

December 19, 2008
Project No. 013-073

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

RE: Notice of Intent for NPDES Remediation General Permit
Discharge of Treated Groundwater
Remedial Soil Excavation Dewatering
332 West Street
Brockton, MA 02301
Plymouth County
MADEP RTN 4-21613

Dear Sir or Madam:

The purpose of this document is to present a Notice of Intent (NOI) to discharge treated groundwater from the above-referenced site pursuant to the terms of the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) No. MAG910000 for Massachusetts. Hydro-Environmental Technologies, Inc. (HETI) prepared this document on behalf of Mr. Gilbert Brown, the owner of the home where a subsurface release of heating oil (#2) occurred.

Background

The site is located in Brockton, Massachusetts on the east side of West Street. It is a private residence. A release of #2 heating oil occurred from a vaulted underground storage tank in the basement of the house. The oil appears to have reached the water table just below the basement floor, and migrated to a basement sump. Some of the oil appears to have been pumped from the sump to a storm drainage box culvert that flows under the house. The culvert discharges on the far side of West Street from the house to form a stream that flows through the Thorny Lea golf course. This stream flows through subsurface culverts and eventually discharges into the West Meadow Brook.

Notice of Intent

A groundwater recovery remediation system currently operates at the site. Water is being pumped from the basement sump into an onsite holding tank but HETI believes that the volume of water that will need to be pumped during site remediation will make continued use of such a tank impractical.

Mr. Brown and HETI are therefore applying for coverage under Massachusetts RGP for discharge of treated groundwater generated from site remediation activities related primarily to remediation of soil and groundwater contaminated by petroleum, specifically No. 2 fuel oil.

The NOI is being submitted for joint coverage for both Mr. Brown and HETI pursuant to Part B.1.b of the RGP. Mr. Brown is the responsible party for remediating the release at the site and is the "owner." Mr. Brown has retained HETI to manage the cleanup of the site in accordance with the MCP. Therefore, for purposes of this permit, HETI is the "operator." Mr. Brown or HETI are anticipated to each retain additional contractors to implement the remedial plan. Therefore, Mr. Brown and HETI are applying for coverage as co-permittees.

Permitting

The site is regulated under the MCP. Therefore, concurrent submittal of this NOI to the MADEP for approval is not required. However, a copy of this submittal is being forwarded the MADEP Bureau of Waste Site Cleanup for inclusion in the file.

A Notice of Intent form is attached to this letter. The form and its attachments contain the following information:

- General site information, including mailing addresses and telephone numbers of the parties applying for coverage under this permit.
- Discharge information, including the reason for and the type of proposed discharge, the maximum and average flow rate, and the anticipated time frame of the discharge.
- Identification of contaminants potentially present in the influent water to the proposed treatment system.
- Determination of reasonable potential and allowable dilution factors for metals using estimated stream flow statistics for the proposed receiving waters.
- A description of the proposed treatment system.
- A description of the proposed discharge pathway and receiving surface water bodies.
- The results of records review and, if warranted, necessary and appropriate consultations with local, state and federal authorities regarding endangered species, designated critical habitat, essential fish habitat, or historic places that could potentially be negatively affected by the proposed discharge.
- The signatures of the authorized representatives of the parties applying for coverage under this permit.

The proposed discharge is to a culvert that is part of the City of Brockton municipal storm water drainage system, which is regulated under NPDES storm water general permit MAR041098. This

portion of the system discharges water to West Meadow Brook and is one of 19 identified storm water outfalls to West Meadow Brook that Notice of Intent submitted in 2003 by the City. HETI anticipates that urban storm water runoff contains entrained petroleum hydrocarbons released from incidental operation of motor vehicles and other point and non-point sources. The nature and quality of the municipal storm water discharge is relevant to the proposed RGP discharge.

Best Management Practices

The proposed treatment works are a "new discharger" as defined in Part II of the RGP, "General Provisions." Therefore, the permittees will develop and implement a Best Management Practices Plan (BMPP) prior to initiating discharge. A copy of the BMPP will be maintained on-site.

Request for Authorization to Discharge

On behalf of Mr. Brown, HETI requests that USEPA-New England review this application to determine if coverage under the RGP is appropriate and issue a notification letter to both Mr. Brown and HETI documenting its findings.

Please feel free to contact the undersigned at 978-263-4044 if you should have any questions regarding this letter.

Sincerely,
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.



Kevin J. Scully
Senior Project Geologist

Attachments

Remediation General Permit Notice Of Intent
Summary of Untreated Influent Analytical Results
Figure 1 - Site Location Map
Figure 2 - Proposed Discharge Pathway
Figure 3 - Nearby Sensitive Receptor Map
Figure 4 - Conceptual Treatment System Sketch
Receiving Water Body Flow Estimate Supporting Documents
Laboratory Reports

cc: G. Brown

**National Pollutant Discharge Elimination System
Remediation General Permit - Notice of Intent
Massachusetts (MAG910000)**

332 West Street
Brockton, Massachusetts

1. General Site Information

a) Facility/Site

Name:	Residence	Geographic Coordinates (NAD83) 42° 04' 39.55"N 71° 02' 37.72"W -----	
Address:	332 West Street Brockton, MA 02301	Phone:	n/a
		Fax:	n/a
		Email:	n/a

b) Owner

Name:	Gilbert Brown	Contact:	Gilbert Brown
Address:	332 West Street Brockton, Ma 02301	Phone:	508-580-1963
		Fax:	
		Email::	
Owner is (check one): 1. Federal 2. State/Tribal 3. Private ☒ 4. other, if so, describe:			

c) Operator

Name:	Hydro-Environmental Technologies, Inc. (HETI)	Contact:	Kevin J. Scully, LSP / Senior Project Geologist
Address:	54 Nonset Path Acton, MA 01720 Middlesex County	Phone:	978-263-4044 x 232
		Fax:	978-635-0980
		Email:	kevins@HydroEnvironmental.com

d) Check "yes" or "no" for the following: 1. Has a prior NPDES permit exclusion been granted for the discharge? <u>No</u> 2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge? <u>No</u> 3. Is the discharge a "new discharge" as defined by 40 CFR 122.2? <u>Yes</u> 4. For sites in Massachusetts, is the discharge covered under the MA Contingency Plan (MCP) and exempt from state permitting? <u>Yes</u>	
e) Is site/facility subject to any State permitting or other action which is causing the generation of discharge? <u>Yes</u> 1. Site identification # assigned by the state of NH or MA: <u>MADEP Release Tracking Number (RTN) 4-21613</u> 2. Permit or license # assigned: <u>n/a</u> 3. State agency contact information: name, location, and telephone number: <u>Massachusetts Department of Environmental Protection, Southeast Region Office, 508-946-2700</u>	
f) Is the site/facility covered by any other EPA permit, including: 1. Multi-sector stormwater general permit? <u>No</u> 2. Phase I or II construction stormwater general permit? <u>No</u> 3. Individual NPDES permit? <u>No</u> 4. Any other water quality related permit? <u>No</u>	

**National Pollutant Discharge Elimination System
Remediation General Permit - Notice of Intent
Massachusetts (MAG910000)**

332 West Street
Brockton, Massachusetts

2. Discharge information.

a) Describe the discharge activities for which the owner/applicant is seeking coverage: The proposed discharge consists of treated groundwater generated from dewatering of a remedial soil excavation. The excavation will be performed as part of the efforts to cleanup a release of No. 2 fuel oil to soil, groundwater, and surface water from a residential underground storage tank (UST). Refer to Section 4 for a description of the proposed treatment system. Groundwater and separate-phase fuel oil will be pumped from dewatering well points and from the open excavation as necessary using conventional methods. The recovered fluids will be routed to a central treatment system for processing and subsequent discharge from the site.	
1) Number of discharge points: <u>one (1)</u>	2) What is the maximum and average flow rate of discharge (in cubic feet per second, ft³/s)? Max. flow: <u>0.01 ft³/s (5 gpm)</u> Average flow: <u>0.004 to 0.01 ft³/s (2 to 5 gpm)</u> Is maximum flow a design value? <u>Yes</u>
3) Latitude and longitude of each discharge within 100 feet: <u>42° 04' 39.55"N 71° 02' 37.72"W₁</u>	4) If hydrostatic testing, total volume of the discharge (gals): <u>Not applicable</u>
5) a) Is the discharge intermittent _____ or seasonal _____? <u>Neither.</u> b) Is discharge ongoing Yes _____ No <u>X</u>? c) Expected dates of discharge (mm/dd/yy): <u>To be determined--anticipated to begin during January 2009. Duration of discharge is estimated to be approximately two (2) to three (3) weeks.</u> d) Please attach a line drawing or flow schematic showing water flow through the facility including: 1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s). <u>See Attached.</u>	

**National Pollutant Discharge Elimination System
Remediation General Permit - Notice of Intent
Massachusetts (MAG910000)**

332 West Street
Brockton, Massachusetts

3. Contaminant Information

The Contaminant of Concern is No.2 heating oil. See attached table for analytical results.

4. Treatment System Information

a) Description

Refer to Sections 2 and 3 for a description of the proposed discharge and contaminant information.

The proposed treatment system is anticipated to include sequential treatment using physical separation of particulates and recovered non-aqueous phase liquid (NAPL) fuel oil, if present, using fractionation (frac) tanks and/or an oil-water separator followed by removal of dissolved-phase contaminants using granular activated carbon (GAC). At least two carbon vessels arranged in series will be utilized to treat the water. Particulate filtration using bag or sand filters may also be included. Equipment will be appropriately sized for the anticipated flow and will provide adequate contact time with adsorptive filtration media to remove dissolved contaminants in compliance with the maximum discharge limits specified in Appendix III - Effluent Limitations of the RGP and other discharge standards promulgated by authorities with jurisdiction over the proposed discharge.

b) Identify each applicable treatment unit (check all that apply):

Frac tank X

Air Stripper

Oil-Water
Separator

Equalization Tanks

Bag Filter X

GAC Filter X

Chlorination

Dechlorination

Other (please describe):

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

Design flow rate of treatment system 2 gpm Maximum flow rate of treatment system 5 gpm Average flow rate of discharge 2 to 5 gpm

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

No additives are anticipated for this treatment system.

**National Pollutant Discharge Elimination System
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332 West Street
Brockton, Massachusetts

5. Receiving Surface Water

a) Identify the discharge pathway: Direct _____ Within facility _____ Storm Drain <u>X</u> River/brook _____ Wetlands _____ Other (describe): _____
b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters: <u>The treatment system will use the existing connection of the basement sump pump to the storm drain system for the area of Brockton east of West Street, which discharges to unnamed stream on the Thorny Lea Golf course. This Thorny Lee stream ultimately discharges to the West Meadow Stream, a tributary of the Town River, in West Bridgewater (Taunton River Basin)</u>
c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water: <u>See Attached</u> 1. For multiple discharges, number the discharges sequentially. - Not Applicable 2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water - Not Applicable The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.
d) Provide the state water quality classification of the receiving water <u>Class B (314 CMR 4.00), specified for the Town River and tributaries (i.e. West Meadow Brook) not otherwise classified</u>
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water: Please attach any calculation sheets used to support stream flow and dilution calculations. <u>0.016 cfs at storm drain at outfall of Thorny Lee Golf Course entering into subsurface culvert draining towards West Meadow Brook</u> Flows estimated using StreamStats at http://streamstats.usgs.gov/mastreamstats/index.asp . Basin maps and output data are attached.
f) Is the receiving water a listed 303(d) water quality impaired or limited water? No Is there a TMDL? Yes _____ No <u>X</u> If yes, for which pollutant(s)? _____

6. Results of Consultation with Federal Services:

Please provide the following information according to requirements of Part I.B.4 and Appendices II and VII.

a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes _____ No <u>X</u> Has any consultation with the federal services been completed? Yes _____ No <u>X</u> or is consultation underway? Yes _____ No <u>X</u> What were the results of the consultation with the U.S. Fish and Wildlife Service and/or National Marine 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?
b) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or site or in proximity to the discharge? Yes _____ No <u>X</u> <u>Review of MassGIS and Massachusetts Cultural Resource Information System (MACRIS)</u> Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes _____ No <u>X</u>

**National Pollutant Discharge Elimination System
Remediation General Permit - Notice of Intent
Massachusetts (MAG910000)**

332 West Street
Brockton, Massachusetts

7. Supplemental Information

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

The proposed discharge is to a culvert that is part of the City of Brockton municipal storm water drainage system, which is regulated under NPDES storm water general permit MAR041098. This portion of the system discharges water to West Meadow Brook and is one of 19 identified storm water outfalls to West Meadow Brook that Notice of Intent submitted in 2003 by the City. HETI anticipates that urban storm water runoff contains entrained petroleum hydrocarbons released from incidental operation of motor vehicles and other point and non-point sources. The nature and quality of the municipal storm water discharge is relevant to the proposed RGP discharge.

8. Signature Requirement

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

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility/Site Name: Brown Residence, 332 West Street Brockton, Massachusetts (MADEP RTN 4-21613)

Hydro-Environmental Technologies, Inc.

Mr. Gilbert Brown

Operator signature: _____



Title: Senior Project Geologist

Date: 19 Dec 2008

Summary of Untreated Influent Analytical Results
332 West Street
Brockton, MA

PARAMETER	Believe Absent	Believe Present	Analytical Method Used	Method Type	Sample Type	Samples Tested	Minimum Sample MRL	Maximum Daily Values		Average Daily Values	
								Concentration	Mass (kg)	Concentration	Mass (kg)
1. Total Suspended Solids		X	SM2540D		grab	1	10	140	0.002	140	0.002
2. Total Residual Chlorine	X		SM 4500-Cl G		grab	1	200	ND	--	ND	--
3. Total Petroleum Hydrocarbons		X	EPA 1664	(LLE), gravimetric	grab	1	5000	58,000	0.632	0	0.000
4. Cyanide	X		EPA 9012A		grab	1	10	ND	--	ND	--
5. Benzene		X	EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	17	0.000	17.0	0.000
6. Toluene		X	EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	52	0.001	52.0	0.001
7. Ethylbenzene		X	EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	16	0.000	16.0	0.000
8. (m,p,o) Xylenes		X	EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	510	0.006	510.0	0.006
9. Total BTEX		X	EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	595	0.006	595.0	0.006
10. Ethylene Dibromide (1,2- Dibromomethane)	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
11. Methyl-tert-Butyl Ether (MtBE)		X	EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	5	0.000	5.0	0.000
12. tert-Butyl Alcohol (TBA)	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
13. tert-Amyl Methyl Ether (TAME)	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
14. Naphthalene		X	EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	460	0.005	460.0	0.005
15. Carbon Tetrachloride	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
16. 1,4 Dichlorobenzene	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
17. 1,2 Dichlorobenzene	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
18. 1,3 Dichlorobenzene	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
19. 1,1 Dichloroethane	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
20. 1,2 Dichloroethane	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
21. 1,1 Dichloroethylene	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
22. cis-1,2 Dichloroethylene	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
23. Dichloromethane (Methylene Chloride)	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	25	ND	--	ND	--
24. Tetrachloroethylene	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
25. 1,1,1 Trichloroethane	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
26. 1,1,2 Trichloroethane	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
27. Trichloroethylene	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
28. Vinyl Chloride	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5	ND	--	ND	--
29. Acetone	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	100	ND	--	ND	--
30. 1,4 Dioxane	X		EPA 602/EPA 8260B	GC/FID or GC/MS	grab	1	5000	ND	--	ND	--

