistrigata*	T		
Orange Sallow Moth	*Rhodoecia aurantiago*	T		
Oak Hairstreak	*Satyrium favonius*	SC		
Spartina Borer	*Spartiniphaga inops*	SC		
Faded Gray Geometer	*Stenoporpia polygrammaria*	T		
Pine Barrens Zale	*Zale* sp. 1	SC		7
Pine Barrens Zanclognatha	*Zanclognatha martha*	T		

PLANTS

Common Name	Scientific Name	MA	Fed	Notes

		Status	Status
Aceraceae (Maples)			
Black Maple	*Acer nigrum*	SC	
Adiantaceae (Cliff Ferns)			
Fragile Rock-Brake	*Cryptogramma stelleri*	E	
Alismataceae (Arrowheads)			
Estuary Arrowhead	*Sagittaria montevidensis* ssp. *spongiosa*	E	
Wapato	*Sagittaria cuneata*	T	
River Arrowhead	*Sagittaria subulata*	E	
Terete Arrowhead	*Sagittaria teres*	SC	
Apiaceae (Parsleys, Angelicas)			
Hemlock Parsley	*Conioselinum chinense*	SC	
Saltpond Pennywort	*Hydrocotyle verticillata*	T	
Canadian Sanicle	*Sanicula canadensis*	T	
Long-Styled Sanicle	*Sanicula odorata*	T	
Aquifoliaceae (Hollies)			
Mountain Winterberry	*Ilex montana*	E	
Araceae (Arums)			
Green Dragon	*Arisaema dracontium*	T	
Golden Club	*Orontium aquaticum*	E	
Araliaceae (Ginsengs)			
Ginseng	*Panax quinquefolius*	SC	
Asclepiadaceae (Milkweeds)			
Purple Milkweed	*Asclepias purpurascens*	E	
Linear-Leaved Milkweed	*Asclepias verticillata*	T	
Aspleniaceae (Spleenworts)			
Mountain Spleenwort	*Asplenium montanum*	E	
Wall-Rue Spleenwort	*Asplenium ruta-muraria*	T	
Asteraceae (Asters, Composites)			
Lesser Snakeroot	*Ageratina aromatica*	E	
Eaton's Beggar-ticks	*Bidens eatonii*	E	
Estuary Beggar-ticks	*Bidens hyperborea*	E	

Cornel-leaved Aster	*Doellingeria infirma*	E
New England Boneset	*Eupatorium novae-angliae*	E
Purple Cudweed	*Gamochaeta purpurea*	E
New England Blazing Star	*Liatris scariosa* var. *novae-angliae*	SC
Lion's Foot	*Nabalus serpentarius*	E
Sweet Coltsfoot	*Petasites frigidus* var. *palmatus*	E
Sclerolepis	*Sclerolepis uniflora*	E
Large-Leaved Goldenrod	*Solidago macrophylla*	T
Upland White Aster	*Solidago ptarmicoides*	E
Rand's Goldenrod	*Solidago simplex* ssp. *randii* var. *monticola*	E
Eastern Silvery Aster	*Symphyotrichum concolor*	E
Crooked-Stem Aster	*Symphyotrichum prenanthoides*	T
Tradescant's Aster	*Symphyotrichum tradescantii*	T
Betulaceae (Birches, Alders)		
Mountain Alder	*Alnus viridis* ssp. *crispa*	T
Swamp Birch	*Betula pumila*	E
Boraginaceae (Borages)		
Northern Wild Comfrey	*Cynoglossum virginianum* var. *boreale*	E
Oysterleaf	*Mertensia maritima*	E
Brassicaceae (Mustards)		
Lyre-Leaved Rock-cress	*Arabidopsis lyrata*	E
Smooth Rock-cress	*Boechera laevigata*	T
Green Rock-cress	*Boechera missouriensis*	T
Purple Cress	*Cardamine douglassii*	E
Long's Bitter-cress	*Cardamine longii*	E
Fen Cuckoo Flower	*Cardamine pratensis* var. *palustris*	T
Cactaceae (Cacti)		
Prickly Pear	*Opuntia humifusa*	E
Campanulaceae (Bluebells, Lobelias)		
Great Blue Lobelia	*Lobelia siphilitica*	E
Caprifoliaceae (Honeysuckles)		

