UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
5 Post Office Square, Suite 100
BOSTON, MA 02109-3912

CERTIFIED MAIL RETURN RECEIPT REQUESTED

APR 6 , 2011

Lori McCarthy, Project Manager
Environmental Compliance Service, Inc.
588 Silver Street
Agawam, MA 01001

Re: Authorization to discharge under the Remediation General Permit (RGP) – MAG910000. O'Connell Oil – Lee 5 site located at 241 Main Street, Lee, MA 01238, Berkshire County; Authorization # MAG910481

Dear Ms. McCarthy:

Based on the review of a Notice of Intent (NOI) submitted on behalf of O'Connell Oil Associates by your firm Environmental Compliance Service, Inc. , for the site referenced above, the U.S. Environmental Protection Agency (EPA) hereby authorizes you, as the named Operator, to discharge in accordance with the provisions of the RGP at that site. Your authorization number is listed above.

The checklist enclosed with this RGP authorization indicates the pollutants which you are required to monitor. Also indicated on the checklist are the effluent limits, test methods and minimum levels (MLs) for each pollutant. Please note that the checklist does not represent the complete requirements of the RGP. Operators must comply with all of the applicable requirements of this permit, including influent and effluent monitoring, narrative water quality standards, record keeping, and reporting requirements, found in Parts I and II, and Appendices I – VIII of the RGP. See EPA's website for the complete RGP and other information at: http://www.epa.gov/region1/npdes/mass.html#dgp.

Please note the enclosed checklist includes parameters that exceeded Appendix III limits. The checklist also includes other parameters for which your laboratory reports indicated there was insufficient sensitivity to detect these parameters at the minimum levels established in Appendix VI of the RGP.

Also, please note that the metals include in the list are dilution dependent subject to limitations based on a dilution factor range (DFR), due to the ample dilution at the point of discharge (1,238) the DFR applicable for this pollutant is equal to the Ceiling Value DFR established in the RGP. (See Appendix IV of the RGP for Massachusetts facilities).

Therefore, the limit for arsenic of 540ug/L, nickel of 2,380ug/L, zinc of 1,480ug/L and iron of 5,000ug/L, shall not be exceeded in the discharge.

Finally, please note the list of pollutants attached to this authorization is subject to a recertification if the operations at the site result in a discharge lasting longer than six months. A recertification can be submitted to EPA within six (6) to twelve (12) months of operations in accordance with the 2010 RGP regulations.

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on May 11, 2011. If for any reason the discharge terminates sooner you are required to submit a Notice of Termination (NOT) to the attention of the contact person indicated below within 30 days of project completion.

Thank you in advance for your cooperation in this matter. Please contact Victor Alvarez at 617-918-1572 or Alvarez.Victor@epa.gov, if you have any questions.

Sincerely,

David M. Webster, Chief
Industrial Permits Branch

Enclosure

cc: Kathleen Keohane, MassDEP

2010 Remediation General Permit
Summary of Monitoring Parameters[1]

NPDES Authorization Number:	**MAG910481 – New**
Date Authorization Issued:	April, 2011
Facility/Site Name:	O'Connell Oil – Lee 5
Facility/Site Address:	Site located at 241 Main Street, Lee, MA 01238, Berkshire County
	Email address of owner:
Legal Name of Operator:	Environmental Compliance Service, Inc.
Operator contact name, title, and Address:	Lori McCarthy, Project Manager, 588 Silver Street, Agawam, MA 01001
	Email:jniedzielski@ecsconsult.com= John Niedzielski. LSP
Estimated Date of Completion:	May 11, 2011
Category and Sub-Category:	Category III. Contaminated Construction Dewatering. Subcategory B. Known Contaminated Sites
Receiving Water:	Housatonic River

Monitoring & Limits are applicable if checked. All samples are to be collected as grab samples

	Parameter	**Effluent Limit/Method#/ML** (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
√	1. Total Suspended Solids (TSS)	30 milligrams/liter (mg/L) **, 50 mg/L for hydrostatic testing **, Me#60.2/ML5ug/L
	2. Total Residual Chlorine (TRC) [1]	Freshwater = 11 ug/L ** Saltwater = 7.5 ug/L **/ Me#330.5/ML 20ug/L
	3. Total Petroleum Hydrocarbons (TPH)	5.0 mg/L/ Me# 1664A/ML 5.0mg/L
√	4. Cyanide (CN) [2, 3]	Freshwater = 5.2 ug/l ** Saltwater = 1.0 ug/L **/ Me#335.4/ML 5ug/L
√	5. Benzene (B)	5ug/L /50.0 ug/L for hydrostatic testing only/ Me#8260C/ML 2 ug/L
√	6. Toluene (T)	(limited as ug/L total BTEX)/ Me#8260C/ ML 2ug/L
√	7. Ethylbenzene (E)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
√	8. (m,p,o) Xylenes (X)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
√	9. Total Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX) [4]	100 ug/L/ Me#8260C/ ML 2ug/L
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L
	11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l/Me#8260C/ML 10ug/L

	Parameter	Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
√	12.tert-Butyl Alcohol (TBA) (TertiaryButanol)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	13. tert-Amyl Methyl Ether (TAME)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
√	14. Naphthalene [5]	20 ug/L /Me#8260C/ML 2ug/L
	15. Carbon Tetrachloride	4.4 ug/L /Me#8260C/ ML 5ug/L
	16. 1,2 Dichlorobenzene (o-DCB)	600 ug/L /Me#8260C/ ML 5ug/L
	17. 1,3 Dichlorobenzene (m-DCB)	320 ug/L /Me#8260C/ ML 5ug/L
	18. 1,4 Dichlorobenzene (p-DCB)	5.0 ug/L /Me#8260C/ ML 5ug/L
	18a. Total dichlorobenzene	763 ug/L - NH only /Me#8260C/ ML 5ug/L
	19. 1,1 Dichloroethane (DCA)	70 ug/L /Me#8260C/ ML 5ug/L
	20. 1,2 Dichloroethane (DCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	21. 1,1 Dichloroethene (DCE)	3.2 ug/L/Me#8260C/ ML 5ug/L
	22. cis-1,2 Dichloroethene (DCE)	70 ug/L/Me#8260C/ ML 5ug/L
√	23. Methylene Chloride	4.6 ug/L/Me#8260C/ ML 5ug/L
√	24. Tetrachloroethene (PCE)	5.0 ug/L/Me#8260C/ ML 5ug/L
	25. 1,1,1 Trichloro-ethane (TCA)	200 ug/L/Me#8260C/ ML 5ug/L
	26. 1,1,2 Trichloro-ethane (TCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
√	27. Trichloroethene (TCE)	5.0 ug/L /Me#8260C/ ML 5ug/L
	28. Vinyl Chloride (Chloroethene)	2.0 ug/L /Me#8260C/ ML 5ug/L
	29. Acetone	Monitor Only(ug/L)/Me#8260C/ML 50ug/L
√	30. 1,4 Dioxane	Monitor Only /Me#1624C/ML 50ug/L
	31. Total Phenols	300 ug/L Me#420.1&420.2/ML 2 ug/L/ Me# 420.4 /ML 50ug/L
	32. Pentachlorophenol (PCP)	1.0 ug/L /Me#8270D/ML 5ug/L,Me#604 &625/ML 10ug/L
	33. Total Phthalates (Phthalate esters) [6]	3.0 ug/L ** /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L& Me#625/ML 5ug/L
√	34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	6.0 ug/L /Me#8270D/ML 5ug/L,Me#606/ML 10ug/L & Me#625/ML 5ug/L
	35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/L
	a. Benzo(a) Anthracene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	b. Benzo(a) Pyrene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	c. Benzo(b)Fluoranthene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L

	Parameter	Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	d. Benzo(k)Fluoranthene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	e. Chrysene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	f. Dibenzo(a,h)anthracene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	g. Indeno(1,2,3-cd) Pyrene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML5ug/L
	36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	100 ug/L
	h. Acenaphthene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	i. Acenaphthylene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	j. Anthracene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	k. Benzo(ghi) Perylene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	l. Fluoranthene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	m. Fluorene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	n. Naphthalene [5]	20 ug/l / Me#8270/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	o. Phenanthrene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	p. Pyrene	X/Me#8270D/ML5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	37. Total Polychlorinated Biphenyls (PCBs) [8, 9]	0.000064 ug/L/Me# 608/ ML 0.5 ug/L
√	38. Chloride	Monitor only/Me# 300.0/ ML 0.1ug/L

	Metal parameter	Total Recoverable Metal Limit @ H [10]= 50 mg/l CaCO3 for discharges in Massachusetts (ug/l) [11/12] Freshwater		Minimum level=ML	
	39. Antimony	5.6/ML 10			
√	40. Arsenic **	540/ML20			
	41. Cadmium **	0.2/ML10			
	42. Chromium III (trivalent) **	48.8/ML15			
	43. Chromium VI (hexavalent) **	11.4/ML10			

	Metal parameter	Total Recoverable Metal Limit @ H [10]= 50 mg/l CaCO3 for discharges in Massachusetts (ug/l) [11/12]	Minimum level=ML
		Freshwater	
	44. Copper **	5.2/ML15	
	45. Lead **	1.3/ML20	
	46. Mercury **	0.9/ML0.2	
√	47. Nickel **	2,380ML20	
	48. Selenium **	5/ML20	
	49. Silver	1.2/ML10	
√	50. Zinc **	1,480/ML15	
√	51. Iron	5,000/ML 20	

	Other Parameters	Limit
√	52. Instantaneous Flow	Site specific in CFS
√	53. Total Flow	Site specific in CFS
√	54. pH Range for Class A & Class B Waters in MA	6.5-8.3; 1/Month/Grab[13]
	55. pH Range for Class SA & Class SB Waters in MA	6.5-8.3; 1/Month/Grab[13]
	56. pH Range for Class B Waters in NH	6.5-8; 1/Month/Grab[13]
	57. Daily maximum temperature - Warm water fisheries	83°F; 1/Month/Grab[14]
	58. Daily maximum temperature - Cold water fisheries	68°F; 1/Month/Grab[14]
	59. Maximum Change in Temperature in MA - Any Class A water body	1.5°F; 1/Month/Grab[14]
	60. Maximum Change in Temperature in MA - Any Class B water body- Warm Water	5°F; 1/Month/Grab[14]
	61. Maximum Change in Temperature in MA – Any Class B water body - Cold water and Lakes/Ponds	3°F; 1/Month/Grab[14]
	62. Maximum Change in Temperature in MA – Any Class SA water body - Coastal	1.5°F; 1/Month/Grab[14]
	63. Maximum Change in Temperature in MA – Any Class SB water body - July to September	1.5°F; 1/Month/Grab[14]
	64. Maximum Change in Temperature in MA –Any Class SB water body - October to June	4°F; 1/Month/Grab[14]

Footnotes:

[1] Although the maximum values for TRC are 11ug/l and 7.5 ug/l for freshwater, and saltwater respectively, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., Method 330.5, 20 ug/l).
[2] Limits for cyanide are based on EPA's water quality criteria expressed as micrograms per liter. There is currently no EPA approved test method for free cyanide. Therefore, total cyanide must be reported.

[3] Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l).
[4] BTEX = sum of Benzene, Toluene, Ethylbenzene, and total Xylenes.
[5] Naphthalene can be reported as both a purgeable (VOC) and extractable (SVOC) organic compound. If both VOC and SVOC are analyzed, the highest value must be used unless the QC criteria for one of the analyses is not met. In such cases, the value from the analysis meeting the QC criteria must be used.
[6] The sum of individual phthalate compounds(not including the #34, Bis (2-Ethylhexyl) Phthalate . The compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.
Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measurement of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.
[7] Although the maximum value for the individual PAH compounds is 0.0038 ug/l, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.
[8] In the November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as total PCBs is the sum of all homologue, all isomer, all congener, or all "Oroclor analyses."Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measure of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.
[9]Although the maximum value for total PCBs is 0.000064 ug/l, the compliance limit is equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 0.5 ug/l for Method 608 or 0.00005 ug/l when Method 1668a is approved).
[10] Hardness. Cadmium, Chromium III, Copper, Lead, Nickel, Silver, and Zinc are Hardness Dependent.
[11] For a Dilution Factor (DF) from 1 to 5, metals limits are calculated using DF times the base limit for the metal. See Appendix IV. For example, iron limits are calculated using DF x 1,000ug/L (the iron base limit). Therefore DF is 1.5, the iron limit will be 1,500 ug/L; DF 2, then iron limit =1,000 x 2 =2,000 ug/L., etc. not to exceed the DF=5.
[12] Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B).
[13] pH sampling for compliance with permit limits may be performed using field methods as provided for in EPA test Method 150.1.
[14] Temperature sampling per Method 170.1

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WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

588 Silver Street, Agawam, MA 01001 tel 413.789.3530 fax 413.789.2776 www.ecsconsult.com

Mr. Victor Alvarez
United States Environmental
Protection Agency, Region 1
RPG-NOC Processing
1 Congress Street, Suite 1100
Boston, MA 02114-2023

March 29, 2011
Project No. 91-212738.10

RE: O'Connell Oil Associates
241 Main Street
Lee, Massachusetts
MassDEP RTN 1-17601

Dear Mr. Alvarez:

Environmental Compliance Services, Inc. (ECS) is pleased to provide supporting documentation for the Notice of Intent (NOI) for the Remediation General Permit (RGP) on behalf of O'Connell Oil Associates, Inc. (O'Connell). This NOI is submitted in order to obtain a permit for the operation of a temporary groundwater recovery and treatment system (GWTS) to be located at 241 Main Street, Lee, Massachusetts (the Site). The GWTS will be operated during construction activities at the Site in order to allow for the removal of petroleum-impacted soil, collection of soil samples, and removal and replacement of the underground storage tank (UST) system. A Site Locus is provided as Figure 1. A copy of the NOI form is provided as Attachment I.