Summary of Untreated Influent Analytical Results
332 West Street
Brockton, MA

PARAMETER	Believe Absent	Believe Present	Analytical Method Used	Method Type	Sample Type	Samples Tested	Minimum Sample MRL	Maximum Daily Values Concentration Mass (kg)		Average Daily Values Concentration Mass (kg)	
31. Total Phenols		X	8270LL	GC/MS SIM	grab	1	5	16	0.000	16.0	0.000
32. Pentachlorophenol	X		8270LL	GC/MS SIM	grab	1	10	ND	--	ND	--
33. Total Phthalates 5 (Phthalate esthers)	X		8270LL	GC/MS SIM	grab	1	5	ND	--	ND	--
34. Bis (2-Ethylhexyl) Phthalate	X		8270LL	GC/MS SIM	grab	1	5	ND	--	ND	--
35. Total Group I PAHs									0.000		0.000
a. Benzo(a) Anthracene	X		8270LL	GC/MS SIM	grab	1	1	ND	--	ND	--
b. Benzo(a) Pyrene	X		8270LL	GC/MS SIM	grab	1	1	ND	--	ND	--
c. Benzo(b)Fluoranthene	X		8270LL	GC/MS SIM	grab	1	1	ND	--	ND	--
d. Benzo(k) Fluoranthene	X		8270LL	GC/MS SIM	grab	1	1	ND	--	ND	--
e. Chrysene	X		8270LL	GC/MS SIM	grab	1	1	ND	--	ND	--
f. Dibenzo(a,h) anthracene	X		8270LL	GC/MS SIM	grab	1	1	ND	--	ND	--
g. Indeno(1,2,3-cd) Pyrene	X		8270LL	GC/MS SIM	grab	1	1	ND	--	ND	--
36. Total Group II PAHs									0.000		0.000
h. Acenaphthene		X	8270LL	GC/MS SIM	grab	1	5.1	12	0.000	12.0	0.000
i. Acenaphthylene	X		8270LL	GC/MS SIM	grab	1	5.1	ND	--	ND	--
j. Anthracene	X		8270LL	GC/MS SIM	grab	1	5.1	ND	--	ND	--
k. Benzo(ghi) Perylene	X		8270LL	GC/MS SIM	grab	1	5.1	ND	--	ND	--
l. Fluoranthene	X		8270LL	GC/MS SIM	grab	1	5.1	ND	--	ND	--
m. Fluorene		X	8270LL	GC/MS SIM	grab	1	5.1	15	0.000	15.0	0.000
n. Naphthalene		X	8270LL	GC/MS SIM	grab	1	5.1	14	0.000	14.0	0.000
o. Phenanthrene		X	8270LL	GC/MS SIM	grab	1	5.1	23	0.000	23.0	0.000
p. Pyrene	X		8270LL	GC/MS SIM	grab	1	5.1	ND	--	ND	--
37. Total Polychlorinated Biphenyls	X		8082	GC/ECD	grab	1	0.2	ND	--	ND	--
38. Antimony	X		EPA 6010B	ICP	grab	1	50	ND	--	ND	--
39. Arsenic	X		EPA 6010B	ICP	grab	1	10	ND	--	ND	--
40. Cadmium	X		EPA 6010B	ICP	grab	1	10	ND	--	ND	--
41. Chromium III	X		EPA 6010B	ICP	grab	1	10	ND	--	ND	--
42. Chromium VI	X		EPA 7196A	Colormetric	grab	1	10	ND	--	ND	--
43. Copper		X	EPA 6010B	ICP	grab	1	5	15	0.000	15.0	0.000
44. Lead	X		EPA 6010B	ICP	grab	1	5	ND	--	ND	--

Summary of Untreated Influent Analytical Results
332 West Street
Brockton, MA

PARAMETER	Believe Absent	Believe Present	Analytical Method Used	Method Type	Sample Type	Samples Tested	Minimum Sample MRL	Maximum Daily Values		Average Daily Values	
								Concentration	Mass (kg)	Concentration	Mass (kg)
45. Mercury	X		EPA 7470	CVAA	grab	1	0.2	ND	--	ND	--
46. Nickel	X		EPA 6010B	ICP	grab	1	4	ND	--	ND	--
47. Selenium	X		EPA 6010B	ICP	grab	1	5	ND	--	ND	--
48. Silver	X		EPA 6010B	ICP	grab	1	7	ND	--	ND	--
49. Zinc		X	EPA 6010B	ICP	grab	1	10	9	0.000	9.0	0.000
50. Iron		X	EPA 6010B	ICP	grab	1	10	500	0.005	500.0	0.005
Other:		X							0.000	0.0	0.000
4-Isopropyltoluene			EPA 8260B	GC/MS	grab	0	5	7	0.000	7.0	0.000
n-Propylbenzene		X	EPA 8260B	GC/MS	grab	1	5	10	0.000	10.0	0.000
1,3,5-Trimethylbenzene		X	EPA 8260B	GC/MS	grab	1	5	85	0.001	85.0	0.001
1,2,4-Trimethylbenzene		X	EPA 8260B	GC/MS	grab	1	5	270	0.003	270.0	0.003
2-Methylnaphthalene		X	8270LL	GC/MS SIM	grab	1	5.1	83	0.001	83.0	0.001

Notes:

All concentrations in micrograms per liter (µg/L; parts per billion, ppb)

Kg = Kilograms

NS = Not Specified; NT = Not Tested; MRL = Sample Method Reporting Limit

GC = Gas Chromatograph

FID = Flame Ionization Detector; MS = Mass Spectrometer; ECD = Electron Capture Detector

SIM = Single Ion Method

AA = Atomic Adsorption; ICP = Inductively Coupled Plasma

"Total Phenols" represents the sum of 4-Chloro-3-methylphenol, 2-Chlorophenol, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 4,6-Dinitro-2-methylphenol, 2,4-Dinitrophenol, 2-Methylphenol, 3 and 4-Methylphenol, 2-Nitrophenol, 4-Nitrophenol, Phenol, 2,4,6-Trichlorophenol, and 2,4,5-Trichlorophenol.

"Total Phthalates" represents the sum of butylbenzylphthalate, di-n-butylphthalate, diethylphthalate, dimethylphthalate, and di-n-octylphthalate.

The estimates of daily mass discharge are based on a flow rate of 2 gpm over 24 hours.

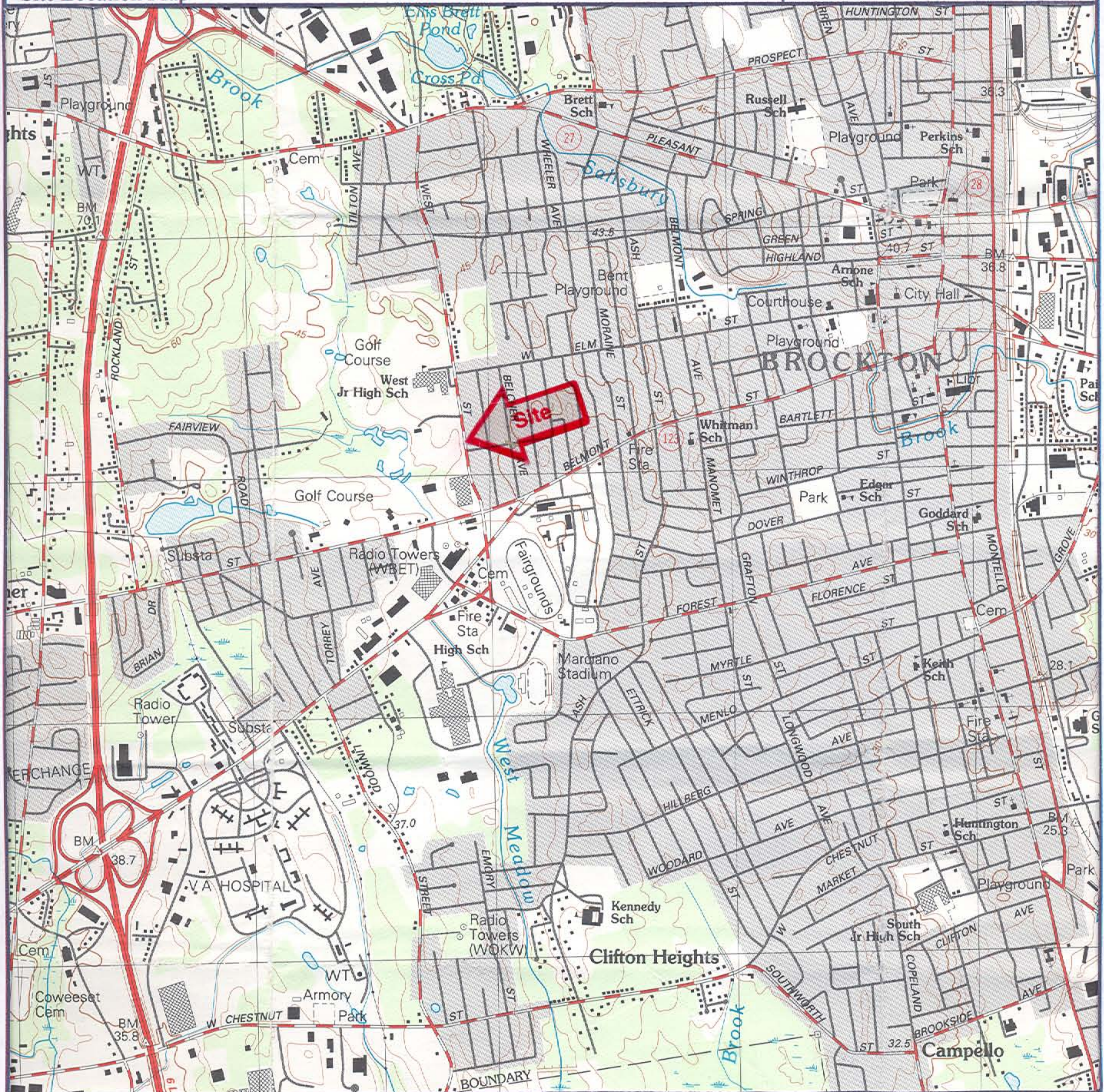
Brown Residence
332 West Street
Brockton, Massachusetts

Figure 1

Hydro
Environmental
Technologies, Inc.

54 Nonset Path
Acton, Massachusetts 01720

Site Location Map



Approximate Scale:

0 1,000 2,000



Feet

0 0.25 0.5



Miles



Source: U.S.G.S. Quadrangle

Brockton, MA (1987)