Hairy Honeysuckle	*Lonicera hirsuta*	E
Snowberry	*Symphoricarpos albus* var. *albus*	E
Broad Tinker's-weed	*Triosteum perfoliatum*	E
Downy Arrowwood	*Viburnum rafinesquianum*	E
Caryophyllaceae (Pinks, Sandworts)		
Nodding Chickweed	*Cerastium nutans*	E
Michaux's Sandwort	*Minuartia michauxii*	T
Large-leaved Sandwort	*Moehringia macrophylla*	E
Silverling	*Paronychia argyrocoma*	E
Chenopodiaceae (Saltworts)		
Fogg's Goosefoot	*Chenopodium foggii*	E
American Sea-blite	*Suaeda calceoliformis*	SC
Cistaceae (Rockroses, Pinweeds)		
Bushy Rockrose	*Crocanthemum dumosum*	SC
Beaded Pinweed	*Lechea pulchella* var. *moniliformis*	E
Clusiaceae (St. John's-worts)		
Creeping St. John's-wort	*Hypericum adpressum*	T
Giant St. John's-wort	*Hypericum ascyron*	E
St. Andrew's Cross	*Hypericum hypericoides* ssp. *multicaule*	E
Convolvulaceae (Morning Glories)		
Low Bindweed	*Calystegia spithamaea*	E
Crassulaceae (Sedums)		
Pygmyweed	*Tillaea aquatica*	T
Cupressaceae (Cedars, Junipers)		
Arborvitae	*Thuja occidentalis*	E
Cyperaceae (Sedges)		
River Bulrush	*Bolboschoenus fluviatilis*	SC
Foxtail Sedge	*Carex alopecoidea*	T
Back's Sedge	*Carex backii*	E
Bailey's Sedge	*Carex baileyi*	T

Bush's Sedge	*Carex bushii*	E
Chestnut-colored Sedge	*Carex castanea*	E
Creeping Sedge	*Carex chordorrhiza*	E
Davis's Sedge	*Carex davisii*	E
Glaucescent Sedge	*Carex glaucodea*	E
Handsome Sedge	*Carex formosa*	T
Slender Woodland Sedge	*Carex gracilescens*	E
Gray's Sedge	*Carex grayi*	T
Hitchcock's Sedge	*Carex hitchcockiana*	SC
Shore Sedge	*Carex lenticularis*	T
Glaucous Sedge	*Carex livida*	E
False Hop Sedge	*Carex lupuliformis*	E
Midland Sedge	*Carex mesochorea*	E
Michaux's Sedge	*Carex michauxiana*	E
Mitchell's Sedge	*Carex mitchelliana*	T
Few-fruited Sedge	*Carex oligosperma*	E
Few-flowered Sedge	*Carex pauciflora*	E
Variable Sedge	*Carex polymorpha*	E
Schweinitz's Sedge	*Carex schweinitzii*	E
Dioecious Sedge	*Carex sterilis*	T
Walter's Sedge	*Carex striata*	E
Fen Sedge	*Carex tetanica*	SC
Hairy-fruited Sedge	*Carex trichocarpa*	T
Tuckerman's Sedge	*Carex tuckermanii*	E
Cat-tail Sedge	*Carex typhina*	T
Wiegand's Sedge	*Carex wiegandii*	E
Engelmann's Umbrella-sedge	*Cyperus engelmannii*	T
Houghton's Flatsedge	*Cyperus houghtonii*	E
Wright's Spike-rush	*Eleocharis diandra*	E
Intermediate Spike-sedge	*Eleocharis intermedia*	T
Tiny-fruited Spike-rush or Spike-sedge	*Eleocharis microcarpa* var. *filiculmis*	E
Ovate Spike-rush or Spike-sedge	*Eleocharis ovata*	E
Few-flowered Spike-sedge	*Eleocharis quinqueflora*	E
Three-angled Spike-sedge	*Eleocharis tricostata*	E
Slender Cottongrass	*Eriophorum gracile*	T
Dwarf Bulrush	*Lipocarpha micrantha*	T