System Design

A proposed schematic is attached. The groundwater treatment system located on the Site will be composed of submersible pneumatic pumps that collect groundwater from the excavation area. Recovered groundwater will be pumped to a frac tank and subsequently through bag filters and three liquid phase granular activated carbon units (plumbed in series) prior to discharge to the Town of Lee storm water line located in Center Street. The storm water line outfalls to the Housatonic River at a point located northwest of the Site.

A Site plan detailing the location of the groundwater treatment system, the catch basin for the storm water line, and the planned excavation areas is provided as Figure 2. A line diagram of the groundwater treatment system is provided as Figure 3. The outfall location of the storm water line and surface water bodies adjacent to the outfall location are indicated on the Site Locus, Figure 1.

Average flow rate of discharge of treated groundwater from the system to the storm water line is expected to be approximately 5 gallons per minute (gpm). The design capacity of the groundwater treatment system is 25 gpm based upon a design capacity of the submersible pump. As a conservative estimate, a maximum flow capacity for the groundwater treatment system was estimated at 25 gpm.

Influent Sample Analysis

Groundwater samples were collected at monitoring wells ECS-1 and ECS-3, located in the areas of planned excavation, on March 18, 2011. The samples were submitted to Spectrum Analytical, Inc. of Agawam, Massachusetts under standard chain of custody protocol for analysis of semivolatile organic compounds (SVOCs) by USEPA Method 625, volatile organic compounds (VOCs) by USEPA Method 8260B, polychlorinated biphenyls (PCBs) by USEPA Method 608, total petroleum hydrocarbons (TPH) by USEPA Method 1664, ethylene dibromide (EDB) by USEPA Method 504.1, total metals (silver, arsenic, cadmium, chromium, copper, iron, nickel, lead, antimony, selenium, and zinc) by USEPA Method 200.7, mercury by USEPA Method 245.1/7470A, cyanide by USEPA Method 9012A, total residual chlorine by Hach 8167, chloride by USEPA Method 300, and total suspended solids by SM2540D. A copy of the laboratory report and chain of custody record are provided as Attachment II.

The attached Table 1 summarizes the results of analysis of the samples. Arsenic, iron, nickel, zinc, cyanide, bis(2-chloroethyl)ether, naphthalene, total suspended solids, chloride, benzene, n-butylbenzene, ethylbenzene, isopropylbenzene, n-propylbenzene, tetrachloroethene, trichloroethene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, m,p-xylenes, o-xylene, and tert-butanol (TBA)were detected in the sample collected at ECS-1 and/or ECS-3 on March 18, 2011. Comparison of the concentrations of these compounds to the Appendix III effluent limitations (http://www.epa.gov/ne/npdes/remediation/RGP2010_PermitAppendixIII.pdf, accessed March 28, 2011) indicates that the concentrations of arsenic, iron, cyanide, bis(2-chloroisopropyl)ether, total suspended solids, benzene, naphthalene, tetrachloroethene, trichloroethene, and total benzene, toluene, ethylbenzene and xylenes (BTEX) were above the Appendix III effluent limitations.

Receiving Waters Information

The receiving water for the treated groundwater discharge is the Housatonic River, located approximately 600 feet northwest of the Site.

ECS consulted the online United States Geological Survey (USGS) Streamstats program to determine the 7Q10 flow rate at the discharge location (http://streamstatsags.cr.usgs.gov/gages/viewer 14.htm?stabbr=GAGES, accessed March 28, 2011). The nearest stream gauge location to the discharge point is Station No. 01197500 (located at 42.23193N, 73.35499W) in Great Barrington, Massachusetts. Data obtained from the online resource indicated that the calculated 7Q10 flow rate for this basin is 69 cubic feet per second (cfs). A copy of the Streamstats map and Streamstats gauging station report is provided as Attachment III

Based upon an estimated maximum flow rate of the discharge from the groundwater treatment system of 25 gpm, the dilution factor was calculated as:

Equation 1: $DF = (Qd + Qs)/Qd$

Where: DF = DilutionFactor
Qd = Maximum flow rate of the discharge in cfs
Qs = Receiving water 7Q10 flow (cfs), where,
7Q10 = The minimum flow (cfs) for 7 consecutive days with a recurrence interval of 10 years

$Qd = 25 \text{ gpm} \times 0.00223 \text{ cfs/gpm} = 0.0558 \text{ cfs}$

$DF = (0.0558 + 69)/(0.0558)$
$DF = 1,237.6$

The concentrations of arsenic and iron reported present in the untreated sample were compared to the column corresponding to a dilution factor of 1,237 (>100) in Appendix IV table. The discharge limits listed in the Appendix IV table are 540 µg/L for arsenic and 5,000 µg/L for iron. Based upon this information, arsenic should not be subject to monitoring requirements for this discharge, and iron should be subject to monitoring requirements. There is no permit effluent limit for chloride. Based upon the presence of chloride in the groundwater samples, chloride should be subject to monitoring requirements for this discharge.

Receiving Water Classification

ECS consulted the Massachusetts Department of Environmental Protection (MassDEP) Division of Water Pollution Control (http://www.mass.gov/dep/water/laws/tblfig.pdf) to determine the classification for the receiving waters. The list indicates that the Housatonic River is classified as Class B water due to warm water. Water in this segment of the Housatonic is considered impaired for aquatic life, fish consumption, primary and secondary contact, and aesthetics. Total Maximum Daily Loads (TMDL) for this segment of the Housatonic River include unknown toxicity, priority organics, thermal modifications, pathogens, and turbidity. The 2007 Housatonic River Watershed Water Quality Assessment Report for this segment of the Housatonic River is provided in Attachment IV.

Evaluation of Threatened or Endangered Species or Critical Habitat Located within Receiving Waters

According to Massachusetts Geographic Information Systems (MassGIS) online maps for the Natural Heritage Endangered Species Program (NHESP) (2008), a Priority Habitat of Rare Species and an Estimated Habitat of Rare Wildlife are located within at the proposed discharge area. A copy of the NHESP Map is provided as Attachment V. The area is designated as Priority Habitat (PH) 1508 and Estimated Habitat (EH) 941. Information regarding this Estimated and Priority Habitat has been requested from the Massachusetts Division of Fisheries and Wildlife and is pending. There are no Areas

of Critical Environmental Concern or Endangered Species known to exist within ½-mile of proposed discharge area.

Review of National Register of Historic Places

A listing of all Historic Places within the town of Lee was obtained from the Massachusetts Cultural Resources Information System (MACRIS) online database at http://mhc-macris.net/towns.aspx (accessed March 28, 2011). Copies of the MACRIS report for Main Street and Center Street are provided as Attachment VI. The database indicated the presence of several historic places located in close proximity to the Site and proposed discharge area. This project does involve new construction and the demolition or rehabilitation of existing structures and historic properties are not affected by the discharge or identified in the path of the discharges regulated by this permit, and are not identified where installation or construction of treatment systems or BMPs to control such discharges are planned.

Copies of this letter and supporting documentation have been forwarded to Mr. Richard Green at the Western Regional Office of the MassDEP and to Mr. Christopher Pompi, Superintendant of the Department of Public Works for the Town of Lee. Should you have any questions or concerns regarding the contents of this letter or the NOI for the RGP, please do not hesitate to contact the undersigned at (413) 789-3530.

Sincerely,
ENVIRONMENTAL COMPLIANCE SERVICES, INC.

Lori A. McCarthy
Project Manager

John J. Niedzielski, LSP
Branch Manager

LAG/JJN/kab
Attachments

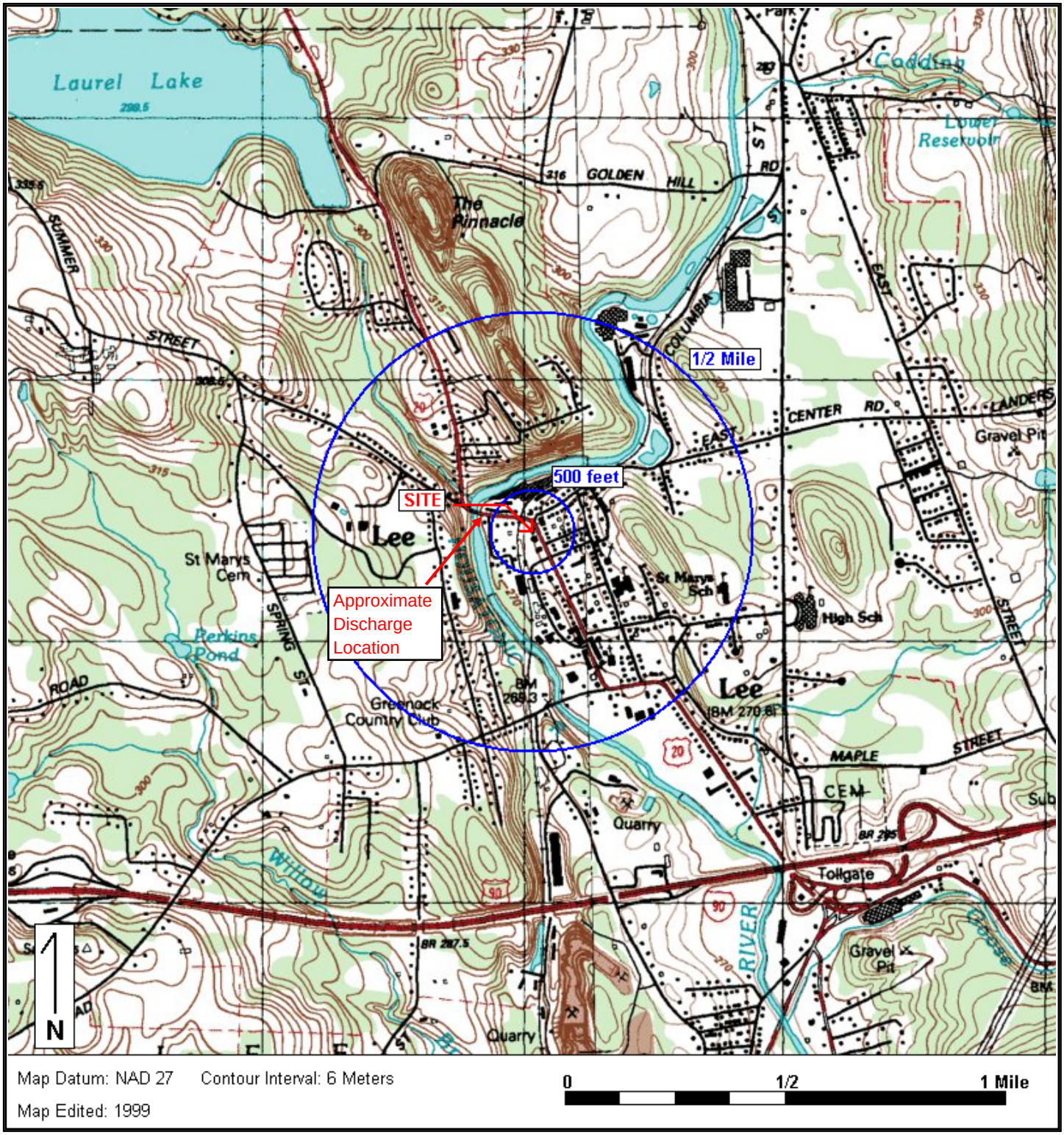
Cc: R. Green, MassDEP, WERO (via eDEP)
C. Pompi, Town of Lee Department of Public Works (via email)
J. Sobon, O'Connell Oil Associates, Inc.