7.5 Minute Series

1:25,000

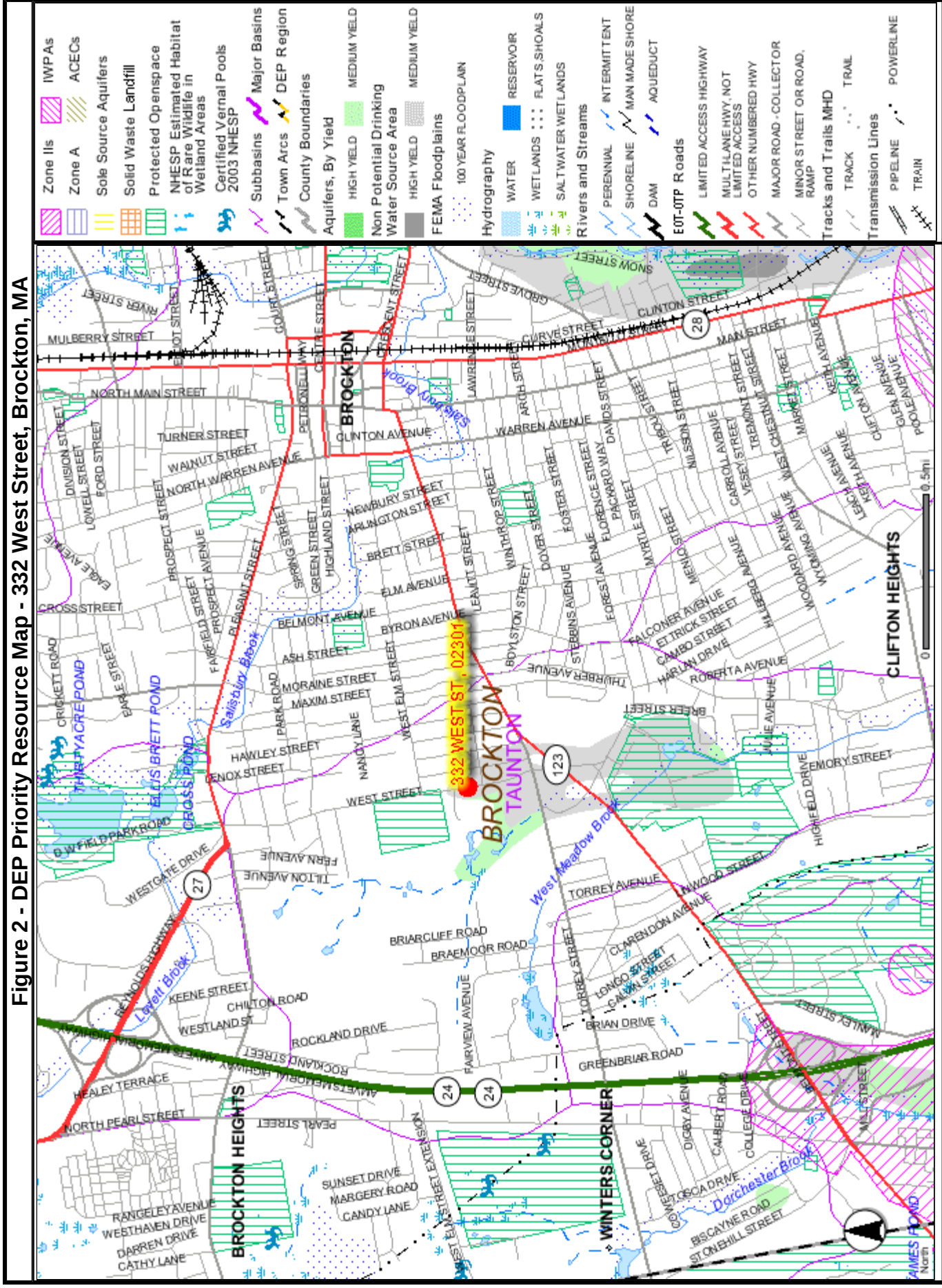
Date: 11/7/08

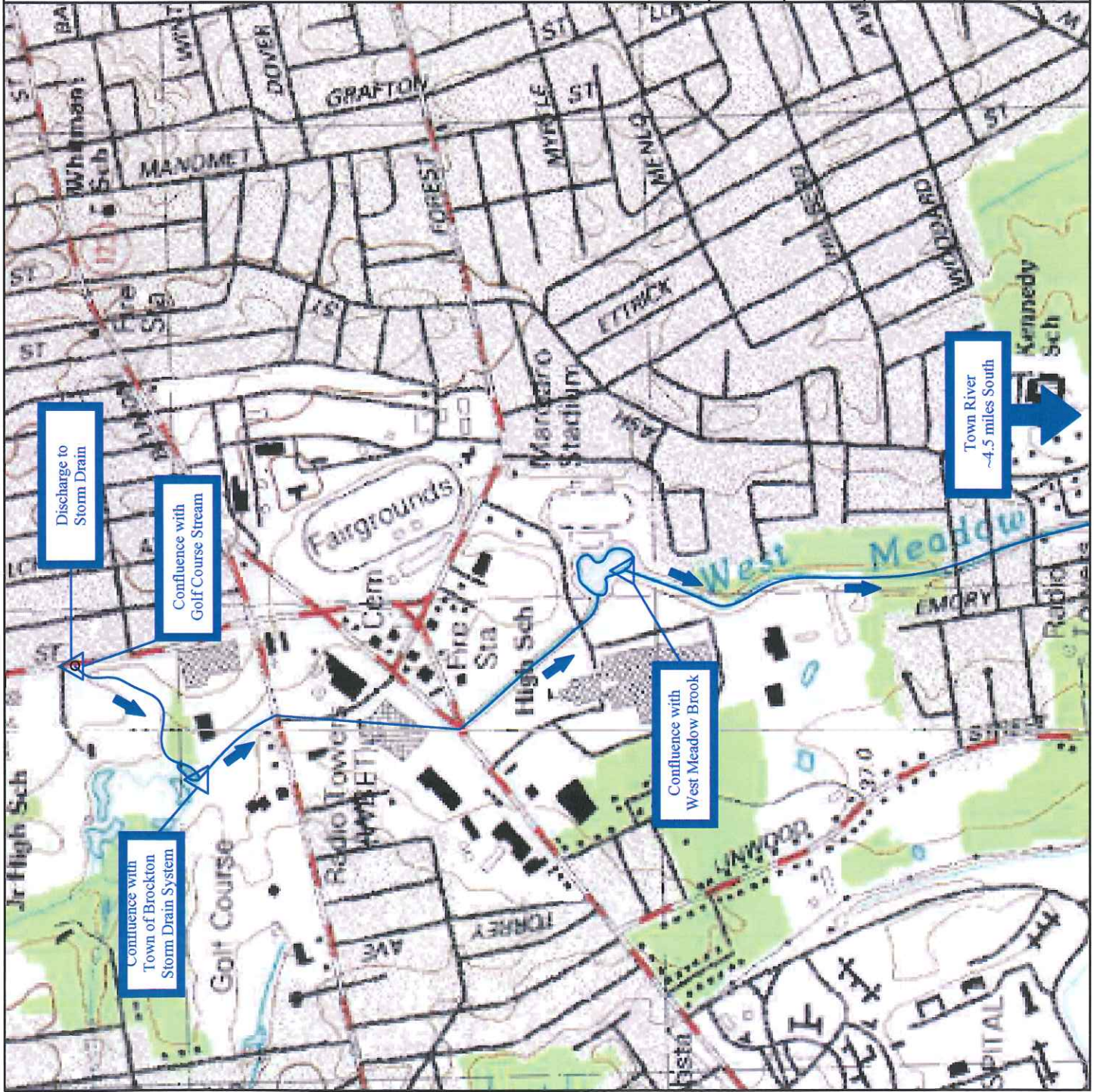
Current File: 013-073

Compiled By: EJ

Drafted By: EJ

Figure 2 - DEP Priority Resource Map - 332 West Street, Brockton, MA





Flow Direction

Notes:

- 1) The locations of indicated features are approximate.
- 2) Basemap from USGS, Brockton, MA Quadrangle (1987) topographic map

Date: 12/2008

Project: 013-073

Compiled: BW

Drawn: BW

0 Feet 1,000



Approximate Scale



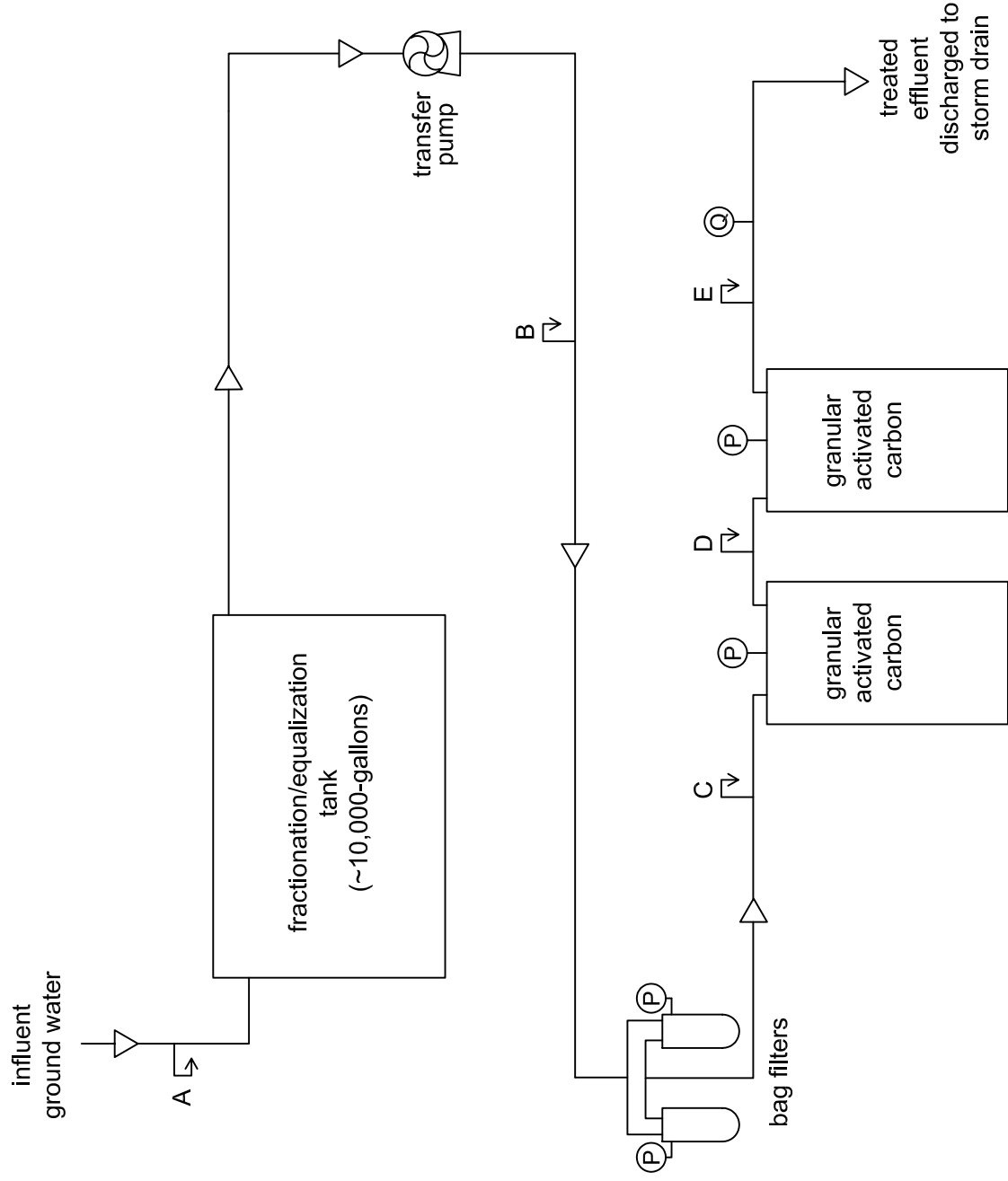
HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.
54 Nonset Path, Acton, MA 01720

Site: Brown Residence
332 West Street
Brockton, MA

Figure No. and Name

Figure 3

Proposed Discharge Pathway



- Ⓚ Totalizing flow meter
- Ⓟ Pressure indicator
- ↱ Sampling port

Sampling Ports:

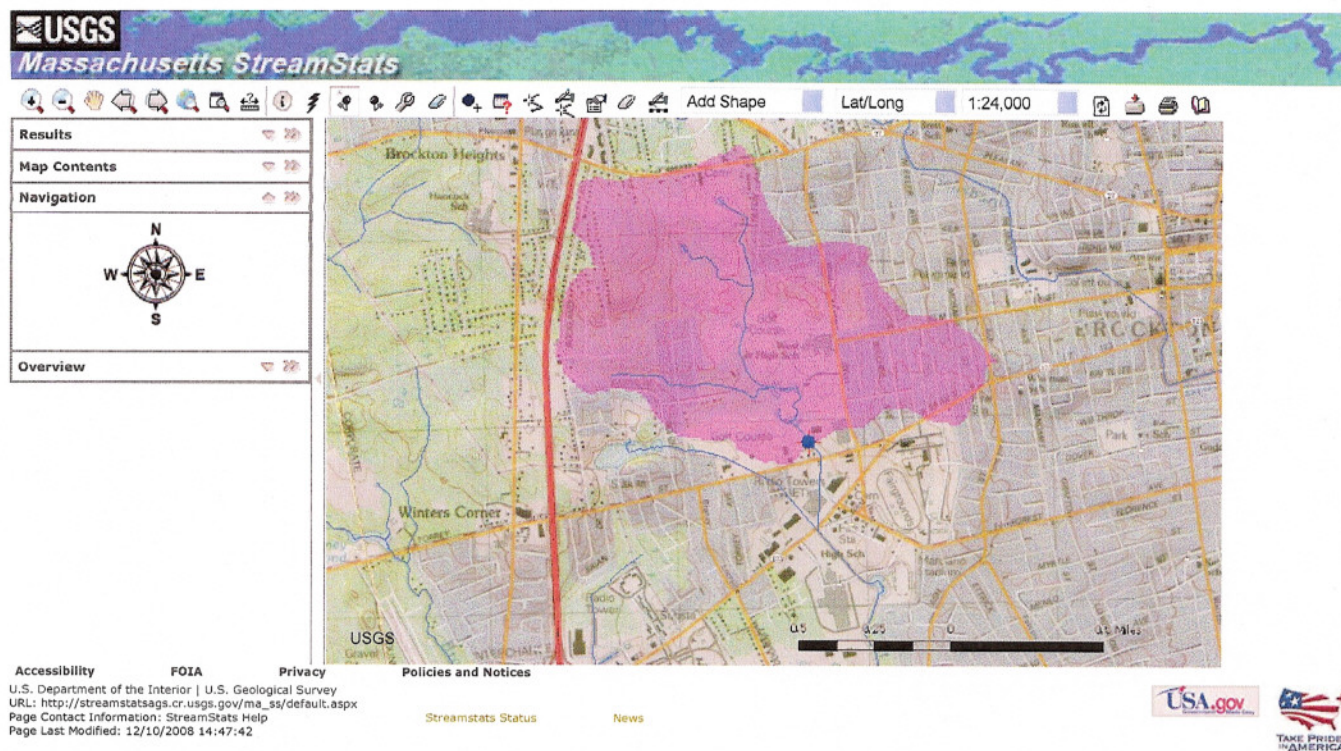
- A) Influent to frac tank
- B) Effluent from frac tank
- C) Influent to the lead GAC vessel
- D) Between the GAC vessels
- E) Treated System Effluent

Date: 12/2/2008
Project: 013-073
Compiled: grm/bw
Drawn: grm/bw

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.
54 Nonset Path, Acton, MA 01720

Site:
Gilbert Brown Residence
332 West Street
Brockton, MA

Figure No. and Name
Figure 4
Treatment Process
Diagram





Massachusetts StreamStats

Streamstats Ungaged Site Report

Date: Wed Dec 10 2008 12:59:00

Site Location: Massachusetts

NAD83 Latitude: 42.0748 (42 04 29)

NAD83 Longitude: -71.0459 (-71 02 45)

NAD27 Latitude: 42.0747 (42 04 28)

NAD27 Longitude: -71.0464 (-71 02 47)

Drainage Area: 0.87 mi²

Peak Flow Basin Characteristics			
100% Statewide Low Flow (0.87 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	0.87 (below min value 1.61)	1.61	149
Mean Basin Slope from 250K DEM (percent)	1.16	0.32	24.6
Stratified Drift per Stream Length (square mile per mile)	0.18	0	1.29
Massachusetts Region (dimensionless)	0	0	1

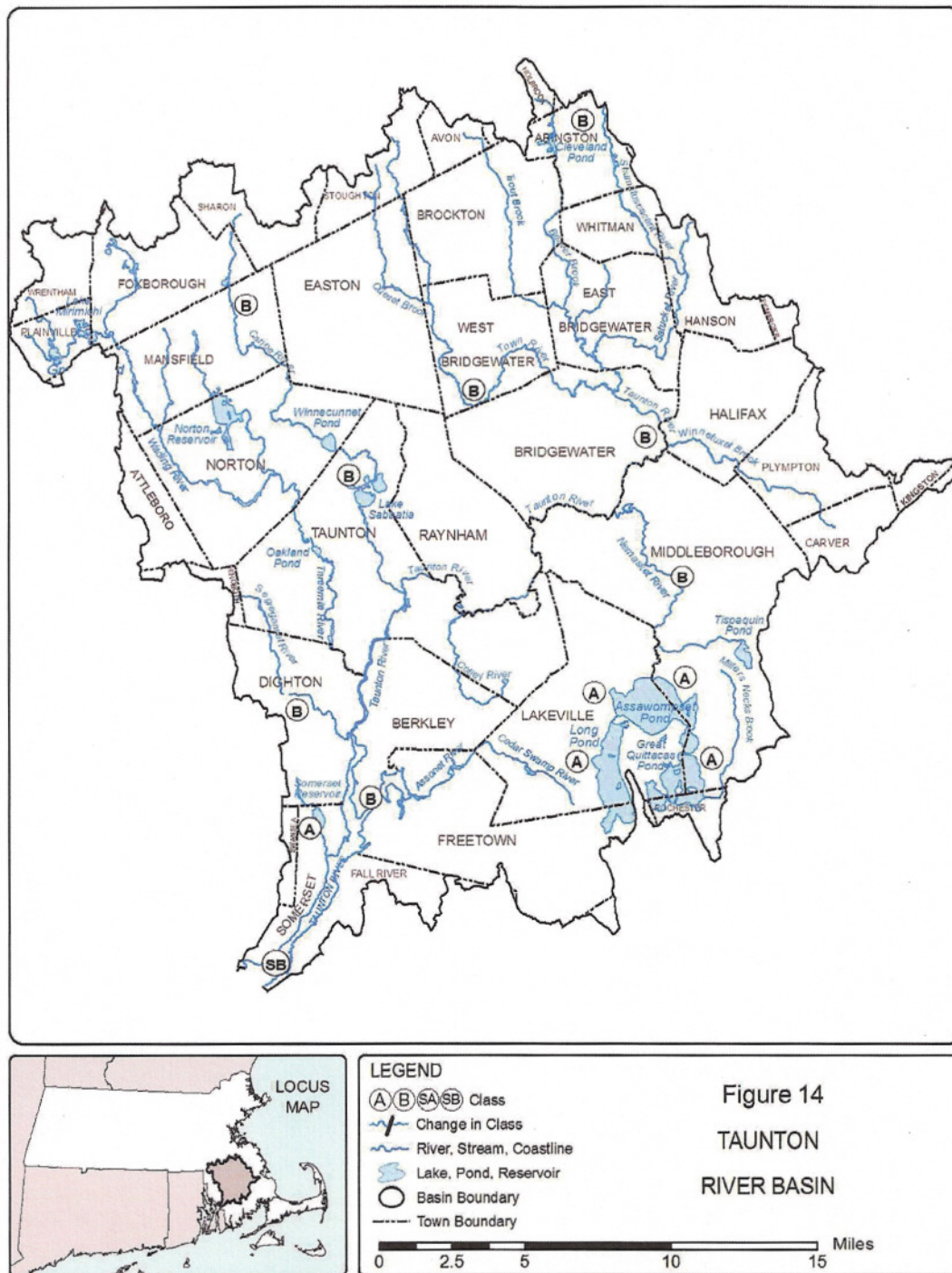
Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

Streamflow Statistics					
Statistic	Flow (ft ³ /s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
D50	0.83				
D60	0.56				
D70	0.33				
D75	0.25				
D80	0.19				
D85	0.13				
D90	0.0857				
D95	0.0439				
D98	0.0284				
D99	0.0195				
M7D2Y	0.0516				
AUGD50	0.14				
M7D10Y	0.0163				