Capillary Beak-rush or Beak-sedge	*Rhynchospora capillacea*	E		
Inundated Horned-sedge	*Rhynchospora inundata*	T		
Short-beaked Bald-sedge	*Rhynchospora nitens*	T		
Long-beaked Bald-sedge	*Rhynchospora scirpoides*	SC		
Torrey's Beak-sedge	*Rhynchospora torreyana*	E		
Northeastern Bulrush	*Scirpus ancistrochaetus*	E	E	
Long's Bulrush	*Scirpus longii*	T		
Papillose Nut-sedge	*Scleria pauciflora*	E		8
Tall Nut-sedge	*Scleria triglomerata*	E		
Dryopteridaceae (Wood Ferns)				
Braun's Holly-fern	*Polystichum braunii*	E		
Smooth Woodsia	*Woodsia glabella*	E		
Elatinaceae (Waterworts)				
American Waterwort	*Elatine americana*	E		
Empetraceae (Crowberries)				
Broom Crowberry	*Corema conradii*	SC		
Equisetaceae (Horsetails)				
Dwarf Scouring-rush	*Equisetum scirpoides*	SC		
Ericaceae (Laurels, Blueberries)				
Great Laurel	*Rhododendron maximum*	T		
Mountain Cranberry	*Vaccinium vitis-idaea* ssp. *minus*	E		
Eriocaulaceae (Pipeworts)				
Parker's Pipewort	*Eriocaulon parkeri*	E		
Fabaceae (Beans, Peas, Clovers)				
Large-bracted Tick-trefoil	*Desmodium cuspidatum*	T		
Wild Senna	*Senna hebecarpa*	E		
Fagaceae (Oaks, Beeches)				
Bur Oak	*Quercus macrocarpa*	SC		
Yellow Oak	*Quercus muehlenbergii*	T		
Fumariaceae (Fumitories)				
Climbing Fumitory	*Adlumia fungosa*	SC		
Gentianaceae (Gentians)				
Andrew's Bottle Gentian	*Gentiana andrewsii*	E		

Spurred Gentian	*Halenia deflexa*	E
Slender Marsh Pink	*Sabatia campanulata*	E
Plymouth Gentian	*Sabatia kennedyana*	SC
Sea Pink	*Sabatia stellaris*	E
Grossulariaceae (Currants)		
Bristly Black Currant	*Ribes lacustre*	SC
Haemodoraceae (Redroots)		
Redroot	*Lachnanthes caroliana*	SC
Haloragaceae (Water-milfoils)		
Alternate-flowered Water-milfoil	*Myriophyllum alterniflorum*	E
Farwell's Water-milfoil	*Myriophyllum farwellii*	E
Pinnate Water-milfoil	*Myriophyllum pinnatum*	SC
Comb Water-milfoil	*Myriophyllum verticillatum*	E
Hydrophyllaceae (Waterleaves)		
Broad Waterleaf	*Hydrophyllum canadense*	E
Hymenophyllaceae (Filmy-ferns)		
Weft Bristle-fern	*Trichomanes intricatum*	E
Iridaceae (Irises)		
Sandplain Blue-eyed Grass	*Sisyrinchium fuscatum*	SC
Slender Blue-eyed Grass	*Sisyrinchium mucronatum*	E
Isoetaceae (Quillworts)		
Acadian Quillwort	*Isoetes acadiensis*	E
Lake Quillwort	*Isoetes lacustris*	E
Juncaceae (Rushes)		
Weak Rush	*Juncus debilis*	E
Thread Rush	*Juncus filiformis*	E
Black-fruited Woodrush	*Luzula parviflora* ssp. *melanocarpa*	E
Lamiaceae (Mints)		
Purple Giant-hyssop	*Agastache scrophulariifolia*	E
Downy Wood-mint	*Blephilia ciliata*	E
Hairy Wood-mint	*Blephilia hirsuta*	E
Gypsywort	*Lycopus rubellus*	E
False Pennyroyal	*Trichostema brachiatum*	E