FIGURES

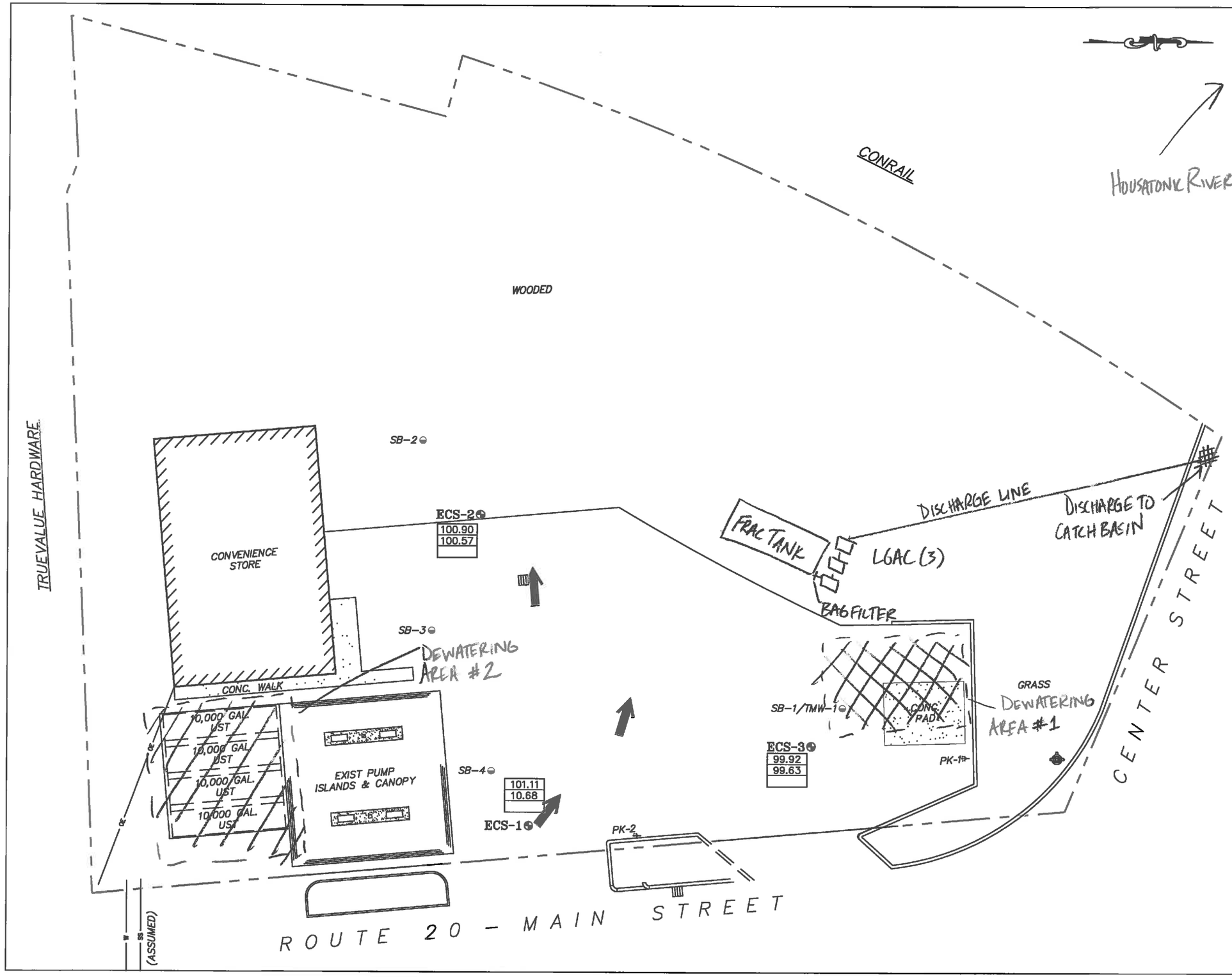
Environmental Compliance Services, Inc.
588 Silver Street
Agawam, MA 01001
Phone 413.789.3530 Fax 413.789.2776
www.ecsconsult.com

241 Main St, Lee, MA
241 Main St
Lee, MA 01238

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Stockbridge, MA
Lat/Lon: 42° 18' 35" NORTH, 73° 15' 7" WEST - UTM Coordinates: 18 644071 EAST / 4685642 NORTH
Generated By: Kevin Collins



Legend

- Approximate Property Line
- OE — Overhead Electric Line
- SS — Sanitary Sewer Line
- W — Water Line
- Catchbasin
- Fire Hydrant
- Monitoring Well
- ECS–1 — Well I.D.
- 101.11 — Rim Elevation
- 100.68 — PVC Elevation
- Water Table Elevation
- 90.0 — Water Table Contour (Dashed where inferred)
- Flow Direction Indicator

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Horizontal, and vertical locations of wells, and selected site features determined through measurements made by representatives of ECS.

Water table elevation are based on an assumed benchmark of 100.00feet located at nail PK–1.

Water table elevations are based on measurements made on

Water table contours, and flow directions assume homogenous, isotropic aquifer conditions, and horizontal flow.

Fluctuations in the level of the water table may occur due to factors not accounted for at the time of measurement.

Water table contours are interpolated between data points, and inferred in other areas.

ecs
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www.ecsconsult.com

PROJECT:
O'Connell Oil Associates, Inc.
241 Main Street
Lee, Massachusetts 01238

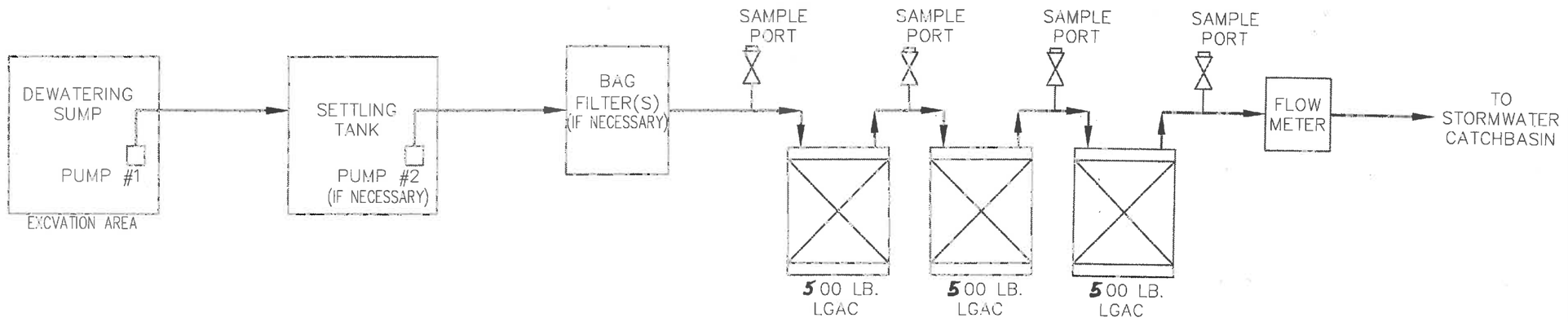
TITLE:
Site Plan with Groundwater Contours (4/9/10)

CLIENT:
O'Connell Oil Associates, Inc.

GRAPHIC SCALE: 30 15 0 15 30

CADFILE: P:\Data\Projects\212738\DWG\212738E_UPDATE.dwg
SAVED BY: RSTARODO

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RSW	RSW	KD	KD
SCALE:	**DATE:**	**JOB NO.:**	**FIGURE NO.:**
1"=30'	April 2010	212738	2



GROUNDWATER TREATMENT SYSTEM

Notes:

Pump #2 will not be installed unless required.

Filters will not be installed unless necessary to meet permit requirements.

Discharge flow will be by gravity only unless a pump is required due to field conditions.

ecs
588 Silver Street • Agawam, MA 01001
Phone: 1-800-789-3530 Fax: 413-789-2778
www.ecsconsult.com

CLIENT: O'Connell Oil Associates

GRAPHIC SCALE: 0

SAVED BY: RWALAS

PROJECT: 241 Main Street, Lee, Massachusetts

Groundwater Treatment System

CADFILE: F:\Data\Projects\10824-Dir05\108240.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RSW	LM	LM	LM
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
N.T.S.	MAR 2011	91-212738	3

TABLES

TABLE 1
RESULTS OF ANALYSIS OF GROUNDWATER SAMPLES

O'Connell Oil Associates
241 Main Street, Lee, Massachusetts

Results reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

		ECS-1		ECS-3	
Method / Analyte	**Units**	**Result**	**RDL**	**Result**	**RDL**
EPA 1664 Rev. A					
Non-polar material (SGT-HEM)	mg/l	BRL	1	BRL	1
EPA 200.7					
Silver	mg/l	BRL	0.005	BRL	0.005
Arsenic	mg/l	BRL	0.004	0.0111	0.004
Cadmium	mg/l	BRL	0.0025	BRL	0.0025
Chromium	mg/l	BRL	0.005	BRL	0.005
Copper	mg/l	BRL	0.005	BRL	0.005
Iron	mg/l	3.13	0.015	18.5	0.015
Nickel	mg/l	BRL	0.005	0.0138	0.005
Lead	mg/l	BRL	0.0075	BRL	0.0075
Antimony	mg/l	BRL	0.006	BRL	0.006
Selenium	mg/l	BRL	0.015	BRL	0.015
Zinc	mg/l	0.015	0.005	0.0174	0.005
EPA 245.1/7470A					
Mercury	mg/l	BRL	0.0002	BRL	0.0002
EPA 335.4 / SW846 9012A					
Cyanide (total)	mg/l	0.0806	0.005	0.0225	0.005

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		ECS-1		ECS-3	
Method / Analyte	**Units**	**Result**	**RDL**	**Result**	**RDL**
EPA 504.1					
1,2-Dibromoethane (EDB)	µg/l	BRL	0.01	BRL	0.01
EPA 608					
Aroclor-1016	µg/l	BRL	0.065	BRL	0.065
Aroclor-1221	µg/l	BRL	0.065	BRL	0.065
Aroclor-1232	µg/l	BRL	0.065	BRL	0.065
Aroclor-1242	µg/l	BRL	0.065	BRL	0.065
Aroclor-1248	µg/l	BRL	0.065	BRL	0.065
Aroclor-1254	µg/l	BRL	0.065	BRL	0.065
Aroclor-1260	µg/l	BRL	0.065	BRL	0.065
Aroclor-1262	µg/l	BRL	0.065	BRL	0.065
Aroclor-1268	µg/l	BRL	0.065	BRL	0.065
EPA 625					
Acenaphthene	µg/l	BRL	5	BRL	5
Acenaphthylene	µg/l	BRL	5	BRL	5
Aniline	µg/l	BRL	5	BRL	5
Anthracene	µg/l	BRL	5	BRL	5
Azobenzene/Diphenyldiazine	µg/l	BRL	5	BRL	5
Benzidine	µg/l	BRL	5	BRL	5
Benzo (a) anthracene	µg/l	BRL	5	BRL	5
Benzo (a) pyrene	µg/l	BRL	5	BRL	5
Benzo (b) fluoranthene	µg/l	BRL	5	BRL	5
Benzo (g,h,i) perylene	µg/l	BRL	5	BRL	5
Benzo (k) fluoranthene	µg/l	BRL	5	BRL	5
Benzoic acid	µg/l	BRL	5	BRL	5

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		ECS-1		ECS-3	
Method / Analyte	**Units**	**Result**	**RDL**	**Result**	**RDL**
EPA 625 (continued)					
Benzyl alcohol	µg/l	BRL	5	BRL	5
Bis(2-chloroethoxy)methane	µg/l	BRL	5	BRL	5
Bis(2-chloroethyl)ether	µg/l	BRL	5	BRL	5
Bis(2-chloroisopropyl)ether	µg/l	BRL	5	BRL	5
Bis(2-ethylhexyl)phthalate	µg/l	BRL	5	8.21	5
4-Bromophenyl phenyl ether	µg/l	BRL	5	BRL	5
Butyl benzyl phthalate	µg/l	BRL	5	BRL	5
Carbazole	µg/l	BRL	5	BRL	5
4-Chloro-3-methylphenol	µg/l	BRL	5	BRL	5
4-Chloroaniline	µg/l	BRL	5	BRL	5
2-Chloronaphthalene	µg/l	BRL	5	BRL	5
2-Chlorophenol	µg/l	BRL	5	BRL	5
4-Chlorophenyl phenyl ether	µg/l	BRL	5	BRL	5
Chrysene	µg/l	BRL	5	BRL	5
Dibenzo (a,h) anthracene	µg/l	BRL	5	BRL	5
Dibenzofuran	µg/l	BRL	5	BRL	5
1,2-Dichlorobenzene	µg/l	BRL	5	BRL	5
1,3-Dichlorobenzene	µg/l	BRL	5	BRL	5
1,4-Dichlorobenzene	µg/l	BRL	5	BRL	5
3,3´-Dichlorobenzidine	µg/l	BRL	5	BRL	5
2,4-Dichlorophenol	µg/l	BRL	5	BRL	5
Diethyl phthalate	µg/l	BRL	5	BRL	5
Dimethyl phthalate	µg/l	BRL	5	BRL	5
2,4-Dimethylphenol	µg/l	BRL	5	BRL	5

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		ECS-1		ECS-3	
Method / Analyte	**Units**	**Result**	**RDL**	**Result**	**RDL**
EPA 625 (continued)					
Di-n-butyl phthalate	µg/l	BRL	5	BRL	5
4,6-Dinitro-2-methylphenol	µg/l	BRL	5	BRL	5
2,4-Dinitrophenol	µg/l	BRL	5	BRL	5
2,4-Dinitrotoluene	µg/l	BRL	5	BRL	5
2,6-Dinitrotoluene	µg/l	BRL	5	BRL	5
Di-n-octyl phthalate	µg/l	BRL	5	BRL	5
Fluoranthene	µg/l	BRL	5	BRL	5
Fluorene	µg/l	BRL	5	BRL	5
Hexachlorobenzene	µg/l	BRL	5	BRL	5
Hexachlorobutadiene	µg/l	BRL	5	BRL	5
Hexachlorocyclopentadiene	µg/l	BRL	5	BRL	5
Hexachloroethane	µg/l	BRL	5	BRL	5
Indeno (1,2,3-cd) pyrene	µg/l	BRL	5	BRL	5
Isophorone	µg/l	BRL	5	BRL	5
2-Methylnaphthalene	µg/l	BRL	5	BRL	5
2-Methylphenol	µg/l	BRL	5	BRL	5
3 & 4-Methylphenol	µg/l	BRL	10	BRL	10
Naphthalene	µg/l	BRL	5	13.9	5
2-Nitroaniline	µg/l	BRL	5	BRL	5
3-Nitroaniline	µg/l	BRL	5	BRL	5
4-Nitroaniline	µg/l	BRL	5	BRL	5
Nitrobenzene	µg/l	BRL	5	BRL	5
2-Nitrophenol	µg/l	BRL	5	BRL	5