*Massachusetts StreamStats***Basin Characteristics Report****Date:** Wed Dec 10 2008 13:00:52**NAD83 Latitude:** 42.0748 (42 04 29)**NAD83 Longitude:** -71.0459 (-71 02 45)**NAD27 Latitude:** 42.0747 (42 04 28)**NAD27 Longitude:** -71.0464 (-71 02 47)

Parameter	Value
Average area slope in percent	1.16
Total stream length in miles	2.02
low flow region indicator for Massachusetts	0
stratified drift per unit stream length	0.18
square mile area covered by stratified drift	0.37
Area in square miles	0.87

4.06: continued



December 15, 2008

Mr. Cedwyn Morgan
Hydro-Environmental Technologies, Inc.
54 Nonset Path
Acton, MA 01720

LABORATORY REPORT

Project: **332 West Street, Brockton, MA/013-073**
Lab ID: **122055**
Received: **12-03-08**

Dear Cedwyn:

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

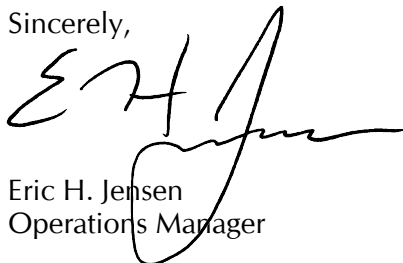
This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of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

Sample Receipt Report

Project: **332 West Street, Brockton, MA/013-073**
 Client: **Hydro-Environmental Technologies, Inc.**
 Lab ID: **122055**

Delivery: **GWA Courier**
 Airbill: **n/a**
 Lab Receipt: **12-03-08**

Temperature: **2.3°C**
 Chain of Custody: **Present**
 Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
122055-1	NPDES		Aqueous	12/2/08 13:20	EPA 8260B Volatile Organics				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1100685	40 mL VOA Vial	Proline	BX30537	HCL	R-5500D	05-14-08	06-17-08		
C1100675	40 mL VOA Vial	Proline	BX30537	HCL	R-5500D	05-14-08	06-17-08		
C1100673	40 mL VOA Vial	Proline	BX30537	HCL	R-5500D	05-14-08	06-17-08		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
122055-2	NPDES		Aqueous	12/2/08 13:20	EPA 8270C PAHs Low Level SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1021005	1 L Amber Glass	Proline	BX29647	None	n/a	n/a	02-28-08		
C1112542	1 L Amber Glass	Proline	BX31415	None	n/a	n/a	08-20-08		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
122055-3	NPDES		Aqueous	12/2/08 13:20	EPA 1664 Hexane Extractable Material				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1137821	1 L Amber Glass	Proline	BX31883	H2SO4	R-5697F	11-13-08	11-18-08		
C1137820	1 L Amber Glass	Proline	BX31883	H2SO4	R-5697F	11-13-08	11-18-08		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
122055-4	NPDES		Aqueous	12/2/08 13:20	EPA 7196A Hexavalent Chromium				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1079951	1 L Plastic	Proline	BX29930	None	n/a	n/a	03-28-08		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
122055-5	NPDES		Aqueous	12/2/08 13:20	EPA 6010B Cr Fe Ni Zn Cu Pb Sb As Cd Se AgTotal EPA 7196/EPA 6010 Trivalent Chromium				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1025799	500 mL Plastic	Proline	BX29424	HNO3	R-5458D	01-10-08	02-28-08		
C1045481	500 mL Plastic	Proline	BX30875	HNO3	R-5613C	06-13-08	08-20-08		

Data Certification

Project: 332 West Street, Brockton, MA/013-073
Client: Hydro-Environmental Technologies, Inc.

Lab ID: 122055
Received: 12-03-08 17:21

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 8260B:	122055-1					
EPA 8270C:	122055-2					
EPA 6010B:	122055-5					
EPA 7196A:	122055-4					
Sample Matrices:	Groundwater (X)	Soil/Sediment ()	Drinking Water ()	Other ()		
MCP SW-846	8260B (X)	8151A ()	8330 ()	6010B (X)	7470A/1A ()	
Methods Used	8270C (X)	8081A ()	VPH ()	6020A ()	9012A ² ()	
As specified in MA DEP Compendium of Analytical Methods. (check all that apply)	8082 ()	8021B ()	EPH ()	7000 S ³ (X)	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, <i>Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data</i> ?					Yes
D.	<u>VPH and EPH methods only:</u> 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:	12-15-08		

EPA Method 8260B Volatile Organics by GC/MS

Field ID: **NPDES**
Project: **332 West Street, Brockton, MA/013-073**
Client: **Hydro-Environmental Technologies, Inc.**

Laboratory ID: **122055-1**
Sampled: **12-02-08 13:20**
Received: **12-03-08 17:21**
Analyzed: **12-09-08 08:48**
Analyst: **LMG**

Matrix: **Aqueous**
Container: **40 mL VOA Vial**
Preservation: **HCl/ Cool**

QC Batch ID: **VM7-3066-W**
Instrument ID: **MS-7 HP 6890**
Sample Volume: **25 mL**
Dilution Factor: **10**

Page: 1 of 2

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	5
74-87-3	Chloromethane	BRL		ug/L	5
75-01-4	Vinyl Chloride	BRL		ug/L	5
74-83-9	Bromomethane	BRL		ug/L	5
75-00-3	Chloroethane	BRL		ug/L	5
75-69-4	Trichlorofluoromethane	BRL		ug/L	5
60-29-7	Diethyl Ether	BRL		ug/L	20
75-35-4	1,1-Dichloroethene	BRL		ug/L	5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	50
67-64-1	Acetone	BRL		ug/L	100
75-15-0	Carbon Disulfide	BRL		ug/L	50
75-09-2	Methylene Chloride	BRL		ug/L	25
156-60-5	<i>trans</i> - 1,2-Dichloroethene	BRL		ug/L	5
1634-04-4	Methyl <i>tert</i> - butyl Ether (MTBE)	5		ug/L	5
75-34-3	1,1-Dichloroethane	BRL		ug/L	5
594-20-7	2,2-Dichloropropane	BRL		ug/L	5
156-59-2	<i>cis</i> - 1,2-Dichloroethene	BRL		ug/L	5
78-93-3	2-Butanone (MEK)	BRL		ug/L	50
74-97-5	Bromochloromethane	BRL		ug/L	5
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	50
67-66-3	Chloroform	BRL		ug/L	5
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	5
56-23-5	Carbon Tetrachloride	BRL		ug/L	5
563-58-6	1,1-Dichloropropene	BRL		ug/L	5
71-43-2	Benzene	17		ug/L	5
107-06-2	1,2-Dichloroethane	BRL		ug/L	5
79-01-6	Trichloroethene	BRL		ug/L	5
78-87-5	1,2-Dichloropropane	BRL		ug/L	5
74-95-3	Dibromomethane	BRL		ug/L	5
75-27-4	Bromodichloromethane	BRL		ug/L	5
123-91-1	1,4-Dioxane	BRL		ug/L	5,000
10061-01-5	<i>cis</i> - 1,3-Dichloropropene	BRL		ug/L	4
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	50
108-88-3	Toluene	52		ug/L	5
10061-02-6	<i>trans</i> - 1,3-Dichloropropene	BRL		ug/L	4
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	5
127-18-4	Tetrachloroethene	BRL		ug/L	5
142-28-9	1,3-Dichloropropane	BRL		ug/L	5
591-78-6	2-Hexanone	BRL		ug/L	50
124-48-1	Dibromochloromethane	BRL		ug/L	5
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	5
108-90-7	Chlorobenzene	BRL		ug/L	5
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	5
100-41-4	Ethylbenzene	16		ug/L	5
108-38-3/106-42-3	<i>meta</i> - Xylene and <i>para</i> - Xylene	220		ug/L	5
95-47-6	<i>ortho</i> - Xylene	290		ug/L	5

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

Field ID: **NPDES**
Project: **332 West Street, Brockton, MA/013-073**
Client: **Hydro-Environmental Technologies, Inc.**
Laboratory ID: **122055-1**
Sampled: **12-02-08 13:20**
Received: **12-03-08 17:21**
Analyzed: **12-09-08 08:48**
Analyst: **LMG**

Matrix: **Aqueous**
Container: **40 mL VOA Vial**
Preservation: **HCl/ Cool**
QC Batch ID: **VM7-3066-W**
Instrument ID: **MS-7 HP 6890**
Sample Volume: **25 mL**
Dilution Factor: **10**

Page: 2 of 2

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
100-42-5	Styrene	BRL		ug/L	5
75-25-2	Bromoform	BRL		ug/L	5
98-82-8	Isopropylbenzene	BRL		ug/L	5
108-86-1	Bromobenzene	BRL		ug/L	5
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	5
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	5
103-65-1	<i>n</i> -Propylbenzene	10		ug/L	5
95-49-8	2-Chlorotoluene	BRL		ug/L	5
108-67-8	1,3,5-Trimethylbenzene	84		ug/L	5
106-43-4	4-Chlorotoluene	BRL		ug/L	5
98-06-6	<i>tert</i> -Butylbenzene	BRL		ug/L	5
95-63-6	1,2,4-Trimethylbenzene	270		ug/L	5
135-98-8	<i>sec</i> -Butylbenzene	6		ug/L	5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	5
99-87-6	4-Isopropyltoluene	7		ug/L	5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	5
104-51-8	<i>n</i> -Butylbenzene	11		ug/L	5
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	5
87-68-3	Hexachlorobutadiene	BRL		ug/L	5
91-20-3	Naphthalene	460		ug/L	5
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	5
75-65-0	<i>tert</i> -Butyl Alcohol (TBA)	BRL		ug/L	200
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	5
637-92-3	Ethyl <i>tert</i> -butyl Ether (ETBE)	BRL		ug/L	5
994-05-8	<i>tert</i> -Amyl Methyl Ether (TAME)	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	10	103 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	10	104 %	70 - 130 %
Toluene-d ₈	10	10	103 %	70 - 130 %
4-Bromofluorobenzene	10	9	91 %	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.

**EPA Method 8270C
Polynuclear Aromatic Hydrocarbons by GC/MS-SIM**

Field ID: **NPDES**
 Project: **332 West Street, Brockton, MA/013-073**
 Client: **Hydro-Environmental Technologies, Inc.**
 Laboratory ID: **122055-02**
 Sampled: **12-02-08 13:20**
 Received: **12-03-08 17:21**
 Extracted: **12-05-08 17:30**
 Analyzed: **12-10-08 03:52**
 Analyst: **MJB**

Matrix: **Aqueous**
 Container: **1 L Amber Glass**
 Preservation: **Cool**
 QC Batch ID: **SV-2324-F**
 Instrument ID: **MS-6 HP 6890**
 Sample Volume: **1,000 mL**
 Final Volume: **1 mL**
 Dilution Factor: **10**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	160		ug/L	5.0
91-57-6	2-Methylnaphthalene	450		ug/L	5.0
208-96-8	Acenaphthylene	8.1		ug/L	5.0
83-32-9	Acenaphthene	34		ug/L	5.0
86-73-7	Fluorene	45		ug/L	5.0
85-01-8	Phenanthrene	74		ug/L	5.0
120-12-7	Anthracene	8.8		ug/L	5.0
206-44-0	Fluoranthene	BRL		ug/L	5.0
129-00-0	Pyrene	9.7		ug/L	5.0
56-55-3	Benzo[a]anthracene	BRL		ug/L	1.0
218-01-9	Chrysene	BRL		ug/L	1.0
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	1.0
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	1.0
50-32-8	Benzo[a]pyrene	BRL		ug/L	1.0
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	1.0
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	1.0
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	1.0

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Nitrobenzene-d5	10	9.5	95 %	30 - 130 %
2-Fluorobiphenyl	10	9.1	91 %	30 - 130 %
Terphenyl-d14	10	9.6	96 %	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.

Inorganic Chemistry

Field ID: **NPDES**
 Project: **332 West Street, Brockton, MA/013-073**
 Client: **Hydro-Environmental Technologies, Inc.**

Matrix: **Aqueous**
 Received: **12-03-08 17:21**

Lab ID: **122055-03** Sampled: **12-02-08 13:20** Container: **1 L Amber Glass** Preservation: **H2SO4/Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Oil and Grease, Total	58	mg/L	5	1	960 mL	12-05-08 10:00	HO-0422-W	EPA 1664	2	CG

Lab ID: **122055-04** Sampled: **12-02-08 13:20** Container: **1 L Plastic** Preservation: **Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Chromium, Hexavalent	BRL	mg/L	0.01	1	5 mL	12-04-08 10:00	HC-0145-W	EPA 7196A	1	JK
Chromium, Trivalent	BRL	mg/L	0.01	1	50 mL	12-04-08 14:51	MB-3558-W	EPA 6010B	3	MR
(Total minus Hexavalent)				1	5 mL	12-04-08 10:00	HC-0145-W	EPA 7196A	1	JK

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: Thermo Electron Genesys 20
- 2 Instrument ID: Mettler AT 200 Balance
- 3 Instrument ID: ICP-1 PE 3000

Trace Metals

Field ID: **NPDES**
Project: **332 West Street, Brockton, MA/013-073**
Client: **Hydro-Environmental Technologies, Inc.**

Matrix: **Aqueous**
Container: **500 mL Plastic**
Preservation: **HNO₃ / Cool**
Preserved: **12-02-08 13:20**

Laboratory ID: **122055-5**
Sampled: **12-02-08 13:20**
Received: **12-03-08 17:21**

<u>Analysis Method</u>	<u>QC Batch ID</u>	<u>Prep Method</u>	<u>Prepared</u>	<u>Sample Volume</u>	<u>Instrument ID</u>	<u>Analyst</u>
EPA 6010B ¹	MB-3558-W	EPA 3010A	12-04-08 08:00	50 mL	ICP-1 PE 3000	MFP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-36-0	Antimony, Total	BRL		mg/L	0.05	1	12-04-08 14:51	EPA 6010B ¹
7440-38-2	Arsenic, Total	BRL		mg/L	0.01	1	12-04-08 14:51	EPA 6010B ¹
7440-43-9	Cadmium, Total	BRL		mg/L	0.004	1	12-04-08 14:51	EPA 6010B ¹
7440-47-3	Chromium, Total	BRL		mg/L	0.01	1	12-04-08 14:51	EPA 6010B ¹
7440-50-8	Copper, Total	0.015		mg/L	0.005	1	12-04-08 14:51	EPA 6010B ¹
7439-89-6	Iron, Total	0.5		mg/L	0.1	1	12-04-08 14:51	EPA 6010B ¹
7439-92-1	Lead, Total	BRL		mg/L	0.005	1	12-04-08 14:51	EPA 6010B ¹
7440-02-0	Nickel, Total	BRL		mg/L	0.04	1	12-04-08 14:51	EPA 6010B ¹
7782-49-2	Selenium, Total	BRL		mg/L	0.05	1	12-04-08 14:51	EPA 6010B ¹
7440-22-4	Silver, Total	BRL		mg/L	0.007	1	12-04-08 14:51	EPA 6010B ¹
7440-66-6	Zinc, Total	0.09		mg/L	0.01	1	12-04-08 14:51	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.

Project Narrative

Project: 332 West Street, Brockton, MA/013-073
Client: Hydro-Environmental Technologies, Inc.

Lab ID: 122055
Received: 12-03-08 17:21

A. Documentation and Client Communication

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

1. Sample 122055-1 was analyzed for EPA 8260B Full list and sample 122055-5 was analyzed for Cu, Pb, Sb, As, Cd, Se and Ag per Kevin Scully, 12-11-08.