Lentibulariaceae (Bladderworts)		
Resupinate Bladderwort	*Utricularia resupinata*	T
Subulate Bladderwort	*Utricularia subulata*	SC
Liliaceae (Lilies)		
Devil's-bit	*Chamaelirium luteum*	E
Linaceae (Flaxes)		
Sandplain Flax	*Linum intercursum*	SC
Rigid Flax	*Linum medium* var. *texanum*	T
Lycopodiaceae (Clubmosses)		
Foxtail Clubmoss	*Lycopodiella alopecuroides*	E
Mountain Firmoss	*Huperzia selago*	E
Lythraceae (Loosestrifes)		
Toothcup	*Rotala ramosior*	E
Magnoliaceae (Magnolias)		
Sweetbay Magnolia	*Magnolia virginiana*	E
Melastomataceae (Meadow Beauties)		
Maryland Meadow Beauty	*Rhexia mariana*	E
Moraceae (Mulberries)		
Red Mulberry	*Morus rubra*	E
Nymphaeaceae (Water Lilies)		
Tiny Cow-lily	*Nuphar microphylla*	E
Onagraceae (Evening Primroses)		
Many-fruited False-loosestrife	*Ludwigia polycarpa*	E
Round-fruited False-loosestrife	*Ludwigia sphaerocarpa*	E
Ophioglossaceae (Grape Ferns)		
Adder's-tongue Fern	*Ophioglossum pusillum*	T
Orchidaceae (Orchids)		
Putty-root	*Aplectrum hyemale*	E
Arethusa	*Arethusa bulbosa*	T
Autumn Coralroot	*Corallorhiza odontorhiza*	SC
Ram's-head Lady's-slipper	*Cypripedium arietinum*	E

Small Yellow Lady's-slipper	*Cypripedium parviflorum* var. *makasin*	E	
Showy Lady's-slipper	*Cypripedium reginae*	SC	
Dwarf Rattlesnake-plantain	*Goodyera repens*	E	
Small Whorled Pogonia	*Isotria medeoloides*	E	T
Lily-leaf Twayblade	*Liparis liliifolia*	T	
Heartleaf Twayblade	*Listera cordata*	E	
Bayard's Green Adder's-mouth	*Malaxis bayardii*	E	
White Adder's-mouth	*Malaxis monophyllos* var. *brachypoda*	E	
Crested Fringed Orchis	*Platanthera cristata*	E	
Leafy White Orchis	*Platanthera dilatata*	T	
Pale Green Orchis	*Platanthera flava* var. *herbiola*	T	
Hooded Ladies'-tresses	*Spiranthes romanzoffiana*	E	
Grass-leaved Ladies'-tresses	*Spiranthes vernalis*	T	
Cranefly Orchid	*Tipularia discolor*	E	
Three Bird Orchid (Nodding Pogonia)	*Triphora trianthophora*	E	
Oxalidaceae (Wood-sorrels)			
Violet Wood-sorrel	*Oxalis violacea*	E	
Poaceae (Grasses)			
Annual Peanutgrass	*Amphicarpum amphicarpon*	E	
Purple Needlegrass	*Aristida purpurascens*	T	
Seabeach Needlegrass	*Aristida tuberculosa*	T	
Reed Bentgrass	*Calamagrostis pickeringii*	E	
New England Northern Reedgrass	*Calamagrostis stricta* ssp. *inexpansa*	E	
Tufted Hairgrass	*Deschampsia cespitosa* ssp. *glauca*	E	
Commons's Panic-grass	*Dichanthelium ovale* ssp. *pseudopubescens*	SC	
Mattamuskeet Panic-grass	*Dichanthelium dichotomum ssp. mattamuskeetense*	E	
Rough Panic-grass	*Dichanthelium scabriusculum*	T	
Wright's Panic-grass	*Dichanthelium wrightianum*	SC	
Hairy Wild Rye	*Elymus villosus*	E	
Frank's Lovegrass	*Eragrostis frankii*	SC	
Saltpond Grass	*Leptochloa fusca* ssp. *fascicularis*	T	
Sea Lyme-grass	*Leymus mollis*	E	
Woodland Millet	*Milium effusum*	T	