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		ECS-1		ECS-3	
Method / Analyte	**Units**	**Result**	**RDL**	**Result**	**RDL**
EPA 625 (continued)					
4-Nitrophenol	µg/l	BRL	5	BRL	5
N-Nitrosodimethylamine	µg/l	BRL	5	BRL	5
N-Nitrosodi-n-propylamine	µg/l	BRL	5	BRL	5
N-Nitrosodiphenylamine	µg/l	BRL	5	BRL	5
Pentachlorophenol	µg/l	BRL	5	BRL	5
Phenanthrene	µg/l	BRL	5	BRL	5
Phenol	µg/l	BRL	5	BRL	5
Pyrene	µg/l	BRL	5	BRL	5
Pyridine	µg/l	BRL	5	BRL	5
1,2,4-Trichlorobenzene	µg/l	BRL	5	BRL	5
2,4,5-Trichlorophenol	µg/l	BRL	5	BRL	5
2,4,6-Trichlorophenol	µg/l	BRL	5	BRL	5
Hach 8167					
Total Residual Chlorine	mg/l	BRL	0.02	BRL	0.1
SM2540D					
Total Suspended Solids	mg/l	13	5	90	10
SW846 7196A/SM3500CrD					
Hexavalent Chromium	mg/l	BRL	0.005	BRL	0.025
EPA 300.0					
Chloride	mg/l	938	10	14000	1000

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		ECS-1		ECS-3	
Method / Analyte	**Units**	**Result**	**RDL**	**Result**	**RDL**
SW846 8260C					
1,1,2-Trichlorotrifluoroethane (Freon 113)	µg/l	BRL	5	BRL	5
Acetone	µg/l	BRL	50	BRL	50
Acrylonitrile	µg/l	BRL	2.5	BRL	2.5
Benzene	µg/l	8.8	5	17.1	5
Bromobenzene	µg/l	BRL	5	BRL	5
Bromochloromethane	µg/l	BRL	5	BRL	5
Bromodichloromethane	µg/l	BRL	2.5	BRL	2.5
Bromoform	µg/l	BRL	5	BRL	5
Bromomethane	µg/l	BRL	10	BRL	10
2-Butanone (MEK)	µg/l	BRL	50	BRL	50
n-Butylbenzene	µg/l	6.6	5	9.3	5
sec-Butylbenzene	µg/l	BRL	5	BRL	5
tert-Butylbenzene	µg/l	BRL	5	BRL	5
Carbon disulfide	µg/l	BRL	10	BRL	10
Carbon tetrachloride	µg/l	BRL	5	BRL	5
Chlorobenzene	µg/l	BRL	5	BRL	5
Chloroethane	µg/l	BRL	10	BRL	10
Chloroform	µg/l	BRL	5	BRL	5
Chloromethane	µg/l	BRL	10	BRL	10
2-Chlorotoluene	µg/l	BRL	5	BRL	5
4-Chlorotoluene	µg/l	BRL	5	BRL	5
1,2-Dibromo-3-chloropropane	µg/l	BRL	10	BRL	10
Dibromochloromethane	µg/l	BRL	2.5	BRL	2.5
1,2-Dibromoethane (EDB)	µg/l	BRL	2.5	BRL	2.5

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		ECS-1		ECS-3	
Method / Analyte	**Units**	**Result**	**RDL**	**Result**	**RDL**
SW846 8260C (Continued)					
Dibromomethane	µg/l	BRL	5	BRL	5
1,2-Dichlorobenzene	µg/l	BRL	5	BRL	5
1,3-Dichlorobenzene	µg/l	BRL	5	BRL	5
1,4-Dichlorobenzene	µg/l	BRL	5	BRL	5
Dichlorodifluoromethane (Freon12)	µg/l	BRL	10	BRL	10
1,1-Dichloroethane	µg/l	BRL	5	BRL	5
1,2-Dichloroethane	µg/l	BRL	5	BRL	5
1,1-Dichloroethene	µg/l	BRL	5	BRL	5
cis-1,2-Dichloroethene	µg/l	BRL	5	BRL	5
trans-1,2-Dichloroethene	µg/l	BRL	5	BRL	5
1,2-Dichloropropane	µg/l	BRL	5	BRL	5
1,3-Dichloropropane	µg/l	BRL	5	BRL	5
2,2-Dichloropropane	µg/l	BRL	5	BRL	5
1,1-Dichloropropene	µg/l	BRL	5	BRL	5
cis-1,3-Dichloropropene	µg/l	BRL	2.5	BRL	2.5
trans-1,3-Dichloropropene	µg/l	BRL	2.5	BRL	2.5
Ethylbenzene	µg/l	7.3	5	43.9	5
Hexachlorobutadiene	µg/l	BRL	2.5	BRL	2.5
2-Hexanone (MBK)	µg/l	BRL	50	BRL	50
Isopropylbenzene	µg/l	5.6	5	7.2	5
4-Isopropyltoluene	µg/l	BRL	5	BRL	5
Methyl tert-butyl ether	µg/l	BRL	5	BRL	5
4-Methyl-2-pentanone (MIBK)	µg/l	BRL	50	BRL	50
Methylene chloride	µg/l	BRL	10	BRL	10

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		ECS-1		ECS-3	
Method / Analyte	**Units**	**Result**	**RDL**	**Result**	**RDL**
SW846 8260C (Continued)					
Naphthalene	µg/l	6.4	5	32.2	5
n-Propylbenzene	µg/l	13.1	5	14.7	5
Styrene	µg/l	BRL	5	BRL	5
1,1,1,2-Tetrachloroethane	µg/l	BRL	5	BRL	5
1,1,2,2-Tetrachloroethane	µg/l	BRL	2.5	BRL	2.5
Tetrachloroethene	µg/l	9.2	5	BRL	5
Toluene	µg/l	BRL	5	13.8	5
1,2,3-Trichlorobenzene	µg/l	BRL	5	BRL	5
1,2,4-Trichlorobenzene	µg/l	BRL	5	BRL	5
1,3,5-Trichlorobenzene	µg/l	BRL	5	BRL	5
1,1,1-Trichloroethane	µg/l	BRL	5	BRL	5
1,1,2-Trichloroethane	µg/l	BRL	5	BRL	5
Trichloroethene	µg/l	5.2	5	BRL	5
Trichlorofluoromethane (Freon 11)	µg/l	BRL	5	BRL	5
1,2,3-Trichloropropane	µg/l	BRL	5	BRL	5
1,2,4-Trimethylbenzene	µg/l	110	5	12	5
1,3,5-Trimethylbenzene	µg/l	10.5	5	BRL	5
Vinyl chloride	µg/l	BRL	5	BRL	5
m,p-Xylene	µg/l	78.6	10	17.2	10
o-Xylene	µg/l	BRL	5	7.3	5
Tetrahydrofuran	µg/l	BRL	10	BRL	10
Ethyl ether	µg/l	BRL	5	BRL	5
Tert-amyl methyl ether	µg/l	BRL	5	BRL	5

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Method / Analyte	**Units**	**Result**	**RDL**	**Result**	**RDL**
SW846 8260C (Continued)					
Ethyl tert-butyl ether	µg/l	BRL	5	BRL	5
Di-isopropyl ether	µg/l	BRL	5	BRL	5
Tert-Butanol / butyl alcohol	µg/l	361	50	BRL	50
1,4-Dioxane	µg/l	BRL	100	BRL	100
trans-1,4-Dichloro-2-butene	µg/l	BRL	25	BRL	25
Ethanol	µg/l	BRL	2000	BRL	2000

BRL is Below Reporting Limit
RDL is Reportable Detection Limit

ATTACHMENT I

NOI FOR THE RGP

B. Suggested Form for Notice of Intent (NOI) for the Remediation General Permit

1. General facility/site information. Please provide the following information about the site:

a) Name of **facility/site**: O'Connell Oil - Lee 5		**Facility/site** mailing address:		
Location of **facility/site**: longitude: 73.25179W latitude: 42.309331N	Facility SIC code(s): 5541	Street: 241 Main Street		
b) Name of **facility/site owner:**		Town: Lee		
Email address of facility/site owner: jsobon@oconnelloil.com		State: MA	Zip: 01238	County: Berkshire
Telephone no. of facility/site **owner**: (413) 499-4800				
Fax no. of facility/site **owner**: 413-499-6072		**Owner** is (check one): 1. Federal ○ 2. State/Tribal ○ 3. Private ◉ 4. Other ○ if so, describe:		
Address of **owner** (if different from site):				
Street: PO Box 1387, 545 Merrill Road				
Town: Pittsfield	State: MA	Zip: 01201	County: Berkshire	
c) Legal name of **operator**:		**Operator** telephone no: 413-789-3530		
Environmental Compliance Services, Inc.		**Operator** fax no.: 413-789-2776	**Operator** email: jniedzielski@ecsconsult.com	
Operator contact name and title: Lori McCarthy, Project Manager/John Niedzielski, Licensed Site Professional				
Address of **operator** (if different from owner):		Street: 588 Silver Street		
Town: Agawam	State: MA	Zip: 01001	County: Hampden	

d) Check Y for "yes" or N for "no" for the following:
1. Has a prior NPDES permit exclusion been granted for the discharge? Y ○ N ◉, if Y, number:
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge?
Y ○ N ◉, if Y, date and tracking #:
3. Is the discharge a "new discharge" as defined by 40 CFR 122.2? Y ◉ N ○
4. For sites in Massachusetts, is the discharge covered under the Massachusetts Contingency Plan (MCP) and exempt from state permitting? Y ◉ N ○

e) Is site/facility subject to any State permitting, license, or other action which is causing the generation of discharge? Y ◉ N ○
If Y, please list:
1. site identification # assigned by the state of NH or MA: Release Tracking No. 1-17601
2. permit or license # assigned:
3. state agency contact information: name, location, and telephone number:

MassDEP, Bureau of Waste Site Cleanup
Attn: Rick Green, Section Chief
436 Dwight Street, Suite 5, Springfield, MA 01003

f) Is the site/facility covered by any other EPA permit, including:
1. Multi-Sector General Permit? Y ○ N ◉,
if Y, number:
2. Final Dewatering General Permit? Y ○ N ◉,
if Y, number:
3. EPA Construction General Permit? Y ○ N ◉,
if Y, number:
4. Individual NPDES permit? Y ○ N ◉,
if Y, number:
5. any other water quality related individual or general permit? Y ○ N ◉, if Y, number:

g) Is the site/facility located within or does it discharge to an Area of Critical Environmental Concern (ACEC)? Y ○ N ◉

h) Based on the facility/site information and any historical sampling data, identify the sub-category into which the potential discharge falls.

Activity Category	**Activity Sub-Category**
I - Petroleum Related Site Remediation	A. Gasoline Only Sites ☐ B. Fuel Oils and Other Oil Sites (including Residential Non-Business Remediation Discharges) ☐ C. Petroleum Sites with Additional Contamination ☐
II - Non Petroleum Site Remediation	A. Volatile Organic Compound (VOC) Only Sites ☐ B. VOC Sites with Additional Contamination ☐ C. Primarily Heavy Metal Sites ☐
III - Contaminated Construction Dewatering	A. General Urban Fill Sites ☐ B. Known Contaminated Sites ☒

IV - Miscellaneous Related Discharges	A. Aquifer Pump Testing to Evaluate Formerly Contaminated Sites ☐ B. Well Development/Rehabilitation at Contaminated/Formerly Contaminated Sites ☐ C. Hydrostatic Testing of Pipelines and Tanks ☐ D. Long-Term Remediation of Contaminated Sumps and Dikes ☐ E. Short-term Contaminated Dredging Drain Back Waters (if not covered by 401/404 permit) ☐

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

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

Groundwater will be pumped from two excavation pits in order to allow for collection of assessment soil samples, removal of petroleum-impacted soils, and to facilitate the removal and installation of underground storage tank systems.

b) Provide the following information about each discharge:

1) Number of discharge points: 2

2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft^3/s)?
Max. flow 0.0558 Is maximum flow a **design value**? Y ◉ N ○
Average flow (include units) 0.0011 Is average flow a design value or estimate? estimate

3) Latitude and longitude of each discharge within 100 feet:
pt.1: lat 42.310049N long 73.25241W pt.2: lat. 42.31042N long. 73.254645W;
pt.3: lat long pt.4: lat. long.;
pt.5: lat long pt.6: lat. long.;
pt.7: lat long pt.8: lat. long.; etc.

4) If hydrostatic testing, total volume of the discharge (gals):

5) Is the discharge intermittent ◉ or seasonal ○ ?
Is discharge ongoing? Y ○ N ○

c) Expected dates of discharge (mm/dd/yy): start Apr 12, 2011 end May 11, 2011

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).

3. Contaminant Information.

a) Based on the sub-category selected (See Appendix III), indicated whther each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional Sheets as needed.