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 6010B Note: Sample 122055-5. Sample was analyzed for selected target analytes, as requested by client.
2. EPA 8260B Note: Sample 122055-1. Sample was diluted prior to analysis. Dilution was required to keep all target analytes within calibration.
3. EPA 8270C Note: Sample 122055-2. Sample was analyzed for only selected polynuclear aromatic hydrocarbons (PAH) target analytes, as requested by client.
4. EPA 8270C PAH Note: Sample 122055-2. Sample was diluted prior to analysis. Dilution was required to keep all target analytes within calibration.

228 Main Street, P.O. Box 1200
Buzzards Bay, MA 02532
Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

ANALYSIS REQUEST

Project Number: 013-073		Address: 54 Wanset Path		City / State / Zip: Acton, MA 01720		Telephone: 978-263-4044		Project Manager: Cedwyn Morgan	
Project Name: Brian Williams		Address: 54 Wanset Path		City / State / Zip: Acton, MA 01720		Telephone: 978-263-4044		Project Manager: Cedwyn Morgan	
INSTRUCTIONS: Use separate line for each container (except replicates).									

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

CHAIN-OF-CUSTODY RECORD

REMARKS / SPECIAL INSTRUCTIONS		DATA QUALITY OBJECTIVES		CHAIN-OF-CUSTODY RECORD							
☒ 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.		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's Specific QC Required ☐ Sample Duplicate Selection of QC Sample ☐ Matrix Spike ☐ Please use sample: _____ ☐ Matrix Spike Duplicate				NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof. Relinquished by: <u>[Signature]</u> Date: <u>12/1/08</u> Time: <u>3:30</u> Received by: <u>HEM C.D. Soto</u> Relinquished by: <u>[Signature]</u> Date: <u>12/15/08</u> Time: <u>12:20</u> Received by: <u>[Signature]</u> 12/18 Relinquished by: <u>[Signature]</u> Date: <u>12/30/12</u> Time: _____ Received by: <u>[Signature]</u> Method of Shipment: ☒ GVA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ _____			
☒ YES ☐ NO CT RCP Data Certification required. Signature: <u>[Signature]</u>				Receipt Temperature: <u>2.3</u> ☐ Ice ☐ Refrigerated 2-6°C Recommended Container Count: <u>10</u> Shipping/Airbill Number: _____ 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.

Quality Control Report Laboratory Control Sample

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

Analyte	Units	Spiked	Measured	Recovery	QC Limits	Analyzed	QC Batch	Method	Inst	Analyst
Chromium, Hexavalent	mg/L	0.1	0.1	98 %	80 - 120 %	12-04-08 00:00	HC-0145-W	EPA 7196A	1	JK
Oil and Grease, Total	mg/L	40	36	90 %	78 - 114 %	12-05-08 10:00	HO-0422-W	EPA 1664	2	CG

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

**Quality Control Report
Method Blank**Category: **Inorganic Chemistry**Matrix: **Aqueous**

Analyte	Result	Units	RL	Analyzed	QC Batch	Method	Inst	Analyst
Chromium, Hexavalent	BRL	mg/L	0.01	12-04-08 00:00	HC-0145-W	EPA 7196A	1	JK
Oil and Grease, Total	BRL	mg/L	5	12-05-08 10:00	HO-0422-W	EPA 1664	2	CG

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: Thermo Electron Genesys 20

2 Instrument ID: Mettler AT 200 Balance

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-3558-WL	EPA 3010A	12-04-08 08:00	12-04-08 14:39	ICP-1 PE 3000	MFP
LCSD	EPA 6010B	MB-3558-WL	EPA 3010A	12-04-08 08:00	12-04-08 14:45	ICP-1 PE 3000	MFP

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits		Method
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
7440-36-0	Antimony	5.0	5.1	102%	5.0	4.9	99%	1 %	80-120 %	20 %	EPA 6010B
7440-38-2	Arsenic	5.0	5.2	103%	5.0	5.0	99%	2 %	80-120 %	20 %	EPA 6010B
7440-43-9	Cadmium	1.0	1.0	99%	1.0	1.0	96%	2 %	80-120 %	20 %	EPA 6010B
7440-47-3	Chromium	1.0	1.0	99%	1.0	1.0	95%	2 %	80-120 %	20 %	EPA 6010B
7440-50-8	Copper	1.0	1.0	99%	1.0	1.0	96%	2 %	80-120 %	20 %	EPA 6010B
7439-89-6	Iron	5.0	5.4	108%	5.0	5.3	105%	1 %	80-120 %	20 %	EPA 6010B
7439-92-1	Lead	5.0	4.7	95%	5.0	4.5	90%	3 %	80-120 %	20 %	EPA 6010B
7440-02-0	Nickel	1.0	1.0	100%	1.0	1.0	97%	2 %	80-120 %	20 %	EPA 6010B
7782-49-2	Selenium	5.0	5.0	101%	5.0	4.8	96%	3 %	80-120 %	20 %	EPA 6010B
7440-22-4	Silver	1.0	1.0	102%	1.0	1.0	99%	1 %	80-120 %	20 %	EPA 6010B
7440-66-6	Zinc	1.0	1.0	99%	1.0	1.0	96%	2 %	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.

Quality Control Report Method Blank

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

<u>Analysis Method</u>	<u>QC Batch ID</u>	<u>Prep Method</u>	<u>Prepared</u>	<u>Sample Volume</u>	<u>Instrument ID</u>	<u>Analyst</u>
EPA 6010B	MB-3558-WB	EPA 3010A	12-04-08 08:00	50 mL	ICP-1 PE 3000	MFP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-36-0	Antimony	BRL		mg/L	0.05	1	12-04-08 14:35	EPA 6010B
7440-38-2	Arsenic	BRL		mg/L	0.01	1	12-04-08 14:35	EPA 6010B
7440-43-9	Cadmium	BRL		mg/L	0.004	1	12-04-08 14:35	EPA 6010B
7440-47-3	Chromium	BRL		mg/L	0.01	1	12-04-08 14:35	EPA 6010B
7440-50-8	Copper	BRL		mg/L	0.025	1	12-04-08 14:35	EPA 6010B
7439-89-6	Iron	BRL		mg/L	0.1	1	12-04-08 14:35	EPA 6010B
7439-92-1	Lead	BRL		mg/L	0.005	1	12-09-08 20:05	EPA 6010B
7440-02-0	Nickel	BRL		mg/L	0.04	1	12-04-08 14:35	EPA 6010B
7782-49-2	Selenium	BRL		mg/L	0.05	1	12-04-08 14:35	EPA 6010B
7440-22-4	Silver	BRL		mg/L	0.007	1	12-04-08 14:35	EPA 6010B
7440-66-6	Zinc	BRL		mg/L	0.01	1	12-04-08 14:35	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.

Quality Control Report Laboratory Control Samples

Category: **EPA Method 8260B**
QC Batch ID: **VM7-3066-W**
Matrix: **Aqueous**
Units: **ug/L**

LCS
Instrument ID: **MS-7 HP 6890**
Analyzed: **12-09-08 06:32**
Analyst: **LMG**

LCSD
Instrument ID: **MS-7 HP 6890**
Analyzed: **12-09-08 07:49**
Analyst: **LMG**

Page: **1 of 2**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
75-71-8	Dichlorodifluoromethane	10	9.2	92 %	10	8.6	86 %	7 %	70 - 130 %	25%
74-87-3	Chloromethane	10	9.2	92 %	10	8.7	87 %	5 %	70 - 130 %	25%
75-01-4	Vinyl Chloride	10	10	102 %	10	9.6	96 %	6 %	70 - 130 %	25%
74-83-9	Bromomethane	10	12	116 %	10	11	114 %	2 %	70 - 130 %	25%
75-00-3	Chloroethane	10	10	101 %	10	9.3	93 %	8 %	70 - 130 %	25%
75-69-4	Trichlorofluoromethane	10	9.1	91 %	10	8.6	86 %	6 %	70 - 130 %	25%
60-29-7	Diethyl Ether	20	17	87 %	20	18	89 %	2 %	70 - 130 %	25%
75-35-4	1,1-Dichloroethene	10	8.3	83 %	10	8.1	81 %	3 %	70 - 130 %	25%
76-13-1	1,1,2-Trichlorotrifluoroethane	20	24	120 %	20	23	116 %	3 %	70 - 130 %	25%
67-64-1	Acetone	20	18	91 %	20	18	92 %	1 %	70 - 130 %	25%
75-15-0	Carbon Disulfide	20	16	81 %	20	15	77 %	5 %	70 - 130 %	25%
75-09-2	Methylene Chloride	10	8.9	89 %	10	9.1	91 %	2 %	70 - 130 %	25%
156-60-5	trans-1,2-Dichloroethene	10	8.7	87 %	10	8.3	83 %	5 %	70 - 130 %	25%
1634-04-4	Methyl tert-butyl Ether (MTBE)	10	10	101 %	10	9.5	95 %	6 %	70 - 130 %	25%
75-34-3	1,1-Dichloroethane	10	8.7	87 %	10	8.3	83 %	6 %	70 - 130 %	25%
594-20-7	2,2-Dichloropropane	10	11	106 %	10	8.8	88 %	19 %	70 - 130 %	25%
156-59-2	cis-1,2-Dichloroethene	10	9.0	90 %	10	8.8	88 %	2 %	70 - 130 %	25%
78-93-3	2-Butanone (MEK)	20	21	103 %	20	20	100 %	3 %	70 - 130 %	25%
74-97-5	Bromochloromethane	10	9.4	94 %	10	9.2	92 %	3 %	70 - 130 %	25%
109-99-9	Tetrahydrofuran (THF)	20	20	101 %	20	21	104 %	3 %	70 - 130 %	25%
67-66-3	Chloroform	10	9.0	90 %	10	8.4	84 %	7 %	70 - 130 %	25%
71-55-6	1,1,1-Trichloroethane	10	9.9	99 %	10	9.0	90 %	9 %	70 - 130 %	25%
56-23-5	Carbon Tetrachloride	10	8.4	84 %	10	8.1	81 %	4 %	70 - 130 %	25%
563-58-6	1,1-Dichloropropene	10	9.1	91 %	10	8.5	85 %	7 %	70 - 130 %	25%
71-43-2	Benzene	10	9.1	91 %	10	8.4	84 %	7 %	70 - 130 %	25%
107-06-2	1,2-Dichloroethane	10	8.6	86 %	10	8.2	82 %	5 %	70 - 130 %	25%
79-01-6	Trichloroethene	10	8.4	84 %	10	7.9	79 %	6 %	70 - 130 %	25%
78-87-5	1,2-Dichloropropane	10	9.6	96 %	10	9.1	91 %	5 %	70 - 130 %	25%
74-95-3	Dibromomethane	10	9.5	95 %	10	9.4	94 %	1 %	70 - 130 %	25%
75-27-4	Bromodichloromethane	10	10	100 %	10	9.8	98 %	2 %	70 - 130 %	25%
123-91-1	1,4-Dioxane	200	210	103 %	200	190	97 %	6 %	70 - 130 %	25%
10061-01-5	cis-1,3-Dichloropropene	10	8.7	87 %	10	8.3	83 %	4 %	70 - 130 %	25%
108-10-1	4-Methyl-2-Pentanone (MIBK)	20	20	102 %	20	21	103 %	2 %	70 - 130 %	25%
108-88-3	Toluene	10	8.4	84 %	10	8.1	81 %	4 %	70 - 130 %	25%
10061-02-6	trans-1,3-Dichloropropene	10	9.0	90 %	10	8.6	86 %	4 %	70 - 130 %	25%
79-00-5	1,1,2-Trichloroethane	10	10	102 %	10	10	101 %	1 %	70 - 130 %	25%
127-18-4	Tetrachloroethene	10	9.6	96 %	10	8.6	86 %	12 %	70 - 130 %	25%
142-28-9	1,3-Dichloropropane	10	11	106 %	10	10	100 %	6 %	70 - 130 %	25%
591-78-6	2-Hexanone	20	23	116 %	20	23	117 %	0 %	70 - 130 %	25%
124-48-1	Dibromochloromethane	10	11	105 %	10	10	103 %	2 %	70 - 130 %	25%
106-93-4	1,2-Dibromoethane (EDB)	10	10	102 %	10	9.9	99 %	3 %	70 - 130 %	25%
108-90-7	Chlorobenzene	10	10	100 %	10	9.1	91 %	9 %	70 - 130 %	25%
630-20-6	1,1,1,2-Tetrachloroethane	10	10	101 %	10	9.6	96 %	5 %	70 - 130 %	25%
100-41-4	Ethylbenzene	10	10	100 %	10	9.0	90 %	10 %	70 - 130 %	25%
108-38-3/106-42-3	meta- Xylene and para- Xylene	20	20	101 %	20	18	92 %	9 %	70 - 130 %	25%
95-47-6	ortho- Xylene	10	10	102 %	10	9.2	92 %	10 %	70 - 130 %	25%
100-42-5	Styrene	10	10	104 %	10	9.4	94 %	10 %	70 - 130 %	25%
75-25-2	Bromoform	10	10	100 %	10	9.7	97 %	3 %	70 - 130 %	25%
98-82-8	Isopropylbenzene	10	8.4	84 %	10	7.4	74 %	12 %	70 - 130 %	25%

Quality Control Report Laboratory Control Samples

Category: **EPA Method 8260B**
QC Batch ID: **VM7-3066-W**
Matrix: **Aqueous**
Units: **ug/L**

LCS
Instrument ID: **MS-7 HP 6890**
Analyzed: **12-09-08 06:32**
Analyst: **LMG**

LCSD
Instrument ID: **MS-7 HP 6890**
Analyzed: **12-09-08 07:49**
Analyst: **LMG**

Page: **2 of 2**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
108-86-1	Bromobenzene	10	10	102 %	10	9.3	93 %	10 %	70 - 130 %	25%
79-34-5	1,1,2,2-Tetrachloroethane	10	10	101 %	10	9.6	96 %	5 %	70 - 130 %	25%
96-18-4	1,2,3-Trichloropropane	10	11	107 %	10	11	110 %	3 %	70 - 130 %	25%
103-65-1	n-Propylbenzene	10	10	100 %	10	8.7	87 %	14 %	70 - 130 %	25%
95-49-8	2-Chlorotoluene	10	10	101 %	10	8.7	87 %	15 %	70 - 130 %	25%
108-67-8	1,3,5-Trimethylbenzene	10	9.7	97 %	10	8.5	85 %	13 %	70 - 130 %	25%
106-43-4	4-Chlorotoluene	10	10	100 %	10	9.0	90 %	10 %	70 - 130 %	25%
98-06-6	tert-Butylbenzene	10	9.8	98 %	10	8.6	86 %	13 %	70 - 130 %	25%
95-63-6	1,2,4-Trimethylbenzene	10	9.9	99 %	10	8.8	88 %	11 %	70 - 130 %	25%
135-98-8	sec-Butylbenzene	10	9.8	98 %	10	8.6	86 %	13 %	70 - 130 %	25%
541-73-1	1,3-Dichlorobenzene	10	9.9	99 %	10	8.8	88 %	11 %	70 - 130 %	25%
99-87-6	4-Isopropyltoluene	10	9.7	97 %	10	8.6	86 %	13 %	70 - 130 %	25%
106-46-7	1,4-Dichlorobenzene	10	9.5	95 %	10	8.8	88 %	8 %	70 - 130 %	25%
95-50-1	1,2-Dichlorobenzene	10	9.7	97 %	10	9.0	90 %	7 %	70 - 130 %	25%
104-51-8	n-Butylbenzene	10	9.9	99 %	10	8.6	86 %	15 %	70 - 130 %	25%
96-12-8	1,2-Dibromo-3-chloropropane	10	8.9	89 %	10	9.2	92 %	3 %	70 - 130 %	25%
120-82-1	1,2,4-Trichlorobenzene	10	9.8	98 %	10	9.2	92 %	7 %	70 - 130 %	25%
87-68-3	Hexachlorobutadiene	10	9.7	97 %	10	8.3	83 %	16 %	70 - 130 %	25%
91-20-3	Naphthalene	10	10	102 %	10	9.8	98 %	4 %	70 - 130 %	25%
87-61-6	1,2,3-Trichlorobenzene	10	11	107 %	10	10	100 %	7 %	70 - 130 %	25%
75-65-0	tert-Butyl Alcohol (TBA)	200	200	98 %	200	190	94 %	4 %	70 - 130 %	25%
108-20-3	Di-isopropyl Ether (DIPE)	10	9.3	93 %	10	9.4	94 %	1 %	70 - 130 %	25%
637-92-3	Ethyl tert-butyl Ether (ETBE)	10	8.7	87 %	10	8.7	87 %	1 %	70 - 130 %	25%
994-05-8	tert-Amyl Methyl Ether (TAME)	10	8.9	89 %	10	9.0	90 %	1 %	70 - 130 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	10	100 %	10	10	101 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	10	103 %	10	11	108 %	70 - 130 %
Toluene-d ₈	10	10	103 %	10	10	105 %	70 - 130 %
4-Bromofluorobenzene	10	10	97 %	10	10	95 %	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.