Gattinger's Panic-grass	*Panicum philadelphicum* ssp. *gattingeri*	SC
Long-Leaved Panic-grass	*Panicum rigidulum* ssp. *pubescens*	T
Philadelphia Panic-grass	*Panicum philadelphicum ssp. philadelphicum*	SC
Drooping Speargrass	*Poa saltuensis* ssp. *languida*	E
Bristly Foxtail	*Setaria parviflora*	SC
Salt Reedgrass	*Spartina cynosuroides*	T
Shining Wedgegrass	*Sphenopholis nitida*	T
Swamp Oats	*Sphenopholis pensylvanica*	T
Small Dropseed	*Sporobolus neglectus*	E
Northern Gama-grass	*Tripsacum dactyloides*	E
Spiked False-oats	*Trisetum spicatum*	E
Podostemaceae (Threadfeet)		
Threadfoot	*Podostemum ceratophyllum*	SC
Polygonaceae (Docks, Knotweeds)		
Strigose Knotweed	*Persicaria setacea*	T
Sea-beach Knotweed	*Polygonum glaucum*	SC
Pondshore Knotweed	*Polygonum puritanorum*	SC
Seabeach Dock	*Rumex pallidus*	T
Swamp Dock	*Rumex verticillatus*	T
Portulacaceae (Spring Beauties)		
Narrow-leaved Spring Beauty	*Claytonia virginica*	E
Potamogetonaceae (Pondweeds)		
Algae-like Pondweed	*Potamogeton confervoides*	T
Frie's Pondweed	*Potamogeton friesii*	E
Hill's Pondweed	*Potamogeton hillii*	SC
Ogden's Pondweed	*Potamogeton ogdenii*	E
Straight-leaved Pondweed	*Potamogeton strictifolius*	E
Vasey's Pondweed	*Potamogeton vaseyi*	E
Pyrolaceae (Shinleaf)		
Pink Pyrola	*Pyrola asarifolia* ssp. *asarifolia*	E
Ranunculaceae (Buttercups)		
Black Cohosh	*Actaea racemosa*	E
Purple Clematis	*Clematis occidentalis*	SC

Golden Seal	*Hydrastis canadensis*	E	
Tiny-flowered Buttercup	*Ranunculus micranthus*	E	
Bristly Buttercup	*Ranunculus pensylvanicus*	SC	
Rosaceae (Roses, Shadbushes)			
Small-flowered Agrimony	*Agrimonia parviflora*	E	
Hairy Agrimony	*Agrimonia pubescens*	T	
Bartram's Shadbush	*Amelanchier bartramiana*	T	
Nantucket Shadbush	*Amelanchier nantucketensis*	SC	
Roundleaf Shadbush	*Amelanchier sanguinea*	SC	
Bicknell's Hawthorn	*Crataegus bicknellii*	E	
Sandbar Cherry	*Prunus pumila* var. *depressa*	T	
Northern Prickly Rose	*Rosa acicularis* ssp. *sayi*	E	
Northern Mountain-ash	*Sorbus decora*	E	
Barren Strawberry	*Waldsteinia fragarioides*	SC	
Rubiaceae (Bedstraws, Bluets)			
Northern Bedstraw	*Galium boreale*	E	
Labrador Bedstraw	*Galium labradoricum*	T	
Long-leaved Bluet	*Houstonia longifolia*	E	
Salicaceae (Willows)			
Swamp Cottonwood	*Populus heterophylla*	E	
Sandbar Willow	*Salix exigua ssp. interior*	T	
Scheuchzeriaceae (Pod-grasses)			
Pod-grass	*Scheuchzeria palustris*	E	
Schizaeaceae (Climbing Ferns)			
Climbing Fern	*Lygodium palmatum*	SC	
Scrophulariaceae (Figworts)			
Sandplain Gerardia	*Agalinis acuta*	E	E
Winged Monkey-flower	*Mimulus alatus*	E	
Muskflower	*Mimulus moschatus*	E	
Swamp Lousewort	*Pedicularis lanceolata*	E	
Hairy Beardtongue	*Penstemon hirsutus*	E	
Sessile Water-speedwell	*Veronica catenata*	E	
Culver's-root	*Veronicastrum virginicum*	T	
Sparganiaceae (Bur-reeds)			

Small Bur-reed	*Sparganium natans*	E
Verbenaceae (Vervains)		
Narrow-leaved Vervain	*Verbena simplex*	E
Violaceae (Violets)		
Sand Violet	*Viola adunca*	SC
Britton's Violet	*Viola brittoniana*	T
Viscaceae (Christmas-mistletoes)		
Dwarf Mistletoe	*Arceuthobium pusillum*	SC

1. Trimorphic freshwater population only.

2. Including triploid and other polyploid forms within the Ambystoma jeffersonianum/Ambystoma laterale complex.

3. Ditto

4. This species is listed by the U. S. Fish and Wildlife Service as P. r. bangsi (Plymouth Redbelly Turtle) in 50 CFR 17.11.

5. Undescribed species near I. inextricata

6. Undescribed species near P. pterisii

7. Undescribed species near Z. lunifera

8. Includes the two varieties of this species that occur in Massachusetts: s.p. var. pauciflora and s.p. var. caroliniana.