Parameter*	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids (TSS)			✔	2	GRAB	SM2540D	5,000 ug/L	90,000	12.26	51,500	7.02
2. Total Residual Chlorine (TRC)		✔		2	GRAB	HACH 8167	20 ug/L	ND	NA	ND	NA
3. Total Petroleum Hydrocarbons (TPH)		✔		2	GRAB	1664A	1,000 ug/L	ND	NA	ND	NA
4. Cyanide (CN)	57125		✔	2	GRAB	335.4	0.5 ug/L	80.6	0	51.6	0.007
5. Benzene (B)	71432		✔	2	GRAB	8260B/C	5 ug/L	17.1	0.002	13.0	0.002
6. Toluene (T)	108883		✔	2	GRAB	8260B/C	5 ug/L	13.8	0.002	8.2	0.001
7. Ethylbenzene (E)	100414		✔	2	GRAB	8260B/C	5 ug/L	43.9	0.006	25.6	0.003
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207		✔	2	GRAB	8260B/C	10 ug/L	85.9	0.006	55.2	0.008
9. Total BTEX [2]	n/a		✔	2	GRAB	8260B/C	10 ug/L	161	0.016	102	0.014
10. Ethylene Dibromide (EDB) (1,2-dibromoethane)[3]	106934	✔		2	GRAB	504.1	0.01 ug/L	ND	NA	ND	NA
11. Methyl-tert-Butyl Ether (MtBE)	1634044	✔		2	GRAB	8260B/C	5 ug/L	ND	NA	ND	NA
12. ter-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650		✔	2	GRAB	8260B/C	50 ug/L	361	0.05	193	0.03

* Numbering system is provided to allow cross-referencing to Effluent Limits and Monitoring Requirements by Sub--Category included in Appendix III, as well as the Test Methods and Minumum Levels associated with each parameter provided in Appendix VI.

[2] BTEX = SUM of Benzene, Toluene, Ethylbenzene, total Xylenes.

[3] EDB is a groundwater contaminant at fuel spill and pesticide application sites in New England.

Parameter*	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
13. tert-Amyl Methyl Ether (TAME)	9940508	✔		2	GRAB	8260B/C	5 ug/L	ND	NA	ND	NA
14. Naphthalene	91203		✔	2	GRAB	8260B/C	5 ug/L	32.2	0.004	19.3	0.003
15. Carbon Tetrachloride	56235	✔		2	GRAB	8260B/C	5 ug/L	ND	NA	ND	NA
16. 1,2 Dichlorobenzene (o-DCB)	95501	✔		2	GRAB	8260B/C	5 ug/L	ND	NA	ND	NA
17. 1,3 Dichlorobenzene (m-DCB)	541731	✔		2	GRAB	8260B/C	5 ug/L	ND	NA	ND	NA
18. 1,4 Dichlorobenzene (p-DCB)	106467	✔		2	GRAB	8260B/C	5 ug/L	ND	NA	ND	NA
18a. Total dichlorobenzene		✔		2	GRAB	8260B/C	5 ug/L	ND	NA	ND	NA
19. 1,1 Dichloroethane	75343	✔		2	GRAB	8260B/C	5 ug/L	ND	NA	ND	NA
20. 1,2 Dichloroethane	107062	✔		2	GRAB	8260B/C	5 ug/L	ND	NA	ND	NA
21. 1,1 Dichloroethene	75354	✔		2	GRAB	8260B/C	5 ug/L	ND	NA	ND	NA
22. cis-1,2 Dichloroethene (DCE)	156592	✔		2	GRAB	8260B/C	5 ug/L	ND	NA	ND	NA
23. Methylene Chloride	75092	✔		2	GRAB	8260B/C	10 ug/L	ND	NA	ND	NA
24. Tetrachloroethene (PCE)	127184		✔	2	GRAB	8260B/C	5 ug/L	9.2	0.001	5.9	0.001
25. 1,1,1 Trichlroethane (TCA)	71556	✔		2	GRAB	8260B/C	5 ug/L	ND	NA	ND	NA
26. 1,1,2-Trichloroethane (TCA)	79005	✔		2	GRAB	8260B/C	5 ug/L	ND	NA	ND	NA
27. Trichloroethene (TCE)	790016		✔	2	GRAB	8260B/C	5 ug/L	5.2	0.001	3.9	0.001

Parameter*	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
28. Vinyl Chloride (Chloroethene)	75014	✔		2	GRAB	8260 B/C	5 ug/L	ND	NA	ND	NA
29. Acetone	67641	✔		2	GRAB	8260 B/C	50 ug/L	ND	NA	ND	NA
30. 1,4 Dioxane	123911	✔		2	GRAB	8260 B/C	100 ug/L	ND	NA	ND	NA
31. Total Phenols	108952	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
32. Pentachlorophenol (PCP)	87865	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
33. Total Phthalates (Phthalate esters)		✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
34. Bis (2-ethylhexyl) phthalate [di-(ethylhexyl) phthalate]	117817		✔	2	GRAB	625	5 ug/L	8.21	0.001	5.36	0.0007
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
a. Benzo(a) Anthracene	56553	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
b. Benzo(a) Pyrene	50328	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
c. Benzo(b) Fluoranthene	205992	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
d. Benzo(k) Fluoranthene	207089	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
e. Chrysene	21801	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
f. Dibenzo (a,h) anthracene	53703	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
g. Indeno (1,2,3-c,d) Pyrene	193395	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA

Parameter*	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
h. Acenaphthene	83329	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
i. Acenaphthylene	208968	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
j. Anthracene	120127	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
k. Benzo(g,h,i) Perylene	191242	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
l. Fluoranthene	206440	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
m. Fluorene	86737	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
n. Naphthalene	91203		✔	2	GRAB	625	5 ug/L	13.9	0.002	8.2	0.001
o. Phenanthrene	85018	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
p. Pyrene	129000	✔		2	GRAB	625	5 ug/L	ND	NA	ND	NA
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	✔		2	GRAB	608	0.065 ug/L	ND	NA	ND	NA
38. Chloride	16887006		✔	2	GRAB	300	10,000 ug/L	14,000,000	1,907	7,469,000	1,018
39. Antimony	7440360	✔		2	GRAB	200.7	6 ug/L	ND	NA	ND	NA
40. Arsenic	7440382		✔	2	GRAB	200.7	4 ug/L	11.1	0.002	6.55	0.001
41. Cadmium	7440439	✔		2	GRAB	200.7	2.5 ug/L	ND	NA	ND	NA
42. Chromium III (trivalent)	16065831	✔		0	NA	NA	NA	NA	NA	NA	NA
43. Chromium VI (hexavalent)	18540299	✔		2	GRAB	7196A	5 ug/L	ND	NA	ND	NA
44. Copper	7440508	✔		2	GRAB	200.7	5 ug/L	ND	NA	ND	NA
45. Lead	7439921	✔		2	GRAB	200.7	7.5 ug/L	ND	NA	ND	NA
46. Mercury	7439976	✔		2	GRAB	245.1	0.2 ug/L	ND	NA	ND	NA
47. Nickel	7440020		✔	2	GRAB	200.7	5 ug/L	13.8	0.002	9.4	0.001
48. Selenium	7782492	✔		2	GRAB	200.7	15 ug/L	ND	NA	ND	NA
49. Silver	7440224	✔		2	GRAB	200.7	5 ug/L	ND	NA	ND	NA
50. Zinc	7440666		✔	2	GRAB	200.7	5 ug/L	17.4	0.002	16.2	0.002
51. Iron	7439896		✔	2	GRAB	200.7	15 ug/L	18,500	2.52	10,815	1.47
Other (describe):											

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
		☐	☐								
		☐	☐								

b) For discharges where **metals** are believed present, please fill out the following (attach results of any calculations):

Step 1: Do any of the metals in the influent exceed the effluent limits in Appendix III (i.e., the limits set at zero dilution)? Y ◉ N ○	If yes, which metals? arsenic, iron
Step 2: For any metals which exceed the **Appendix III** limits, calculate the **dilution factor (DF)** using the formula in Part I.A.3.c (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metal: arsenic DF: 1,237 Metal: iron DF: 1,237 Metal: DF: Metal: DF: Etc.	Look up the limit calculated at the corresponding dilution factor in **Appendix IV.** Do any of the metals in the **influent** have the potential to exceed the corresponding **effluent** limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y ◉ N ○ If Y, list which metals: iron

4. Treatment system information. Please describe the treatment system using separate sheets as necessary, including:

a) A description of the treatment system, including a schematic of the proposed or existing treatment system:

The system will consist of submersible pumps that extract groundwater to a 21,000 gallon frac tank. Water from the Frac tank will be pumped through bag filters and subsequently through three 500 lb. liquid granular activated carbon units (LGAC) prior to discharge to a catch basin located in Center Street.

b) Identify each applicable treatment unit (check all that apply):	Frac. tank ☒	Air stripper ☐	Oil/water separator ☐	Equalization tanks ☐	Bag filter ☒	GAC filter ☒
	Chlorination ☐	De-chlorination ☐	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:
Average flow rate of discharge 5 gpm Maximum flow rate of treatment system 25 gpm
Design flow rate of treatment system 25 gpm

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

None planned.

5. Receiving surface water(s). Please provide information about the receiving water(s), using separate sheets as necessary:

a) Identify the discharge pathway:	Direct to receiving water ☐	Within facility (sewer) ☐	Storm drain ☒	Wetlands ☐	Other (describe):

b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters:

Treated water will be discharged to a catch basin in Center Street. These catch basin is connected to storm water lines that discharge to the Housatonic River.

c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water:
1. For multiple discharges, number the discharges sequentially.
2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water
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 B

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 69 cfs
Please attach any calculation sheets used to support stream flow and dilution calculations.

f) Is the receiving water a listed 303(d) water quality impaired or limited water? Y ◉ N ○ If yes, for which pollutant(s)?
PCBs and algal growth
Is there a final TMDL? Y ◉ N ○ If yes, for which pollutant(s)? unknown toxicity, priority organics, thermal modifications, pathogens, and turbidity

6. ESA and NHPA Eligibility.

Please provide the following information according to requirements of Permit Parts I.A.4 and I.A.5 Appendices II and VII.

a) Using the instructions in Appendix VII and information on Appendix II, under which criterion listed in Part I.C are you eligible for coverage under this general permit?

A ○ B ○ C ○ D ◉ E ○ F ○

b) If you selected Criterion D or F, has consultation with the federal services been completed? Y ○ N ○ Underway ◉

c) If consultation with U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is "not likely to adversely affect" listed species or critical habitat received? Y ○ N ○

d) Attach documentation of ESA eligibility as described in the NOI instructions and required by Appendix VII, Part I.C, Step 4.

e) Using the instructions in Appendix VII, under which criterion listed in Part II.C are you eligible for coverage under this general permit?

1 ○ 2 ◉ 3 ○

f) If Criterion 3 was selected, attach all written correspondence with the State or Tribal historic preservation officers, including any terms and conditions that outline measures the applicant must follow to mitigate or prevent adverse effects due to activities regulated by the RGP.

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.

Please see attached letter for supplemental information.

8. Signature Requirements: 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:	O'Connell Oil Associates, Lee 5
Operator signature:	
Printed Name &Title:	Lori A. McCarthy, Project Manager
Date:	03/28/2011

ATTACHMENT II

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

Report Date:
29-Mar-11 14:08

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
588 Silver Street
Agawam, MA 01001
Attn: Lori McCarthy

Project: O'Connell Oil Assoc - Lee, MA
Project #: 212738

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB25832-01	ECS-1	Ground Water	18-Mar-11 13:00	18-Mar-11 16:15
SB25832-02	ECS-3	Ground Water	18-Mar-11 14:00	18-Mar-11 16:15
SB25832-03	Trip	Deionized Water	18-Mar-11 00:00	18-Mar-11 16:15

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes.
Please note that this report contains 42 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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CASE NARRATIVE:

The samples were received 1.7 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

MADEP has published a list of analytical methods (CAM) which provides a series of recommended protocols for the acquisition, analysis and reporting of analytical data in support of MCP decisions. "Presumptive Certainty" can be established only for those methods published by the MADEP in the MCP CAM. The compounds and/or elements reported were specifically requested by the client on the Chain of Custody and in some cases may not include the full analyte list as defined in the method. Regulatory limits may not be achieved if specific method and/or technique was not requested on the Chain of Custody.

According to WSC-CAM 5/2009 Rev.1, Table 11 A-1, recovery for some VOC analytes have been deemed potentially difficult. Although they may still be within the recommended recovery range, a range has been set based on historical control limits.

Some target analytes which are not listed as exceptions in the Summary of CAM Reporting Limits may exceed the recommended RL based on sample initial volume or weight provided, % moisture content, or responsiveness of a particular analyte to purge and trap instrumentation.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

EPA 608

Samples:

SB25832-02 *ECS-3*

The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

Decachlorobiphenyl (Sr) [2C]

EPA 625

Calibration:

1102019

Analyte quantified by quadratic equation type calibration.