Quality Control Report Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM7-3066-W**
Matrix: **Aqueous**

Instrument ID: **MS-7 HP 6890**
Analyzed: **12-09-08 08:18**
Analyst: **LMG**

Page: 1 of 2

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
156-60-5	<i>trans</i> - 1,2-Dichloroethene	BRL		ug/L	0.5
1634-04-4	Methyl <i>tert</i> - 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	<i>cis</i> - 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	<i>cis</i> - 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	<i>trans</i> - 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	<i>meta</i> - Xylene and <i>para</i> - Xylene	BRL		ug/L	0.5
95-47-6	<i>ortho</i> - 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

Quality Control Report Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM7-3066-W**
Matrix: **Aqueous**

Instrument ID: **MS-7 HP 6890**
Analyzed: **12-09-08 08:18**
Analyst: **LMG**

Page: 2 of 2

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
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
103-65-1	<i>n</i> -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	<i>tert</i> -Butylbenzene	BRL		ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	BRL		ug/L	0.5
135-98-8	<i>sec</i> -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	<i>n</i> -Butylbenzene	BRL		ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	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	<i>tert</i> -Butyl Alcohol (TBA)	BRL		ug/L	0.5
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	20
637-92-3	Ethyl <i>tert</i> -butyl Ether (ETBE)	BRL		ug/L	0.5
994-05-8	<i>tert</i> -Amyl Methyl Ether (TAME)	BRL		ug/L	0.5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	10	102 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	10	100 %	70 - 130 %
Toluene-d ₈	10	10	104 %	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.

Quality Control Report Laboratory Control Samples

Category:	EPA Method 8270C PAHs	LCS	Instrument ID:	MS-6 HP 6890	LCSD	Instrument ID:	MS-6 HP 6890
QC Batch ID:	SV-2324-F	Extracted:	12-05-08 17:30	Extracted:	12-05-08 17:30	Analized:	12-08-08 17:48
Matrix:	Aqueous	Analized:	12-08-08 17:08	Analized:	12-08-08 17:48	Analyst:	MJB
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	3.4	68 %	5.0	3.5	69 %	1 %	40 - 140 %	25%
91-57-6	2-Methylnaphthalene	5.0	3.1	62 %	5.0	3.1	63 %	0 %	40 - 140 %	25%
208-96-8	Acenaphthylene	5.0	4.3	87 %	5.0	4.5	89 %	3 %	40 - 140 %	25%
83-32-9	Acenaphthene	5.0	3.9	78 %	5.0	3.9	78 %	0 %	40 - 140 %	25%
86-73-7	Fluorene	5.0	4.5	90 %	5.0	4.6	91 %	2 %	40 - 140 %	25%
85-01-8	Phenanthrene	5.0	4.1	82 %	5.0	4.1	83 %	0 %	40 - 140 %	25%
120-12-7	Anthracene	5.0	4.6	92 %	5.0	4.7	93 %	1 %	40 - 140 %	25%
206-44-0	Fluoranthene	5.0	4.4	88 %	5.0	4.5	89 %	2 %	40 - 140 %	25%
129-00-0	Pyrene	5.0	4.1	83 %	5.0	4.1	82 %	1 %	40 - 140 %	25%
56-55-3	Benzo[a]anthracene	5.0	4.2	84 %	5.0	4.2	85 %	1 %	40 - 140 %	25%
218-01-9	Chrysene	5.0	4.3	86 %	5.0	4.3	85 %	1 %	40 - 140 %	25%
205-99-2	Benzo[b]fluoranthene	5.0	4.6	93 %	5.0	4.7	94 %	1 %	40 - 140 %	25%
207-08-9	Benzo[k]fluoranthene	5.0	4.5	90 %	5.0	4.6	92 %	2 %	40 - 140 %	25%
50-32-8	Benzo[a]pyrene	5.0	4.6	91 %	5.0	4.7	93 %	2 %	40 - 140 %	25%
193-39-5	Indeno[1,2,3-c,d]pyrene	5.0	4.3	85 %	5.0	4.4	88 %	3 %	40 - 140 %	25%
53-70-3	Dibenzo[a,h]anthracene	5.0	4.3	86 %	5.0	4.3	86 %	1 %	40 - 140 %	25%
191-24-2	Benzo[g,h,i]perylene	5.0	4.3	86 %	5.0	4.3	86 %	1 %	40 - 140 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
Nitrobenzene-d5	10	8.7	87 %	10	8.7	87 %		30 - 130 %
2-Fluorobiphenyl	10	8.2	82 %	10	8.1	81 %		30 - 130 %
Terphenyl-d14	10	8.7	87 %	10	9.1	91 %		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.

**Quality Control Report
Method Blank**

Category: **EPA Method 8270C-SIM PAHs**
QC Batch ID: **SV-2324-F**
Matrix: **Aqueous**

Instrument ID: **MS-6 HP 6890**
Extracted: **12-05-08 17:30**
Analyzed: **12-08-08 18:28**
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

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Nitrobenzene-d5	10	9.3	93 %	30 - 130 %
2-Fluorobiphenyl	10	8.8	88 %	30 - 130 %
Terphenyl-d14	10	10	101 %	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.

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,

Asbestos Analytical Services, Class A

Division of Occupational Safety, AA000195

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>

NIST NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP)

NVLAP Lab Code 200751-1

Bulk Asbestos Fiber Analysis (PLM)

<http://ts.nist.gov/Standards/scopes/plmtm.htm>

RHODE ISLAND

Department of Health,

Potable and Non-Potable Water Microbiology, Organic and Inorganic Chemistry

Division of Laboratories, LAO00054

<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

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
Antimony	EPA 200.9
Arsenic	EPA 200.8
Arsenic	EPA 200.9
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
Lead	EPA 200.9
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
Selenium	EPA 200.9
Silver	EPA 200.7
Silver	EPA 200.8
Sodium	EPA 200.7
Sulfate	EPA 300.0
Thallium	EPA 200.8
Thallium	EPA 200.9
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	Lachat 10-303-31-1-A
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
Antimony	EPA 200.9
Arsenic	EPA 200.7
Arsenic	EPA 200.8
Arsenic	EPA 200.9
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
Copper	EPA 200.9
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 (CaCO ₃), Total	EPA 200.7
Hardness (CaCO ₃), 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
Lead	EPA 200.9
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
Nickel	EPA 200.9
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Non-Filterable Residue	SM 2540-D
Oil and Grease	EPA 1664

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.

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
Selenium	EPA 200.9
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
Thallium	EPA 200.9
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

December 18, 2008

Mr. Kevin Scully
Hydro-Environmental Technologies, Inc.
54 Nonset Path
Acton, MA 01720

LABORATORY REPORT

Project: **Brockton/013 073**
Lab ID: **122334**
Received: **12-15-08**

Dear Kevin:

Enclosed are the analytical results for the above referenced project. The project was processed for Rush 3 Business Day turnaround.

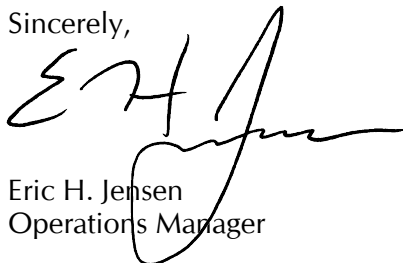
This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of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

Sample Receipt Report

Project: **Brockton/013 073** Delivery: **GWA Courier** Temperature: **3.7°C**
 Client: **Hydro-Environmental Technologies, Inc.** Airbill: **n/a** Chain of Custody: **Present**
 Lab ID: **122334** Lab Receipt: **12-15-08** Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
122334-1	RGP 2		Aqueous	12/15/08 10:30	EPA 8270C Semivolatile Organics (Low Level)				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1123023	1 L Amber Glass	Proline	BX32054	None	n/a	n/a	12-12-08		
C1123020	1 L Amber Glass	Proline	BX32054	None	n/a	n/a	12-12-08		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
122334-2	RGP 2		Aqueous	12/15/08 10:30	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1123022	1 L Amber Glass	Proline	BX32054	None	n/a	n/a	12-12-08		
C1123021	1 L Amber Glass	Proline	BX32054	None	n/a	n/a	12-12-08		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
122334-3	RGP 2		Aqueous	12/15/08 10:30	EPA 9012A Total Cyanide				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1147132	500 mL Plastic	Proline	BX31880	NaOH	R-5653B	11-10-08	12-12-08		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
122334-4	RGP 2		Aqueous	12/15/08 10:30	EPA 7470A Mercury by CVAA Total				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1136527	250 mL Plastic	Proline	BX31855	HNO3	R-5613F	11-18-08	12-12-08		

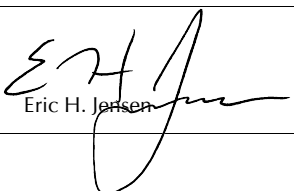
Lab ID	Field ID		Matrix	Sampled	Method				Notes
122334-5	RGP 2		Aqueous	12/15/08 10:30	SM 2540 D Total Suspended Solids				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1153565	1L Plastic	Proline	BX32171	None	n/a	n/a	12-12-08		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
122334-6	RGP 2		Aqueous	12/15/08 10:30	SM 4500-Cl G Total Residual Chlorine				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1103900	250 mL Glass	Industrial	BX31757	None	n/a	n/a	12-12-08		

Data Certification

Project: **Brockton/013 073**
Client: **Hydro-Environmental Technologies, Inc.**

Lab ID: **122334**
Received: **12-15-08 18:30**

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 8270C:	122334-1				
EPA 8082:	122334-2				
EPA 9012A:	122334-3				
Sample Matrices:	Groundwater (X)	Soil/Sediment ()	Drinking Water ()	Other ()	
MCP SW-846	8260B ()	8151A ()	8330 ()	6010B ()	7470A/1A ()
Methods Used	8270C (X)	8081A ()	VPH ()	6020A ()	9012A ² (X)
As specified in MA DEP Compendium of Analytical Methods.	8082 (X)	8021B ()	EPH ()	7000 S ³ ()	Other ()
(check all that apply)	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, <i>Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data</i> ?				Yes
D.	<u>VPH and EPH methods only:</u> 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?				No
F.	Were results for all analyte-list compounds/elements for the specified method(s) reported?				Yes
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:	12-18-08	

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

Field ID: **RGP 2**
Project: **Brockton/013 073**
Client: **Hydro-Environmental Technologies, Inc.**

Laboratory ID: **122334-01**
Sampled: **12-15-08 10:30**
Received: **12-15-08 18:30**
Extracted: **12-16-08 08:00**
Analyzed: **12-16-08 15:51**
Analyst: **MJB**

Matrix: **Aqueous**
Container: **1 L Amber Glass**
Preservation: **Cool**

QC Batch ID: **SV-2327-F**
Instrument ID: **MS-12 Agilent 6890**
Sample Volume: **990 mL**
Final Volume: **1 mL**
Dilution Factor: **1**

Page: 1 of 2

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	16		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	10
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

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

Field ID: **RGP 2**
Project: **Brockton/013 073**
Client: **Hydro-Environmental Technologies, Inc.**

Matrix: **Aqueous**
Container: **1 L Amber Glass**
Preservation: **Cool**

Laboratory ID: **122334-01**
Sampled: **12-15-08 10:30**
Received: **12-15-08 18:30**
Extracted: **12-16-08 08:00**
Analyzed: **12-16-08 15:51**
Analyst: **MJB**

QC Batch ID: **SV-2327-F**
Instrument ID: **MS-12 Agilent 6890**
Sample Volume: **990 mL**
Final Volume: **1 mL**
Dilution Factor: **1**

Page: 2 of 2

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- <i>n</i> -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- <i>n</i> -octyl phthalate	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	11	56 %	15 - 110 %
Phenol-d5	20	10	48 %	15 - 110 %
Nitrobenzene-d5	10	12	120 %	30 - 130 %
2-Fluorobiphenyl	10	10	98 %	30 - 130 %
2,4,6-Tribromophenol	20	22	111 % m	15 - 110 %
Terphenyl-d14	10	8	80 %	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.

m Surrogate recovery outside recommended limits due to sample matrix interference.

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

Field ID: **RGP 2**
Project: **Brockton/013 073**
Client: **Hydro-Environmental Technologies, Inc.**

Laboratory ID: **122334-01RA1**
Sampled: **12-15-08 10:30**
Received: **12-15-08 18:30**
Extracted: **12-16-08 08:00**
Analyzed: **12-16-08 16:35**
Analyst: **MJB**

Matrix: **Aqueous**
Container: **1 L Amber Glass**
Preservation: **Cool**

QC Batch ID: **SV-2327-F**
Instrument ID: **MS-12 Agilent 6890**
Sample Volume: **990 mL**
Final Volume: **1 mL**
Dilution Factor: **1**

Page: 1 of 2

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	15		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	10
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

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

Field ID: **RGP 2**
Project: **Brockton/013 073**
Client: **Hydro-Environmental Technologies, Inc.**

Matrix: **Aqueous**
Container: **1 L Amber Glass**
Preservation: **Cool**

Laboratory ID: **122334-01RA1**
Sampled: **12-15-08 10:30**
Received: **12-15-08 18:30**
Extracted: **12-16-08 08:00**
Analyzed: **12-16-08 16:35**
Analyst: **MJB**

QC Batch ID: **SV-2327-F**
Instrument ID: **MS-12 Agilent 6890**
Sample Volume: **990 mL**
Final Volume: **1 mL**
Dilution Factor: **1**

Page: 2 of 2

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- <i>n</i> -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- <i>n</i> -octyl phthalate	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	13	63 %	15 - 110 %
Phenol-d5	20	10	51 %	15 - 110 %
Nitrobenzene-d5	10	12	117 %	30 - 130 %
2-Fluorobiphenyl	10	10	96 %	30 - 130 %
2,4,6-Tribromophenol	20	23	115 % m	15 - 110 %
Terphenyl-d14	10	9	89 %	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.

m Surrogate recovery outside recommended limits due to sample matrix interference.