Definitions

"Endangered" (E) species are native species which are in danger of extinction throughout all or part of their range, or which are in danger of extirpation from Massachusetts, as documented by biological research and inventory.

"Threatened" (T) species are native species which are likely to become endangered in the forseeable future, or which are declining or rare as determined by biological research and inventory.

"Special concern" (SC) species are native species which have been documented by biological research or inventory to have suffered a decline that could threaten the species if allowed to continue unchecked, or which occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become threatened within Massachusetts.

Any native species listed as endangered or threatened by the U.S. Fish and Wildlife Service is also included on the state list. The rules and regulations and precise definitions relative to the establishment of the Commonwealth's list of endangered, threatened, and special concern species are set forth in 321 CMR 10.00 et seq. View a key to the Federal Status abbreviations appearing on the list.

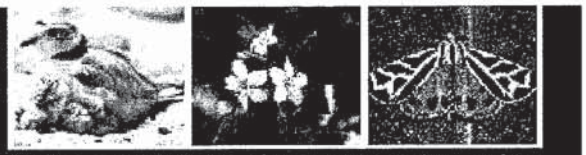
1. Introduction - The list in 321 CMR 10.90 contains the names of all species of plants and animals which have been determined to be Endangered, Threatened, or of Special Concern pursuant to M.G.L. c. 131A and 321 CMR 10.03.

2. List Format - The columns entitled "Common Name" and "Scientific Name" define the species listed. In the "Status" columns the following symbols are used: "E" for Endangered, "T" for Threatened, and "SC" for Special Concern. The status defined

under the "MA" column denotes the official status of the species in Massachusetts pursuant to M.G.L. c. 131A and 321 CMR 10.00. The status under the "US" column is the status of the species under the federal Endangered Species Act at the time of the latest revision of 321 CMR 10.00 and is given for informational purposes only. Recent changes in the federal list might not be reflected on this list. The U.S. Fish and Wildlife Service should be consulted for official and up to date information on the federal status of any species. Inquiries may be made by writing to U.S. Fish and Wildlife Service, 70 Commercial Street, Suite 300, Concord, NH 03301-5087. The "Taxonomic Family/Taxonomic Group" column of the list is included for the purpose of organization. The "Notes" column directs the reader to footnotes which further define or clarify the status of a species or alternative names of species.

3. Organization of the List - The list is generally organized according to the relationship of the listed species as determined by the science of taxonomy, which groups and categorizes species that are similar on the basis of shared evolutionary descent. The most basic division in the list is between animals and plants. Within animals the list is divided between vertebrates, (animals with backbones) and invertebrates (animals without backbones). Within vertebrates, invertebrates, and plants, the list is further divided into categories which are generally recognized, such as fish, mammals, dragonflies, and violets. All such information has no regulatory effect and is provided only for the purpose of organizing the list.

Massachusetts Division of Fisheries and Wildlife, 1 Rabbit Hill Rd, Westborough, MA 01581
Tel: (508) 389-6300; Fax: (508) 389-7890
Natural Heritage & Endangered Species Program Tel: (508) 389-6360; Fax: (508) 389-7891



Heritage Home

Rare Species by Town

MESA (Massachusetts Endangered Species Act) and Federal Status

Quick Links
» Town Index
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E = Endangered T = Threatened SC = Special Concern

Most Recent Observation

This field represents the most recent observation of that species in a town. However, because they are rare, many MESA-listed species are difficult to detect even when they are present. Natural Heritage does not have the resources to be able to conduct methodical species surveys in each town on a regular basis. Therefore, the fact that the 'Most Recent Observation' recorded for a species may be several years old should not be interpreted as meaning that the species no longer occurs in a town. However, Natural Heritage regards records older than twenty-five years historic.

Click on a town below to view MESA-listed species for that town. To print the species for a particular town, highlight the species using your mouse, go to Print under the File Menu, click on 'Selection' under 'Print Range' and click OK.

For more information about a particular species, view the list of Natural Heritage Fact Sheets.

These data were extracted from the database of the Natural Heritage and Endangered Species Program in September 2009.