4-Nitrophenol

This affected the following samples:

1104837-BLK1
1104837-BS1
1104837-BSD1
ECS-1
ECS-3
S101130-ICV1
S102073-CCV1
S102190-CCV1

Laboratory Control Samples:

1104837 BS

2,4-Dinitrophenol percent recovery 16 (30-130) is outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

ECS-1
ECS-3

EPA 625

Laboratory Control Samples:

1104837 BS

4,6-Dinitro-2-methylphenol percent recovery 14 (30-130) is outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

ECS-1
ECS-3

Hexachlorocyclopentadiene percent recovery 25 (40-140) is outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

ECS-1
ECS-3

Phenol percent recovery 28 (30-130) is outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

ECS-1
ECS-3

Samples:

S102073-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

4,6-Dinitro-2-methylphenol (37.6%)

Analyte percent drift is outside individual acceptance criteria (20), but within overall method allowances.

4-Nitrophenol (55.3%)

This affected the following samples:

1104837-BLK1
1104837-BS1
1104837-BSD1

Hach 8167

Samples:

SB25832-02 *ECS-3*

The Reporting Limit has been raised to account for matrix interference.

Total Residual Chlorine

SW846 7196A/SM3500CrD

Spikes:

1104804-MS1 *Source: SB25832-01*

The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits.

Hexavalent Chromium

1104804-MSD1 *Source: SB25832-01*

The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits.

Hexavalent Chromium

Samples:

SW846 7196A/SM3500CrD

Samples:

SB25832-02 *ECS-3*

The Reporting Limit has been raised to account for matrix interference.

Hexavalent Chromium

SW846 8260C

Calibration:

1103016

Analyte quantified by quadratic equation type calibration.

1,1-Dichloroethane
Acrylonitrile
trans-1,2-Dichloroethene
Vinyl chloride

This affected the following samples:

1104853-BLK1
1104853-BS1
1104853-BSD1
ECS-1
ECS-3
S101868-ICV1
S102041-CCV1

S101868-ICV1

Analyte percent recovery is outside individual acceptance criteria (70-130).

1,1-Dichloroethane (152%)
Naphthalene (131%)

This affected the following samples:

1104853-BLK1
1104853-BS1
1104853-BSD1
ECS-1
ECS-3
S102041-CCV1

Laboratory Control Samples:

1104853 BS/BSD

1,1-Dichloroethane percent recoveries (135/117) are outside individual acceptance criteria (70-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

ECS-1
ECS-3

Naphthalene percent recoveries (132/126) are outside individual acceptance criteria (70-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

ECS-1
ECS-3

Samples:

S102041-CCV1

SW846 8260C

Samples:

S102041-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

Naphthalene (22.8%)

This affected the following samples:

1104853-BLK1
1104853-BS1
1104853-BSD1
ECS-1
ECS-3

SB25832-01 *ECS-1*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB25832-02 *ECS-3*

The Reporting Limits for this analysis are elevated due to sample foaming.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-1	212738	Ground Water	18-Mar-11 13:00	18-Mar-11
SB25832-01				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Compounds Prepared by method SW846 5030 Water MS			GS1									
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	BRL		µg/l	5.0	5	SW846 8260C	21-Mar-11	22-Mar-11	JLG	1104853	
67-64-1	Acetone	BRL		µg/l	50.0	5	"	"	"	"	"	
107-13-1	Acrylonitrile	BRL		µg/l	2.5	5	"	"	"	"	"	
71-43-2	Benzene	8.8		µg/l	5.0	5	"	"	"	"	"	
108-86-1	Bromobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
74-97-5	Bromochloromethane	BRL		µg/l	5.0	5	"	"	"	"	"	
75-27-4	Bromodichloromethane	BRL		µg/l	2.5	5	"	"	"	"	"	
75-25-2	Bromoform	BRL		µg/l	5.0	5	"	"	"	"	"	
74-83-9	Bromomethane	BRL		µg/l	10.0	5	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	BRL		µg/l	50.0	5	"	"	"	"	"	
104-51-8	n-Butylbenzene	6.6		µg/l	5.0	5	"	"	"	"	"	
135-98-8	sec-Butylbenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
98-06-6	tert-Butylbenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
75-15-0	Carbon disulfide	BRL		µg/l	10.0	5	"	"	"	"	"	
56-23-5	Carbon tetrachloride	BRL		µg/l	5.0	5	"	"	"	"	"	
108-90-7	Chlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
75-00-3	Chloroethane	BRL		µg/l	10.0	5	"	"	"	"	"	
67-66-3	Chloroform	BRL		µg/l	5.0	5	"	"	"	"	"	
74-87-3	Chloromethane	BRL		µg/l	10.0	5	"	"	"	"	"	
95-49-8	2-Chlorotoluene	BRL		µg/l	5.0	5	"	"	"	"	"	
106-43-4	4-Chlorotoluene	BRL		µg/l	5.0	5	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	BRL		µg/l	10.0	5	"	"	"	"	"	
124-48-1	Dibromochloromethane	BRL		µg/l	2.5	5	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	BRL		µg/l	2.5	5	"	"	"	"	"	
74-95-3	Dibromomethane	BRL		µg/l	5.0	5	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	BRL		µg/l	10.0	5	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	BRL		µg/l	5.0	5	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	BRL		µg/l	5.0	5	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	BRL		µg/l	5.0	5	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	BRL		µg/l	5.0	5	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	BRL		µg/l	5.0	5	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	BRL		µg/l	5.0	5	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	BRL		µg/l	2.5	5	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	BRL		µg/l	2.5	5	"	"	"	"	"	
100-41-4	Ethylbenzene	7.3		µg/l	5.0	5	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	BRL		µg/l	2.5	5	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	BRL		µg/l	50.0	5	"	"	"	"	"	
98-82-8	Isopropylbenzene	5.6		µg/l	5.0	5	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-1	212738	Ground Water	18-Mar-11 13:00	18-Mar-11
SB25832-01				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Compounds			GS1									
Prepared by method SW846 5030 Water MS												
99-87-6	4-Isopropyltoluene	BRL		µg/l	5.0	5	SW846 8260C	21-Mar-11	22-Mar-11	JLG	1104853	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	5.0	5	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	BRL		µg/l	50.0	5	"	"	"	"	"	
75-09-2	Methylene chloride	BRL		µg/l	10.0	5	"	"	"	"	"	
91-20-3	Naphthalene	6.4		µg/l	5.0	5	"	"	"	"	"	
103-65-1	n-Propylbenzene	13.1		µg/l	5.0	5	"	"	"	"	"	
100-42-5	Styrene	BRL		µg/l	5.0	5	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	BRL		µg/l	5.0	5	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	BRL		µg/l	2.5	5	"	"	"	"	"	
127-18-4	Tetrachloroethene	9.2		µg/l	5.0	5	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	5.0	5	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	BRL		µg/l	5.0	5	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	BRL		µg/l	5.0	5	"	"	"	"	"	
79-01-6	Trichloroethene	5.2		µg/l	5.0	5	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	BRL		µg/l	5.0	5	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	BRL		µg/l	5.0	5	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	110		µg/l	5.0	5	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	10.5		µg/l	5.0	5	"	"	"	"	"	
75-01-4	Vinyl chloride	BRL		µg/l	5.0	5	"	"	"	"	"	
179601-23-1	m,p-Xylene	78.6		µg/l	10.0	5	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	5.0	5	"	"	"	"	"	
109-99-9	Tetrahydrofuran	BRL		µg/l	10.0	5	"	"	"	"	"	
60-29-7	Ethyl ether	BRL		µg/l	5.0	5	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	BRL		µg/l	5.0	5	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	BRL		µg/l	5.0	5	"	"	"	"	"	
108-20-3	Di-isopropyl ether	BRL		µg/l	5.0	5	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	361		µg/l	50.0	5	"	"	"	"	"	
123-91-1	1,4-Dioxane	BRL		µg/l	100	5	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-butene	BRL		µg/l	25.0	5	"	"	"	"	"	
64-17-5	Ethanol	BRL		µg/l	2000	5	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*92*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*97*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*96*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*92*			*70-130 %*		"	"	"	"	"	
VPH Aliphatic/Aromatic Carbon Ranges												
Prepared by method VPH - EPA 5030B												
	C5-C8 Aliphatic Hydrocarbons	0.209		mg/l	0.0750	1	+MADEP VPH 5/2004 Rev. 1.1	21-Mar-11	21-Mar-11	MP	1104829	
	C9-C12 Aliphatic Hydrocarbons	0.680		mg/l	0.0250	1	"	"	"	"	"	
	C9-C10 Aromatic Hydrocarbons	0.385		mg/l	0.0250	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-1	212738	Ground Water	18-Mar-11 13:00	18-Mar-11
SB25832-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds												
VPH Aliphatic/Aromatic Carbon Ranges Prepared by method VPH - EPA 5030B												