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

Field ID: **RGP 2**
Project: **Brockton/013 073**
Client: **Hydro-Environmental Technologies, Inc.**
Laboratory ID: **122334-01**
Sampled: **12-15-08 10:30**
Received: **12-15-08 18:30**
Extracted: **12-16-08 08:00**
Analyzed: **12-17-08 12:33**
Analyst: **MJB**

Matrix: **Aqueous**
Container: **1 L Amber Glass**
Preservation: **Cool**
QC Batch ID: **SV-2327-F**
Instrument ID: **MS-6 HP 6890**
Sample Volume: **990 mL**
Final Volume: **1 mL**
Dilution Factor: **10**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	17		ug/L	5.1
91-57-6	2-Methylnaphthalene	100		ug/L	5.1
208-96-8	Acenaphthylene	BRL		ug/L	5.1
83-32-9	Acenaphthene	15		ug/L	5.1
86-73-7	Fluorene	18		ug/L	5.1
85-01-8	Phenanthrene	29		ug/L	5.1
120-12-7	Anthracene	BRL		ug/L	5.1
206-44-0	Fluoranthene	BRL		ug/L	5.1
129-00-0	Pyrene	BRL		ug/L	5.1
56-55-3	Benzo[a]anthracene	BRL		ug/L	1.0
218-01-9	Chrysene	BRL		ug/L	1.0
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	1.0
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	1.0
50-32-8	Benzo[a]pyrene	BRL		ug/L	1.0
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	1.0
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	1.0
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	1.0
87-68-3	Hexachlorobutadiene	BRL		ug/L	5.1
118-74-1	Hexachlorobenzene	BRL		ug/L	5.1
87-86-5	Pentachlorophenol	BRL		ug/L	10

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	14	71 %	15 - 110 %
Phenol-d5	20	12	57 %	15 - 110 %
Nitrobenzene-d5	10	12	116 %	30 - 130 %
2-Fluorobiphenyl	10	9.0	89 %	30 - 130 %
2,4,6-Tribromophenol	20	27	135 % m	15 - 110 %
Terphenyl-d14	10	11	110 %	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.
m Surrogate recovery outside recommended limits due to sample matrix interference.

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

Field ID: **RGP 2**
Project: **Brockton/013 073**
Client: **Hydro-Environmental Technologies, Inc.**

Laboratory ID: **122334-01RA1**
Sampled: **12-15-08 10:30**
Received: **12-15-08 18:30**
Extracted: **12-16-08 08:00**
Analyzed: **12-17-08 13:14**
Analyst: **MJB**

Matrix: **Aqueous**
Container: **1 L Amber Glass**
Preservation: **Cool**

QC Batch ID: **SV-2327-F**
Instrument ID: **MS-6 HP 6890**
Sample Volume: **990 mL**
Final Volume: **1 mL**
Dilution Factor: **10**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	14		ug/L	5.1
91-57-6	2-Methylnaphthalene	83		ug/L	5.1
208-96-8	Acenaphthylene	BRL		ug/L	5.1
83-32-9	Acenaphthene	12		ug/L	5.1
86-73-7	Fluorene	15		ug/L	5.1
85-01-8	Phenanthrene	23		ug/L	5.1
120-12-7	Anthracene	BRL		ug/L	5.1
206-44-0	Fluoranthene	BRL		ug/L	5.1
129-00-0	Pyrene	BRL		ug/L	5.1
56-55-3	Benzo[a]anthracene	BRL		ug/L	1.0
218-01-9	Chrysene	BRL		ug/L	1.0
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	1.0
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	1.0
50-32-8	Benzo[a]pyrene	BRL		ug/L	1.0
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	1.0
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	1.0
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	1.0
87-68-3	Hexachlorobutadiene	BRL		ug/L	5.1
118-74-1	Hexachlorobenzene	BRL		ug/L	5.1
87-86-5	Pentachlorophenol	BRL		ug/L	10

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	16	79 %	15 - 110 %
Phenol-d5	20	12	61 %	15 - 110 %
Nitrobenzene-d5	10	12	116 %	30 - 130 %
2-Fluorobiphenyl	10	8.4	83 %	30 - 130 %
2,4,6-Tribromophenol	20	25	126 % m	15 - 110 %
Terphenyl-d14	10	12	121 %	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.
m Surrogate recovery outside recommended limits due to sample matrix interference.

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

Field ID: **RGP 2**
 Project: **Brockton/013 073**
 Client: **Hydro-Environmental Technologies, Inc.**
 Laboratory ID: **122334-02**
 Sampled: **12-15-08 10:30**
 Received: **12-15-08 18:30**
 Extracted: **12-16-08 10:00**
 Cleaned Up: **12-16-08 12:00**
 Analyzed: **12-16-08 21:06**
 Analyst: **AWG**

Matrix: **Aqueous**
 Container: **1 L Amber Glass**
 Preservation: **Cool**
 QC Batch ID: **PB-2486-F**
 Instrument ID: **GC-13 Agilent 6890**
 Sample Weight: **1000 mL**
 Final Volume: **1 mL**
 Dilution Factor: **1**

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- <i>m</i> -xylene	0.20	0.07	36 %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.15	73 %	30 - 150 %
Second	Tetrachloro- <i>m</i> -xylene	0.20	0.11	57 %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.16	81 %	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.

Inorganic Chemistry

Field ID: **RGP 2**
 Project: **Brockton/013 073**
 Client: **Hydro-Environmental Technologies, Inc.**

Matrix: **Aqueous**
 Received: **12-15-08 18:30**

Lab ID: **122334-03** Sampled: **12-15-08 10:30** 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	12-17-08 00:23	TCN-1463-W	EPA 9012A	1	LD

Lab ID: **122334-05** Sampled: **12-15-08 10:30** Container: **1L Plastic** Preservation: **Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	140	mg/L	10	5	100 mL	12-15-08 17:54	TSS-1565-W	SM 2540 D	3	KG

Lab ID: **122334-06** Sampled: **12-15-08 10:30** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Chlorine, Total Residual	BRL	mg/L	0.2	1	5 mL	12-15-08 21:20	TRC-0720-W	SM 4500-Cl G	2	LD

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

Trace Metals

Field ID: **RGP 2**
Project: **Brockton/013 073**
Client: **Hydro-Environmental Technologies, Inc.**

Matrix: **Aqueous**
Container: **250 mL Plastic**
Preservation: **HNO3 / Cool**
Preserved: **12-15-08 10:30**

Laboratory ID: **122334-4**
Sampled: **12-15-08 10:30**
Received: **12-15-08 18:30**

<u>Analysis Method</u>	<u>QC Batch ID</u>	<u>Prep Method</u>	<u>Prepared</u>	<u>Sample Volume</u>	<u>Instrument ID</u>	<u>Analyst</u>
EPA 7470A ¹	MP-2161-W	EPA 7470A	12-17-08 09:00	25 mL	CVAA-1 PE FIMS	DET

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-97-6	Mercury, Total		BRL	mg/L	0.0002	1	12-17-08 12:05	EPA 7470A 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.

Project Narrative

Project: **Brockton/013 073**
Client: **Hydro-Environmental Technologies, Inc.**

Lab ID: **122334**
Received: **12-15-08 18:30**

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 122334-1. 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 8270C PAH Note: Sample 122334-1. Sample was diluted prior to analysis. Dilution was required to keep all target analytes within calibration.
- 3 . EPA 8270C Non-conformance: Sample 122334-1. Sample had surrogate 2,4,6-Tribromophenol above recommended recovery limits due to sample matrix interference. Results for original analysis and confirmatory re-analysis are reported for sample.
- 4 . EPA 8270C PAH Non-conformance: Sample 122334-1. Sample had surrogate 2,4,6-Tribromophenol above recommended recovery limits due to sample matrix interference. Results for original analysis and confirmatory re-analysis are reported for sample.

GROUNDWATER ANALYTICAL

228 Main Street, PO Box 1200
Burrards Bay, MA 02532
Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

Project Name: Brockton
Project Number: 03073
Sampler Name: Nagor
Project Manager: Nagor
Firm: HET
Address: _____
City / State / Zip: _____
Telephone: _____

TURNAROUND
☐ STANDARD (10 Business Days)
☐ PRIORITY (5 Business Days)
☒ RUSH (RAN- 324)
(Rush requires Rush Authorization Number)
☐ Please Email to: _____
☐ Please FAX to: _____
BILLING
☐ Purchase Order No.: _____
☐ Third Party Billing: _____
☐ GWA Quote: _____

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

Sampling	DATE	TIME	SAMPLE IDENTIFICATION	Matrix	Type	Container(s)	Preservation	Filtrate	LABORATORY NUMBER (Lab Use Only)	RCRA/21E	Search		Analysis	
											504	505	506	507

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.

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-1463-W	EPA 9012A	12/16/2008 10:00	12/17/2008 12:11	Lachat 8000 Autoanalyzer LD	
LCSD	EPA 9012A	TCN-1463-W	EPA 9012A	12/16/2008 10:00	12/17/2008 12:12	Lachat 8000 Autoanalyzer LD	

Analyte	LCS			LCS Duplicate				QC Limits		Method
	Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
Cyanide, Total	0.45	0.46	102%	0.45	0.44	98%	3 %	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.

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	78	78	100 %	80 - 120 %	12-15-08 17:54	TSS-1565-W	SM 2540 D	2	KLK
Chlorine, Total Residual	mg/L	1	1	100 %	80 - 120 %	12-15-08 21:20	TRC-0720-W	SM 4500-Cl G	1	LD

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

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	12-15-08 17:54	TSS-1565-W	SM 2540 D	3	KLG
Chlorine, Total Residual	BRL	mg/L	0.2	12-15-08 21:20	TRC-0720-W	SM 4500-Cl G	2	ID
Cyanide, Total	BRL	mg/L	0.01	12-16-08 12:11	TCN-1463-W	EPA 9012A	1	ID

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

Quality Control Report Laboratory Control Samples

Category: EPA 8082 QC Batch ID: PB-2486-F Matrix: Aqueous Units: ug/L	LCS Instrument ID: GC-13 Agilent 6890 Extracted: 12-16-08 10:00 Cleaned Up: 12-16-08 12:00 Analyzed: 12-16-08 20:19 Analyst: AWG	LCSD Instrument ID: GC-13 Agilent 6890 Extracted: 12-16-08 10:00 Cleaned Up: 12-16-08 12:00 Analyzed: 12-16-08 20:43 Analyst: AWG
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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	4.2	4.1	84%	82%	5.0	4.3	4.3	85%	86%	1 %	5 %	40 - 140%	30 %	
11096-82-5	Aroclor 1260	5.0	4.0	4.2	80%	85%	5.0	3.1	3.2	62%	64%	25 %	28 %	40 - 140%	30 %	

QC Surrogate Compound	Surrogate Recovery											QC Limits	
Tetrachloro- <i>m</i> -xylene	0.20	0.16	0.17	82%	86%	0.20	0.17	0.17	83%	85%		30 - 150 %	
Decachlorobiphenyl	0.20	0.18	0.18	89%	92%	0.20	0.11	0.11	54%	54%		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.

Quality Control Report Method Blank

Category: **EPA Method 8082**
QC Batch ID: **PB-2486-F**
Matrix: **Aqueous**

Instrument ID: **GC-13 Agilent 6890**
Extracted: **12-16-08 10:00**
Cleaned Up: **12-16-08 12:00**
Analyzed: **12-16-08 19:55**
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 Column	Tetrachloro- <i>m</i> -xylene	0.20	0.17	86 %	30 - 150 %
	Decachlorobiphenyl	0.20	0.18	89 %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	0.20	0.19	93 %	30 - 150 %
	Decachlorobiphenyl	0.20	0.18	92 %	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.

**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 7470A	MP-2161-WL	EPA 7470A	12-17-08 09:00	12-17-08 11:58	CVAA-1 PE FIMS	DET
LCSD	EPA 7470A	MP-2161-WL	EPA 7470A	12-17-08 09:00	12-17-08 12:01	CVAA-1 PE FIMS	DET

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits		Method
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
7439-97-6	Mercury	0.0010	0.0011	106%	0.0010	0.0011	109%	1 %	80-120 %	20 %	EPA 7470A

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.

**Quality Control Report
Method Blank**

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

<u>Analysis Method</u>	<u>QC Batch ID</u>	<u>Prep Method</u>	<u>Prepared</u>	<u>Sample Volume</u>	<u>Instrument ID</u>	<u>Analyst</u>
EPA 7470A	MP-2161-WB	EPA 7470A	12-17-08 09:00	25 mL	CVAA-1 PE FIMS	DET

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-97-6	Mercury		BRL	mg/L	0.0002	1	12-17-08 11:58	EPA 7470A

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.

Quality Control Report Laboratory Control Samples

Category:	EPA 8270C (Part 2)	LCS	Instrument ID:	MS-6 HP 6890	LCSD	Instrument ID:	MS-6 HP 6890
QC Batch ID:	SV-2327-F	Extracted:	12-16-08 08:00	Extracted:	12-16-08 08:00		
Matrix:	Aqueous	Analyzed:	12-17-08 10:32	Analyzed:	12-17-08 11:12		
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	3.5	69 %	5.0	3.0	60 %	14 %	40 - 140 %	25%
91-57-6	2-Methylnaphthalene	5.0	3.1	62 %	5.0	2.8	56 %	11 %	40 - 140 %	25%
208-96-8	Acenaphthylene	5.0	3.8	75 %	5.0	3.3	67 %	12 %	40 - 140 %	25%
83-32-9	Acenaphthene	5.0	3.8	76 %	5.0	3.4	67 %	13 %	40 - 140 %	25%
86-73-7	Fluorene	5.0	3.9	78 %	5.0	3.4	68 %	13 %	40 - 140 %	25%
85-01-8	Phenanthrene	5.0	4.0	79 %	5.0	3.5	70 %	12 %	40 - 140 %	25%
120-12-7	Anthracene	5.0	4.4	88 %	5.0	3.8	76 %	14 %	40 - 140 %	25%
206-44-0	Fluoranthene	5.0	4.3	86 %	5.0	3.9	78 %	9 %	40 - 140 %	25%
129-00-0	Pyrene	5.0	4.8	96 %	5.0	4.4	88 %	9 %	40 - 140 %	25%
56-55-3	Benzo[a]anthracene	5.0	4.5	90 %	5.0	4.1	83 %	9 %	40 - 140 %	25%
218-01-9	Chrysene	5.0	4.5	91 %	5.0	4.2	83 %	9 %	40 - 140 %	25%
205-99-2	Benzo[b]fluoranthene	5.0	4.7	95 %	5.0	4.3	86 %	10 %	40 - 140 %	25%
207-08-9	Benzo[k]fluoranthene	5.0	4.8	95 %	5.0	4.3	85 %	11 %	40 - 140 %	25%
50-32-8	Benzo[a]pyrene	5.0	4.7	94 %	5.0	4.2	84 %	12 %	40 - 140 %	25%
193-39-5	Indeno[1,2,3-c,d]pyrene	5.0	4.9	97 %	5.0	4.3	87 %	11 %	40 - 140 %	25%
53-70-3	Dibenzo[a,h]anthracene	5.0	4.8	96 %	5.0	4.4	89 %	8 %	40 - 140 %	25%
191-24-2	Benzo[g,h,i]perylene	5.0	4.7	94 %	5.0	4.2	84 %	11 %	40 - 140 %	25%
87-68-3	Hexachlorobutadiene	5.0	2.9	58 %	5.0	2.4	47 %	19 %	40 - 140 %	25%
118-74-1	Hexachlorobenzene	5.0	4.1	82 %	5.0	3.5	69 %	17 %	40 - 140 %	25%
87-86-5	Pentachlorophenol	5.0	4.5	90 %	5.0	4.0	80 %	12 %	30 - 130 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	10	51 %	20	10	51 %	15 - 110 %
Phenol-d5	20	8.2	41 %	20	8.3	42 %	15 - 110 %
Nitrobenzene-d5	10	9.4	94 %	10	8.9	89 %	30 - 130 %
2-Fluorobiphenyl	10	8.0	80 %	10	7.1	71 %	30 - 130 %
2,4,6-Tribromophenol	20	20	101 %	20	19	96 %	15 - 110 %
Terphenyl-d14	10	8.4	84 %	10	8.5	85 %	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.