Cambridge | Canton | Carlisle | Carver | Charlemont | Charlton | Chatham | Chelmsford | Chelsea | Cheshire | Chester |Chesterfield | Chicopee | Chilmark | Clarksburg | Clinton | Cohasset | Colrain | Concord | Conway | Cummington

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
CAMBRIDGE	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC		1917
CAMBRIDGE	Amphibian	Scaphiopus holbrookii	Eastern Spadefoot	T		1892
CAMBRIDGE	Beetle	Cicindela duodecimguttata	Twelve-spotted Tiger Beetle	SC		1932
CAMBRIDGE	Bird	Ammodramus henslowii	Henslow's Sparrow	E		1871
CAMBRIDGE	Bird	Botaurus lentiginosus	American Bittern	E		1906

CAMBRIDGE	Bird	Cistothorus platensis	Sedge Wren	E	1840
CAMBRIDGE	Bird	Gallinula chloropus	Common Moorhen	SC	1890
CAMBRIDGE	Bird	Ixobrychus exilis	Least Bittern	E	1890
CAMBRIDGE	Bird	Tyto alba	Barn Owl	SC	Historic
CAMBRIDGE	Butterfly/Moth	Eacles imperialis	Imperial Moth	T	Historic
CAMBRIDGE	Fish	Notropis bifrenatus	Bridle Shiner	SC	1928
CAMBRIDGE	Mussel	Ligumia nasuta	Eastern Pondmussel	SC	1940
CAMBRIDGE	Reptile	Glyptemys insculpta	Wood Turtle	SC	Historic
CAMBRIDGE	Reptile	Terrapene carolina	Eastern Box Turtle	SC	1892
CAMBRIDGE	Segmented Worm	Macrobdella sestertia	New England Medicinal Leech	SC	1800s
CAMBRIDGE	Vascular Plant	Carex gracilescens	Slender Woodland Sedge	E	1891
CAMBRIDGE	Vascular Plant	Cyperus engelmannii	Engelmann's Umbrella-sedge	T	2007
CAMBRIDGE	Vascular Plant	Gentiana andrewsii	Andrews' Bottle Gentian	E	1854
CAMBRIDGE	Vascular Plant	Isoetes lacustris	Lake Quillwort	E	Historic
CAMBRIDGE	Vascular Plant	Platanthera flava var. herbiola	Pale Green Orchis	T	Historic
CAMBRIDGE	Vascular Plant	Potamogeton friesii	Fries' Pondweed	E	1880
CAMBRIDGE	Vascular Plant	Scirpus longii	Long's Bulrush	T	1913
CAMBRIDGE	Vascular Plant	Suaeda calceoliformis	American Sea-blite	SC	1912
CAMBRIDGE	Vascular Plant	Viola brittoniana	Britton's Violet	T	1843

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
CANTON	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC		1978
CANTON	Bird	Cistothorus platensis	Sedge Wren	E		1893
CANTON	Butterfly/Moth	Callophrys hesseli	Hessel's Hairstreak	SC		2001
CANTON	Butterfly/Moth	Chaetaglaea cerata	Waxed Sallow Moth	SC		1987
CANTON	Butterfly/Moth	Metarranthis pilosaria	Coastal Swamp Metarranthis Moth	SC		1994
CANTON	Butterfly/Moth	Papaipema appassionata	Pitcher Plant Borer Moth	T		2002
CANTON	Butterfly/Moth	Satyrium favonius	Oak Hairstreak	SC		2004
CANTON	Dragonfly/Damselfly	Enallagma daeckii	Attenuated Bluet	SC		2008
CANTON	Dragonfly/Damselfly	Enallagma laterale	New England Bluet	SC		2008
CANTON	Dragonfly/Damselfly	Enallagma pictum	Scarlet Bluet	T		2009
CANTON	Reptile	Emydoidea blandingii	Blanding's Turtle	T		1994
CANTON	Reptile	Terrapene carolina	Eastern Box Turtle	SC		1917
CANTON	Vascular Plant	Ageratina aromatica	Lesser Snakeroot	E		1895
CANTON	Vascular Plant	Amelanchier nantucketensis	Nantucket Shadbush	SC		2009
CANTON	Vascular Plant	Carex glaucodea	Glaucescent Sedge	E		1901

Attachment F

National Register of Historic Places Documentation

Lightship Engineering reviewed federal listings of National Register of Historic Places for Middlesex County in Massachusetts. No records exist for the vicinity of the Site or discharge area. The Site meets the Permit Eligibility Criteria 1 under a NPDES Dewatering General Permit.