	Unadjusted C5-C8 Aliphatic Hydrocarbons	0.329		mg/l	0.0750	1	+MADEP VPH 5/2004 Rev. 1.1	21-Mar-11	21-Mar-11	MP	1104829	
	Unadjusted C9-C12 Aliphatic Hydrocarbons	1.06		mg/l	0.0250	1	"	"	"	"	"	
VPH Target Analytes Prepared by method VPH - EPA 5030B												
71-43-2	Benzene	8.9		µg/l	5.0	1	"	"	"	"	"	
100-41-4	Ethylbenzene	9.0		µg/l	5.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	5.0	1	"	"	"	"	"	
91-20-3	Naphthalene	21.0		µg/l	5.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	5.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	95.4		µg/l	10.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	5.0	1	"	"	"	"	"	
Surrogate recoveries:												
615-59-8	*2,5-Dibromotoluene (FID)*	*124*			*70-130 %*		"	"	"	"	"	
615-59-8	*2,5-Dibromotoluene (PID)*	*121*			*70-130 %*		"	"	"	"	"	
Microextractable Organic Compounds												
106-93-4	1,2-Dibromoethane (EDB)	BRL		µg/l	0.0100	1	EPA 504.1	21-Mar-11	21-Mar-11	SM	1104877	
Semivolatile Organic Compounds by GCMS												
Semivolatile Organic Compounds by EPA 625 Prepared by method SW846 3510C												
83-32-9	Acenaphthene	BRL		µg/l	5.00	1	EPA 625	21-Mar-11	23-Mar-11	MSL	1104837	X
208-96-8	Acenaphthylene	BRL		µg/l	5.00	1	"	"	"	"	"	X
62-53-3	Aniline	BRL		µg/l	5.00	1	"	"	"	"	"	
120-12-7	Anthracene	BRL		µg/l	5.00	1	"	"	"	"	"	X
103-33-3	Azobenzene/Diphenyldiazine	BRL		µg/l	5.00	1	"	"	"	"	"	
92-87-5	Benzidine	BRL		µg/l	5.00	1	"	"	"	"	"	X
56-55-3	Benzo (a) anthracene	BRL		µg/l	5.00	1	"	"	"	"	"	X
50-32-8	Benzo (a) pyrene	BRL		µg/l	5.00	1	"	"	"	"	"	X
205-99-2	Benzo (b) fluoranthene	BRL		µg/l	5.00	1	"	"	"	"	"	X
191-24-2	Benzo (g,h,i) perylene	BRL		µg/l	5.00	1	"	"	"	"	"	X
207-08-9	Benzo (k) fluoranthene	BRL		µg/l	5.00	1	"	"	"	"	"	X
65-85-0	Benzoic acid	BRL		µg/l	5.00	1	"	"	"	"	"	
100-51-6	Benzyl alcohol	BRL		µg/l	5.00	1	"	"	"	"	"	
111-91-1	Bis(2-chloroethoxy)methane	BRL		µg/l	5.00	1	"	"	"	"	"	X
111-44-4	Bis(2-chloroethyl)ether	BRL		µg/l	5.00	1	"	"	"	"	"	X
108-60-1	Bis(2-chloroisopropyl)ether	BRL		µg/l	5.00	1	"	"	"	"	"	X
117-81-7	Bis(2-ethylhexyl)phthalate	BRL		µg/l	5.00	1	"	"	"	"	"	X
101-55-3	4-Bromophenyl phenyl ether	BRL		µg/l	5.00	1	"	"	"	"	"	X
85-68-7	Butyl benzyl phthalate	BRL		µg/l	5.00	1	"	"	"	"	"	X
86-74-8	Carbazole	BRL		µg/l	5.00	1	"	"	"	"	"	
59-50-7	4-Chloro-3-methylphenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
106-47-8	4-Chloroaniline	BRL		µg/l	5.00	1	"	"	"	"	"	
91-58-7	2-Chloronaphthalene	BRL		µg/l	5.00	1	"	"	"	"	"	X
95-57-8	2-Chlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-1	212738	Ground Water	18-Mar-11 13:00	18-Mar-11
SB25832-01				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Semivolatile Organic Compounds by GCMS												
Semivolatile Organic Compounds by EPA 625 Prepared by method SW846 3510C												
7005-72-3	4-Chlorophenyl phenyl ether	BRL		µg/l	5.00	1	EPA 625	21-Mar-11	23-Mar-11	MSL	1104837	X
218-01-9	Chrysene	BRL		µg/l	5.00	1	"	"	"	"	"	X
53-70-3	Dibenzo (a,h) anthracene	BRL		µg/l	5.00	1	"	"	"	"	"	X
132-64-9	Dibenzofuran	BRL		µg/l	5.00	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
541-73-1	1,3-Dichlorobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
106-46-7	1,4-Dichlorobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
91-94-1	3,3´-Dichlorobenzidine	BRL		µg/l	5.00	1	"	"	"	"	"	X
120-83-2	2,4-Dichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
84-66-2	Diethyl phthalate	BRL		µg/l	5.00	1	"	"	"	"	"	X
131-11-3	Dimethyl phthalate	BRL		µg/l	5.00	1	"	"	"	"	"	X
105-67-9	2,4-Dimethylphenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
84-74-2	Di-n-butyl phthalate	BRL		µg/l	5.00	1	"	"	"	"	"	X
534-52-1	4,6-Dinitro-2-methylphenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
51-28-5	2,4-Dinitrophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
121-14-2	2,4-Dinitrotoluene	BRL		µg/l	5.00	1	"	"	"	"	"	X
606-20-2	2,6-Dinitrotoluene	BRL		µg/l	5.00	1	"	"	"	"	"	X
117-84-0	Di-n-octyl phthalate	BRL		µg/l	5.00	1	"	"	"	"	"	X
206-44-0	Fluoranthene	BRL		µg/l	5.00	1	"	"	"	"	"	X
86-73-7	Fluorene	BRL		µg/l	5.00	1	"	"	"	"	"	X
118-74-1	Hexachlorobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
87-68-3	Hexachlorobutadiene	BRL		µg/l	5.00	1	"	"	"	"	"	X
77-47-4	Hexachlorocyclopentadiene	BRL		µg/l	5.00	1	"	"	"	"	"	X
67-72-1	Hexachloroethane	BRL		µg/l	5.00	1	"	"	"	"	"	X
193-39-5	Indeno (1,2,3-cd) pyrene	BRL		µg/l	5.00	1	"	"	"	"	"	X
78-59-1	Isophorone	BRL		µg/l	5.00	1	"	"	"	"	"	X
91-57-6	2-Methylnaphthalene	BRL		µg/l	5.00	1	"	"	"	"	"	
95-48-7	2-Methylphenol	BRL		µg/l	5.00	1	"	"	"	"	"	
108-39-4, 106-44-5	3 & 4-Methylphenol	BRL		µg/l	10.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	5.00	1	"	"	"	"	"	X
88-74-4	2-Nitroaniline	BRL		µg/l	5.00	1	"	"	"	"	"	
99-09-2	3-Nitroaniline	BRL		µg/l	5.00	1	"	"	"	"	"	
100-01-6	4-Nitroaniline	BRL		µg/l	5.00	1	"	"	"	"	"	
98-95-3	Nitrobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
88-75-5	2-Nitrophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
100-02-7	4-Nitrophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
62-75-9	N-Nitrosodimethylamine	BRL		µg/l	5.00	1	"	"	"	"	"	X
621-64-7	N-Nitrosodi-n-propylamine	BRL		µg/l	5.00	1	"	"	"	"	"	X
86-30-6	N-Nitrosodiphenylamine	BRL		µg/l	5.00	1	"	"	"	"	"	X
87-86-5	Pentachlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
85-01-8	Phenanthrene	BRL		µg/l	5.00	1	"	"	"	"	"	X
108-95-2	Phenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
129-00-0	Pyrene	BRL		µg/l	5.00	1	"	"	"	"	"	X
110-86-1	Pyridine	BRL		µg/l	5.00	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-1	212738	Ground Water	18-Mar-11 13:00	18-Mar-11
SB25832-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolatile Organic Compounds by GCMS												
Semivolatile Organic Compounds by EPA 625 Prepared by method SW846 3510C												
120-82-1	1,2,4-Trichlorobenzene	BRL		µg/l	5.00	1	EPA 625	21-Mar-11	23-Mar-11	MSL	1104837	X
95-95-4	2,4,5-Trichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	
88-06-2	2,4,6-Trichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
Surrogate recoveries:												
321-60-8	*2-Fluorobiphenyl*	*57*			*30-130 %*		"	"	"	"	"	
367-12-4	*2-Fluorophenol*	*49*			*15-110 %*		"	"	"	"	"	
4165-60-0	*Nitrobenzene-d5*	*63*			*30-130 %*		"	"	"	"	"	
4165-62-2	*Phenol-d5*	*35*			*15-110 %*		"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*58*			*30-130 %*		"	"	"	"	"	
118-79-6	*2,4,6-Tribromophenol*	*67*			*15-110 %*		"	"	"	"	"	
Semivolatile Organic Compounds by GC												
Polychlorinated Biphenyls by EPA 608 Prepared by method SW846 3510C												
12674-11-2	Aroclor-1016	BRL		µg/l	0.0650	1	EPA 608	21-Mar-11	22-Mar-11	SM	1104828	X
11104-28-2	Aroclor-1221	BRL		µg/l	0.0650	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	BRL		µg/l	0.0650	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	BRL		µg/l	0.0650	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	BRL		µg/l	0.0650	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	BRL		µg/l	0.0650	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	BRL		µg/l	0.0650	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	BRL		µg/l	0.0650	1	"	"	"	"	"	
11100-14-4	Aroclor-1268	BRL		µg/l	0.0650	1	"	"	"	"	"	
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*49*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*36*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*73*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*86*			*30-150 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	21-Mar-11	23-Mar-11	JK	1104821	
Total Metals by EPA 200/6000 Series Methods												
	Preservation	Field Preservec		N/A		1	EPA 200/6000 methods	18-Mar-11	18-Mar-11	LA	1104762	
Total Metals by EPA 200 Series Methods												
7440-22-4	Silver	BRL		mg/l	0.0050	1	EPA 200.7	21-Mar-11	22-Mar-11	TBC	1104677	X
7440-38-2	Arsenic	BRL		mg/l	0.0040	1	"	"	"	"	"	X
7440-43-9	Cadmium	BRL		mg/l	0.0025	1	"	"	"	"	"	X
7440-47-3	Chromium	BRL		mg/l	0.0050	1	"	"	"	"	"	X
7440-50-8	Copper	BRL		mg/l	0.0050	1	"	"	"	"	"	X
7439-89-6	Iron	3.13		mg/l	0.0150	1	"	"	"	"	"	X
7439-97-6	Mercury	BRL		mg/l	0.00020	1	EPA 245.1/7470A	"	22-Mar-11	ARF	1104678	X
7440-02-0	Nickel	BRL		mg/l	0.0050	1	EPA 200.7	"	22-Mar-11	TBC	1104677	X
7439-92-1	Lead	BRL		mg/l	0.0075	1	"	"	"	"	"	X
7440-36-0	Antimony	BRL		mg/l	0.0060	1	"	"	"	"	"	X
7782-49-2	Selenium	BRL		mg/l	0.0150	1	"	"	23-Mar-11	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-1 SB25832-01	212738	Ground Water	18-Mar-11 13:00	18-Mar-11