Quality Control Report Method Blank

Category: **EPA Method 8270C (Part 2)**
 QC Batch ID: **SV-2327-F**
 Matrix: **Aqueous**

Instrument ID: **MS-6 HP 6890**
 Extracted: **12-16-08 08:00**
 Analyzed: **12-17-08 11:53**
 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	9.5	47 %	15 - 110 %
Nitrobenzene-d5	10	10	105 %	30 - 130 %
2-Fluorobiphenyl	10	8.6	86 %	30 - 130 %
2,4,6-Tribromophenol	20	20	100 %	15 - 110 %
Terphenyl-d14	10	8.6	86 %	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.

Quality Control Report Laboratory Control Samples

Category:	EPA 8270C (Part 1)	LCS	Instrument ID:	MS-12 Agilent 6890	LCSD	Instrument ID:	MS-12 Agilent 6890
QC Batch ID:	SV-2327-F		Extracted:	12-16-08 08:00		Extracted:	12-16-08 08:00
Matrix:	Aqueous		Analyzed:	12-16-08 13:38		Analyzed:	12-16-08 14:22
Units:	ug/L		Analyst:	MJB		Analyst:	MJB

Page: 1 of 2

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
62-75-9	N-Nitrosodimethylamine	50	31	62 %	50	31	61 %	0 %	40 - 140 %	25%
110-86-1	Pyridine	50	30	60 %	50	25	51 %	16 %	40 - 140 %	25%
108-95-2	Phenol	50	25	50 %	50	23	47 %	7 %	30 - 130 %	25%
62-53-3	Aniline	50	43	87 %	50	36	73 %	17 %	40 - 140 %	25%
111-44-4	Bis(2-chloroethyl) ether	50	39	77 %	50	39	77 %	0 %	40 - 140 %	25%
95-57-8	2-Chlorophenol	50	38	77 %	50	36	73 %	5 %	30 - 130 %	25%
541-73-1	1,3-Dichlorobenzene	50	36	72 %	50	36	72 %	1 %	40 - 140 %	25%
106-46-7	1,4-Dichlorobenzene	50	36	73 %	50	36	72 %	1 %	40 - 140 %	25%
100-51-6	Benzyl Alcohol	50	40	80 %	50	39	77 %	4 %	30 - 130 %	25%
95-50-1	1,2-Dichlorobenzene	50	37	73 %	50	36	73 %	1 %	40 - 140 %	25%
95-48-7	2-Methylphenol	50	39	78 %	50	36	73 %	7 %	30 - 130 %	25%
108-60-1	Bis(2-chloroisopropyl) ether	50	39	77 %	50	39	78 %	1 %	40 - 140 %	25%
106-44-5	4-Methylphenol	50	39	79 %	50	36	73 %	7 %	30 - 130 %	25%
621-64-7	N-Nitrosodi-n-propylamine	50	43	86 %	50	44	88 %	2 %	40 - 140 %	25%
98-86-2	Acetophenone	50	41	81 %	50	41	81 %	0 %	40 - 140 %	25%
67-72-1	Hexachloroethane	50	37	75 %	50	37	74 %	1 %	40 - 140 %	25%
98-95-3	Nitrobenzene	50	37	73 %	50	37	73 %	0 %	40 - 140 %	25%
78-59-1	Isophorone	50	39	78 %	50	40	79 %	2 %	40 - 140 %	25%
88-75-5	2-Nitrophenol	50	39	79 %	50	39	78 %	1 %	30 - 130 %	25%
105-67-9	2,4-Dimethylphenol	50	42	84 %	50	41	82 %	2 %	30 - 130 %	25%
111-91-1	Bis(2-chloroethoxy) methane	50	41	81 %	50	41	81 %	0 %	40 - 140 %	25%
120-83-2	2,4-Dichlorophenol	50	41	83 %	50	41	82 %	1 %	30 - 130 %	25%
120-82-1	1,2,4-Trichlorobenzene	50	37	75 %	50	37	74 %	0 %	40 - 140 %	25%
106-47-8	4-Chloroaniline	50	44	88 %	50	40	81 %	8 %	40 - 140 %	25%
87-68-3	Hexachlorobutadiene	50	38	76 %	50	38	77 %	1 %	40 - 140 %	25%
59-50-7	4-Chloro-3-methylphenol	50	44	87 %	50	43	86 %	1 %	30 - 130 %	25%
77-47-4	Hexachlorocyclopentadiene	50	38	77 %	50	36	72 %	6 %	40 - 140 %	25%
88-06-2	2,4,6-Trichlorophenol	50	48	95 %	50	49	97 %	2 %	30 - 130 %	25%
95-95-4	2,4,5-Trichlorophenol	50	49	98 %	50	49	98 %	0 %	30 - 130 %	25%
91-58-7	2-Chloronaphthalene	50	42	85 %	50	43	86 %	1 %	40 - 140 %	25%
88-74-4	2-Nitroaniline	50	46	91 %	50	46	92 %	1 %	40 - 140 %	25%
100-25-4	1,4-Dinitrobenzene	50	47	94 %	50	47	95 %	1 %	40 - 140 %	25%
131-11-3	Dimethyl phthalate	50	47	95 %	50	48	95 %	1 %	40 - 140 %	25%
99-65-0	1,3-Dinitrobenzene	50	46	91 %	50	46	92 %	1 %	40 - 140 %	25%
606-20-2	2,6-Dinitrotoluene	50	45	89 %	50	45	90 %	1 %	40 - 140 %	25%
528-29-0	1,2-Dinitrobenzene	50	46	93 %	50	47	93 %	1 %	40 - 140 %	25%
99-09-2	3-Nitroaniline	50	51	102 %	50	49	97 %	5 %	40 - 140 %	25%
51-28-5	2,4-Dinitrophenol	50	42	84 %	50	43	87 %	3 %	30 - 130 %	25%
100-02-7	4-Nitrophenol	50	28	55 %	50	26	52 %	5 %	30 - 130 %	25%
132-64-9	Dibenzofuran	50	43	86 %	50	44	87 %	1 %	40 - 140 %	25%
121-14-2	2,4-Dinitrotoluene	50	46	92 %	50	46	92 %	0 %	40 - 140 %	25%
84-66-2	Diethyl phthalate	50	49	97 %	50	49	97 %	0 %	40 - 140 %	25%
7005-72-3	4-Chlorophenyl phenyl ether	50	47	94 %	50	47	94 %	1 %	40 - 140 %	25%
100-01-6	4-Nitroaniline	50	53	106 %	50	54	108 %	1 %	40 - 140 %	25%
534-52-1	4,6-Dinitro-2-methylphenol	50	45	90 %	50	47	94 %	4 %	30 - 130 %	25%
86-30-6	N-Nitrosodiphenylamine †	50	47	95 %	50	49	98 %	3 %	40 - 140 %	25%
122-66-7	1,2-Diphenylhydrazine ‡	50	45	89 %	50	46	93 %	4 %	40 - 140 %	25%
101-55-3	4-Bromophenyl phenyl ether	50	48	97 %	50	49	98 %	2 %	40 - 140 %	25%

Quality Control Report Laboratory Control Samples

Category: EPA 8270C (Part 1) QC Batch ID: SV-2327-F Matrix: Aqueous Units: ug/L	LCS Instrument ID: MS-12 Agilent 6890 Extracted: 12-16-08 08:00 Analyzed: 12-16-08 13:38 Analyst: MJB	LCSD Instrument ID: MS-12 Agilent 6890 Extracted: 12-16-08 08:00 Analyzed: 12-16-08 14:22 Analyst: MJB
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CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
86-74-8	Carbazole	50	53	106 %	50	55	109 %	3 %	40 - 140 %	25%
84-74-2	Di-n-butyl phthalate	50	48	97 %	50	49	99 %	2 %	40 - 140 %	25%
85-68-7	Butyl benzyl phthalate	50	50	101 %	50	51	102 %	1 %	40 - 140 %	25%
91-94-1	3,3'-Dichlorobenzidine	50	45	90 %	50	47	93 %	4 %	40 - 140 %	25%
117-81-7	Bis(2-ethylhexyl) phthalate	50	50	100 %	50	51	101 %	1 %	40 - 140 %	25%
117-84-0	Di-n-octyl phthalate	50	48	96 %	50	48	97 %	1 %	40 - 140 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery	QC Limits	
2-Fluorophenol	20	13	64 %	20	12	59 %	15 - 110 %	
Phenol-d5	20	11	54 %	20	10	50 %	15 - 110 %	
Nitrobenzene-d5	10	8.7	87 %	10	8.8	88 %	30 - 130 %	
2-Fluorobiphenyl	10	10	102 %	10	10	103 %	30 - 130 %	
2,4,6-Tribromophenol	20	21	107 %	20	22	110 %	15 - 110 %	
Terphenyl-d14	10	10	103 %	10	9.9	99 %	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.

Quality Control Report Method Blank

Category: **EPA Method 8270C (Part 1)**
QC Batch ID: **SV-2327-F**
Matrix: **Aqueous**

Instrument ID: **MS-12 Agilent 6890**
Extracted: **12-16-08 08:00**
Analyzed: **12-16-08 15:07**
Analyst: **MJB**

Page: 1 of 2

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	10
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

Quality Control Report Method Blank

Category: **EPA Method 8270C (Part 1)**
 QC Batch ID: **SV-2327-F**
 Matrix: **Aqueous**

Instrument ID: **MS-12 Agilent 6890**
 Extracted: **12-16-08 08:00**
 Analyzed: **12-16-08 15:07**
 Analyst: **MJB**

Page: 2 of 2

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- <i>n</i> -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- <i>n</i> -octyl phthalate	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	11	56 %	15 - 110 %
Phenol-d5	20	9	47 %	15 - 110 %
Nitrobenzene-d5	10	8	84 %	30 - 130 %
2-Fluorobiphenyl	10	9	89 %	30 - 130 %
2,4,6-Tribromophenol	20	17	85 %	15 - 110 %
Terphenyl-d14	10	10	95 %	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.

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,

Asbestos Analytical Services, Class A

Division of Occupational Safety, AA000195

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>

NIST NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP)

NVLAP Lab Code 200751-1

Bulk Asbestos Fiber Analysis (PLM)

<http://ts.nist.gov/Standards/scopes/plmtm.htm>

RHODE ISLAND

Department of Health,

Potable and Non-Potable Water Microbiology, Organic and Inorganic Chemistry

Division of Laboratories, LAO00054

<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

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)		Non-Potable Water (Wastewater)	
Analyte	Method	Analyte	Method
1,2-Dibromo-3-Chloropropane	EPA 504.1	Ammonia-N	Lachat 10-107-06-1-B
1,2-Dibromoethane	EPA 504.1	Antimony	EPA 200.7
Alkalinity, Total	SM 2320-B	Antimony	EPA 200.8
Antimony	EPA 200.8	Antimony	EPA 200.9
Antimony	EPA 200.9	Arsenic	EPA 200.7
Arsenic	EPA 200.8	Arsenic	EPA 200.8
Arsenic	EPA 200.9	Arsenic	EPA 200.9
Barium	EPA 200.7	Beryllium	EPA 200.7
Barium	EPA 200.8	Beryllium	EPA 200.8
Beryllium	EPA 200.7	Beta-BHC	EPA 608
Beryllium	EPA 200.8	Biochemical Oxygen Demand	SM 5210-B
Cadmium	EPA 200.7	Cadmium	EPA 200.7
Cadmium	EPA 200.8	Cadmium	EPA 200.8
Calcium	EPA 200.7	Calcium	EPA 200.7
Chlorine, Residual Free	SM 4500-CL-G	Chemical Oxygen Demand	SM 5220-D
Chromium	EPA 200.7	Chlordane	EPA 608
Copper	EPA 200.7	Chloride	EPA 300.0
Copper	EPA 200.8	Chlorine, Total Residual	SM 4500-CL-G
Cyanide, Total	Lachat 10-204-00-1-A	Chromium	EPA 200.7
E. Coli (Treatment and Distribution)	EC-MUG SM 9221-F	Chromium	EPA 200.8
E. Coli (Treatment and Distribution)	Enz. Sub. SM 9223	Cobalt	EPA 200.7
E. Coli (Treatment and Distribution)	NA-MUG SM 9222-G	Cobalt	EPA 200.8
Fecal Coliform (Source Water)	MF SM 9222-D	Copper	EPA 200.7
Fluoride	EPA 300.0	Copper	EPA 200.8
Fluoride	SM 4500-F-C	Copper	EPA 200.9
Heterotrophic Plate Count	SM 9215-B	Cyanide, Total	Lachat 10-204-00-1-A
Lead	EPA 200.8	DDD	EPA 608
Lead	EPA 200.9	DDE	EPA 608
Mercury	EPA 245.1	DDT	EPA 608
Nickel	EPA 200.7	Delta-BHC	EPA 608
Nickel	EPA 200.8	Dieldrin	EPA 608
Nitrate-N	EPA 300.0	Endosulfan I	EPA 608
Nitrate-N	Lachat 10-107-04-1-C	Endosulfan II	EPA 608
Nitrite-N	EPA 300.0	Endosulfan Sulfate	EPA 608
Nitrite-N	Lachat 10-107-04-1-C	Endrin	EPA 608
pH	SM 4500-H-B	Endrin Aldehyde	EPA 608
Selenium	EPA 200.8	Fluoride	EPA 300.0
Selenium	EPA 200.9	Gamma-BHC	EPA 608
Silver	EPA 200.7	Hardness (CaCO ₃), Total	EPA 200.7
Silver	EPA 200.8	Hardness (CaCO ₃), Total	SM 2340-B
Sodium	EPA 200.7	Heptachlor	EPA 608
Sulfate	EPA 300.0	Heptachlor Epoxide	EPA 608
Thallium	EPA 200.8	Iron	EPA 200.7
Thallium	EPA 200.9	Kjeldahl-N	Lachat 10-107-06-02-D
Total Coliform (Treatment and Distribution)	Enz. Sub. SM 9223	Lead	EPA 200.7
Total Coliform (Treatment and Distribution)	MF SM 9222-B	Lead	EPA 200.9
Total Dissolved Solids	SM 2540-C	Magnesium	EPA 200.7
Trihalomethanes	EPA 524.2	Manganese	EPA 200.7
Turbidity	SM 2130-B	Manganese	EPA 200.8
Volatile Organic Compounds	EPA 524.2	Mercury	EPA 245.1
		Molybdenum	EPA 200.7
		Molybdenum	EPA 200.8
		Nickel	EPA 200.7
		Nickel	EPA 200.8
		Nickel	EPA 200.9
		Nitrate-N	EPA 300.0
		Nitrate-N	Lachat 10-107-04-1-C
		Non-Filterable Residue	SM 2540-D
		Oil and Grease	EPA 1664
Non-Potable Water (Wastewater)			
Analyte	Method		
Aldrin	EPA 608		
Alkalinity, Total	Lachat 10-303-31-1-A		
Alpha-BHC	EPA 608		
Aluminum	EPA 200.7		
Aluminum	EPA 200.8		

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.

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
Selenium	EPA 200.9
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
Thallium	EPA 200.9
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