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Total Metals by EPA 200 Series Methods												
7440-66-6	Zinc	0.0150		mg/l	0.0050	1	EPA 200.7	21-Mar-11	22-Mar-11	TBC	1104677	X
General Chemistry Parameters												
16887-00-6	Chloride	938		mg/l	10.0	10	EPA 300.0	25-Mar-11	25-Mar-11	JAK	1105305	X
18540-29-9	Hexavalent Chromium	BRL		mg/l	0.005	1	SW846 7196A/SM3500CrD	18-Mar-11 17:15	18-Mar-11 17:16	GMA	1104804	
57-12-5	Cyanide (total)	0.0806		mg/l	0.00500	1	EPA 335.4 / SW846 9012A	23-Mar-11	24-Mar-11	eemon	1105012	X
7782-50-5	Total Residual Chlorine	BRL	CIHT	mg/l	0.020	1	Hach 8167	18-Mar-11 18:15	18-Mar-11 18:15	GMA	1104810	X
	Total Suspended Solids	13.0		mg/l	5.00	1	SM2540D	22-Mar-11	22-Mar-11	SJL	1104978	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-3	212738	Ground Water	18-Mar-11 14:00	18-Mar-11
SB25832-02				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Compounds Prepared by method SW846 5030 Water MS			R04									
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	BRL		µg/l	5.0	5	SW846 8260C	21-Mar-11	22-Mar-11	JLG	1104853	
67-64-1	Acetone	BRL		µg/l	50.0	5	"	"	"	"	"	
107-13-1	Acrylonitrile	BRL		µg/l	2.5	5	"	"	"	"	"	
71-43-2	Benzene	17.1		µg/l	5.0	5	"	"	"	"	"	
108-86-1	Bromobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
74-97-5	Bromochloromethane	BRL		µg/l	5.0	5	"	"	"	"	"	
75-27-4	Bromodichloromethane	BRL		µg/l	2.5	5	"	"	"	"	"	
75-25-2	Bromoform	BRL		µg/l	5.0	5	"	"	"	"	"	
74-83-9	Bromomethane	BRL		µg/l	10.0	5	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	BRL		µg/l	50.0	5	"	"	"	"	"	
104-51-8	n-Butylbenzene	9.3		µg/l	5.0	5	"	"	"	"	"	
135-98-8	sec-Butylbenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
98-06-6	tert-Butylbenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
75-15-0	Carbon disulfide	BRL		µg/l	10.0	5	"	"	"	"	"	
56-23-5	Carbon tetrachloride	BRL		µg/l	5.0	5	"	"	"	"	"	
108-90-7	Chlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
75-00-3	Chloroethane	BRL		µg/l	10.0	5	"	"	"	"	"	
67-66-3	Chloroform	BRL		µg/l	5.0	5	"	"	"	"	"	
74-87-3	Chloromethane	BRL		µg/l	10.0	5	"	"	"	"	"	
95-49-8	2-Chlorotoluene	BRL		µg/l	5.0	5	"	"	"	"	"	
106-43-4	4-Chlorotoluene	BRL		µg/l	5.0	5	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	BRL		µg/l	10.0	5	"	"	"	"	"	
124-48-1	Dibromochloromethane	BRL		µg/l	2.5	5	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	BRL		µg/l	2.5	5	"	"	"	"	"	
74-95-3	Dibromomethane	BRL		µg/l	5.0	5	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	BRL		µg/l	10.0	5	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	BRL		µg/l	5.0	5	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	BRL		µg/l	5.0	5	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	BRL		µg/l	5.0	5	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	BRL		µg/l	5.0	5	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	BRL		µg/l	5.0	5	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	BRL		µg/l	5.0	5	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	BRL		µg/l	2.5	5	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	BRL		µg/l	2.5	5	"	"	"	"	"	
100-41-4	Ethylbenzene	43.9		µg/l	5.0	5	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	BRL		µg/l	2.5	5	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	BRL		µg/l	50.0	5	"	"	"	"	"	
98-82-8	Isopropylbenzene	7.2		µg/l	5.0	5	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-3	212738	Ground Water	18-Mar-11 14:00	18-Mar-11
SB25832-02				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Compounds Prepared by method SW846 5030 Water MS			R04									
99-87-6	4-Isopropyltoluene	BRL		µg/l	5.0	5	SW846 8260C	21-Mar-11	22-Mar-11	JLG	1104853	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	5.0	5	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	BRL		µg/l	50.0	5	"	"	"	"	"	
75-09-2	Methylene chloride	BRL		µg/l	10.0	5	"	"	"	"	"	
91-20-3	Naphthalene	32.2		µg/l	5.0	5	"	"	"	"	"	
103-65-1	n-Propylbenzene	14.7		µg/l	5.0	5	"	"	"	"	"	
100-42-5	Styrene	BRL		µg/l	5.0	5	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	BRL		µg/l	5.0	5	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	BRL		µg/l	2.5	5	"	"	"	"	"	
127-18-4	Tetrachloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
108-88-3	Toluene	13.8		µg/l	5.0	5	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	BRL		µg/l	5.0	5	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	BRL		µg/l	5.0	5	"	"	"	"	"	
79-01-6	Trichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	BRL		µg/l	5.0	5	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	BRL		µg/l	5.0	5	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	12.0		µg/l	5.0	5	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
75-01-4	Vinyl chloride	BRL		µg/l	5.0	5	"	"	"	"	"	
179601-23-1	m,p-Xylene	17.2		µg/l	10.0	5	"	"	"	"	"	
95-47-6	o-Xylene	7.3		µg/l	5.0	5	"	"	"	"	"	
109-99-9	Tetrahydrofuran	BRL		µg/l	10.0	5	"	"	"	"	"	
60-29-7	Ethyl ether	BRL		µg/l	5.0	5	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	BRL		µg/l	5.0	5	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	BRL		µg/l	5.0	5	"	"	"	"	"	
108-20-3	Di-isopropyl ether	BRL		µg/l	5.0	5	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	BRL		µg/l	50.0	5	"	"	"	"	"	
123-91-1	1,4-Dioxane	BRL		µg/l	100	5	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-butene	BRL		µg/l	25.0	5	"	"	"	"	"	
64-17-5	Ethanol	BRL		µg/l	2000	5	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*87*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*99*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*96*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*92*			*70-130 %*		"	"	"	"	"	
VPH Aliphatic/Aromatic Carbon Ranges Prepared by method VPH - EPA 5030B												
	C5-C8 Aliphatic Hydrocarbons	0.744		mg/l	0.0750	1	+MADEP VPH 5/2004 Rev. 1.1	21-Mar-11	21-Mar-11	MP	1104829	
	C9-C12 Aliphatic Hydrocarbons	0.797		mg/l	0.0250	1	"	"	"	"	"	
	C9-C10 Aromatic Hydrocarbons	0.424		mg/l	0.0250	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-3	212738	Ground Water	18-Mar-11 14:00	18-Mar-11
SB25832-02				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds												
VPH Aliphatic/Aromatic Carbon Ranges Prepared by method VPH - EPA 5030B												
	Unadjusted C5-C8 Aliphatic Hydrocarbons	0.864		mg/l	0.0750	1	+MADEP VPH 5/2004 Rev. 1.1	21-Mar-11	21-Mar-11	MP	1104829	
	Unadjusted C9-C12 Aliphatic Hydrocarbons	1.22		mg/l	0.0250	1	"	"	"	"	"	
VPH Target Analytes Prepared by method VPH - EPA 5030B												
71-43-2	Benzene	20.5		µg/l	5.0	1	"	"	"	"	"	
100-41-4	Ethylbenzene	52.4		µg/l	5.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	5.0	1	"	"	"	"	"	
91-20-3	Naphthalene	56.4		µg/l	5.0	1	"	"	"	"	"	
108-88-3	Toluene	21.1		µg/l	5.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	18.7		µg/l	10.0	1	"	"	"	"	"	
95-47-6	o-Xylene	7.6		µg/l	5.0	1	"	"	"	"	"	
Surrogate recoveries:												
615-59-8	*2,5-Dibromotoluene (FID)*	*116*			*70-130 %*		"	"	"	"	"	
615-59-8	*2,5-Dibromotoluene (PID)*	*125*			*70-130 %*		"	"	"	"	"	
Microextractable Organic Compounds												
106-93-4	1,2-Dibromoethane (EDB)	BRL		µg/l	0.0100	1	EPA 504.1	21-Mar-11	21-Mar-11	SM	1104877	
Semivolatile Organic Compounds by GCMS												
Semivolatile Organic Compounds by EPA 625 Prepared by method SW846 3510C												
83-32-9	Acenaphthene	BRL		µg/l	5.00	1	EPA 625	21-Mar-11	23-Mar-11	MSL	1104837	X
208-96-8	Acenaphthylene	BRL		µg/l	5.00	1	"	"	"	"	"	X
62-53-3	Aniline	BRL		µg/l	5.00	1	"	"	"	"	"	
120-12-7	Anthracene	BRL		µg/l	5.00	1	"	"	"	"	"	X
103-33-3	Azobenzene/Diphenyldiazine	BRL		µg/l	5.00	1	"	"	"	"	"	
92-87-5	Benzidine	BRL		µg/l	5.00	1	"	"	"	"	"	X
56-55-3	Benzo (a) anthracene	BRL		µg/l	5.00	1	"	"	"	"	"	X
50-32-8	Benzo (a) pyrene	BRL		µg/l	5.00	1	"	"	"	"	"	X
205-99-2	Benzo (b) fluoranthene	BRL		µg/l	5.00	1	"	"	"	"	"	X
191-24-2	Benzo (g,h,i) perylene	BRL		µg/l	5.00	1	"	"	"	"	"	X
207-08-9	Benzo (k) fluoranthene	BRL		µg/l	5.00	1	"	"	"	"	"	X
65-85-0	Benzoic acid	BRL		µg/l	5.00	1	"	"	"	"	"	
100-51-6	Benzyl alcohol	BRL		µg/l	5.00	1	"	"	"	"	"	
111-91-1	Bis(2-chloroethoxy)methane	BRL		µg/l	5.00	1	"	"	"	"	"	X
111-44-4	Bis(2-chloroethyl)ether	BRL		µg/l	5.00	1	"	"	"	"	"	X
108-60-1	Bis(2-chloroisopropyl)ether	BRL		µg/l	5.00	1	"	"	"	"	"	X
117-81-7	Bis(2-ethylhexyl)phthalate	8.21		µg/l	5.00	1	"	"	"	"	"	X
101-55-3	4-Bromophenyl phenyl ether	BRL		µg/l	5.00	1	"	"	"	"	"	X
85-68-7	Butyl benzyl phthalate	BRL		µg/l	5.00	1	"	"	"	"	"	X
86-74-8	Carbazole	BRL		µg/l	5.00	1	"	"	"	"	"	
59-50-7	4-Chloro-3-methylphenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
106-47-8	4-Chloroaniline	BRL		µg/l	5.00	1	"	"	"	"	"	
91-58-7	2-Chloronaphthalene	BRL		µg/l	5.00	1	"	"	"	"	"	X
95-57-8	2-Chlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-3	212738	Ground Water	18-Mar-11 14:00	18-Mar-11
SB25832-02				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Semivolatile Organic Compounds by GCMS												
Semivolatile Organic Compounds by EPA 625 Prepared by method SW846 3510C												
7005-72-3	4-Chlorophenyl phenyl ether	BRL		µg/l	5.00	1	EPA 625	21-Mar-11	23-Mar-11	MSL	1104837	X
218-01-9	Chrysene	BRL		µg/l	5.00	1	"	"	"	"	"	X
53-70-3	Dibenzo (a,h) anthracene	BRL		µg/l	5.00	1	"	"	"	"	"	X
132-64-9	Dibenzofuran	BRL		µg/l	5.00	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
541-73-1	1,3-Dichlorobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
106-46-7	1,4-Dichlorobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
91-94-1	3,3´-Dichlorobenzidine	BRL		µg/l	5.00	1	"	"	"	"	"	X
120-83-2	2,4-Dichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
84-66-2	Diethyl phthalate	BRL		µg/l	5.00	1	"	"	"	"	"	X
131-11-3	Dimethyl phthalate	BRL		µg/l	5.00	1	"	"	"	"	"	X
105-67-9	2,4-Dimethylphenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
84-74-2	Di-n-butyl phthalate	BRL		µg/l	5.00	1	"	"	"	"	"	X
534-52-1	4,6-Dinitro-2-methylphenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
51-28-5	2,4-Dinitrophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
121-14-2	2,4-Dinitrotoluene	BRL		µg/l	5.00	1	"	"	"	"	"	X
606-20-2	2,6-Dinitrotoluene	BRL		µg/l	5.00	1	"	"	"	"	"	X
117-84-0	Di-n-octyl phthalate	BRL		µg/l	5.00	1	"	"	"	"	"	X
206-44-0	Fluoranthene	BRL		µg/l	5.00	1	"	"	"	"	"	X
86-73-7	Fluorene	BRL		µg/l	5.00	1	"	"	"	"	"	X
118-74-1	Hexachlorobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
87-68-3	Hexachlorobutadiene	BRL		µg/l	5.00	1	"	"	"	"	"	X
77-47-4	Hexachlorocyclopentadiene	BRL		µg/l	5.00	1	"	"	"	"	"	X
67-72-1	Hexachloroethane	BRL		µg/l	5.00	1	"	"	"	"	"	X
193-39-5	Indeno (1,2,3-cd) pyrene	BRL		µg/l	5.00	1	"	"	"	"	"	X
78-59-1	Isophorone	BRL		µg/l	5.00	1	"	"	"	"	"	X
91-57-6	2-Methylnaphthalene	BRL		µg/l	5.00	1	"	"	"	"	"	
95-48-7	2-Methylphenol	BRL		µg/l	5.00	1	"	"	"	"	"	
108-39-4, 106-44-5	3 & 4-Methylphenol	BRL		µg/l	10.0	1	"	"	"	"	"	
91-20-3	Naphthalene	13.9		µg/l	5.00	1	"	"	"	"	"	X
88-74-4	2-Nitroaniline	BRL		µg/l	5.00	1	"	"	"	"	"	
99-09-2	3-Nitroaniline	BRL		µg/l	5.00	1	"	"	"	"	"	
100-01-6	4-Nitroaniline	BRL		µg/l	5.00	1	"	"	"	"	"	
98-95-3	Nitrobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
88-75-5	2-Nitrophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
100-02-7	4-Nitrophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
62-75-9	N-Nitrosodimethylamine	BRL		µg/l	5.00	1	"	"	"	"	"	X
621-64-7	N-Nitrosodi-n-propylamine	BRL		µg/l	5.00	1	"	"	"	"	"	X
86-30-6	N-Nitrosodiphenylamine	BRL		µg/l	5.00	1	"	"	"	"	"	X
87-86-5	Pentachlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
85-01-8	Phenanthrene	BRL		µg/l	5.00	1	"	"	"	"	"	X
108-95-2	Phenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
129-00-0	Pyrene	BRL		µg/l	5.00	1	"	"	"	"	"	X
110-86-1	Pyridine	BRL		µg/l	5.00	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-3	212738	Ground Water	18-Mar-11 14:00	18-Mar-11
SB25832-02				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Semivolatile Organic Compounds by GCMS												
Semivolatile Organic Compounds by EPA 625 Prepared by method SW846 3510C												
120-82-1	1,2,4-Trichlorobenzene	BRL		µg/l	5.00	1	EPA 625	21-Mar-11	23-Mar-11	MSL	1104837	X
95-95-4	2,4,5-Trichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	
88-06-2	2,4,6-Trichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
Surrogate recoveries:												
321-60-8	*2-Fluorobiphenyl*	*61*			*30-130 %*		"	"	"	"	"	
367-12-4	*2-Fluorophenol*	*55*			*15-110 %*		"	"	"	"	"	
4165-60-0	*Nitrobenzene-d5*	*67*			*30-130 %*		"	"	"	"	"	
4165-62-2	*Phenol-d5*	*41*			*15-110 %*		"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*64*			*30-130 %*		"	"	"	"	"	
118-79-6	*2,4,6-Tribromophenol*	*77*			*15-110 %*		"	"	"	"	"	
Semivolatile Organic Compounds by GC												
Polychlorinated Biphenyls by EPA 608 Prepared by method SW846 3510C												
12674-11-2	Aroclor-1016	BRL		µg/l	0.0650	1	EPA 608	21-Mar-11	22-Mar-11	SM	1104828	X
11104-28-2	Aroclor-1221	BRL		µg/l	0.0650	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	BRL		µg/l	0.0650	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	BRL		µg/l	0.0650	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	BRL		µg/l	0.0650	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	BRL		µg/l	0.0650	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	BRL		µg/l	0.0650	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	BRL		µg/l	0.0650	1	"	"	"	"	"	
11100-14-4	Aroclor-1268	BRL		µg/l	0.0650	1	"	"	"	"	"	
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*56*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*42*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*51*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*1690*	S02		*30-150 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	21-Mar-11	23-Mar-11	JK	1104821	
Total Metals by EPA 200/6000 Series Methods												
	Preservation	Field Preservec		N/A		1	EPA 200/6000 methods	18-Mar-11	18-Mar-11	LA	1104762	
Total Metals by EPA 200 Series Methods												
7440-22-4	Silver	BRL		mg/l	0.0050	1	EPA 200.7	21-Mar-11	23-Mar-11	TBC	1104677	X
7440-38-2	Arsenic	0.0111		mg/l	0.0040	1	"	"	"	"	"	X
7440-43-9	Cadmium	BRL		mg/l	0.0025	1	"	"	23-Mar-11	"	"	X
7440-47-3	Chromium	BRL		mg/l	0.0050	1	"	"	23-Mar-11	"	"	X
7440-50-8	Copper	BRL		mg/l	0.0050	1	"	"	"	"	"	X
7439-89-6	Iron	18.5		mg/l	0.0150	1	"	"	"	"	"	X
7439-97-6	Mercury	BRL		mg/l	0.00020	1	EPA 245.1/7470A	"	22-Mar-11	ARF	1104678	X
7440-02-0	Nickel	0.0138		mg/l	0.0050	1	EPA 200.7	"	23-Mar-11	TBC	1104677	X
7439-92-1	Lead	BRL		mg/l	0.0075	1	"	"	"	"	"	X
7440-36-0	Antimony	BRL		mg/l	0.0060	1	"	"	"	"	"	X
7782-49-2	Selenium	BRL		mg/l	0.0150	1	"	"	23-Mar-11	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-3 SB25832-02	212738	Ground Water	18-Mar-11 14:00	18-Mar-11

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Total Metals by EPA 200 Series Methods												
7440-66-6	Zinc	0.0174		mg/l	0.0050	1	EPA 200.7	21-Mar-11	23-Mar-11	TBC	1104677	X
General Chemistry Parameters												
16887-00-6	Chloride	14,000		mg/l	1000	1000	EPA 300.0	28-Mar-11	28-Mar-11	JAK	1105345	X
18540-29-9	Hexavalent Chromium	BRL	R01	mg/l	0.025	1	SW846 7196A/SM3500CrD	18-Mar-11 17:15	18-Mar-11 17:16	GMA	1104804	
57-12-5	Cyanide (total)	0.0225		mg/l	0.00500	1	EPA 335.4 / SW846 9012A	23-Mar-11	24-Mar-11	eemon	1105012	X
7782-50-5	Total Residual Chlorine	BRL	R01,CIHT	mg/l	0.100	1	Hach 8167	18-Mar-11 18:15	18-Mar-11 18:15	GMA	1104810	X
	Total Suspended Solids	90.0		mg/l	10.0	1	SM2540D	22-Mar-11	22-Mar-11	SJL	1104978	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Trip	212738	Deionized Water	18-Mar-11 00:00	18-Mar-11
SB25832-03				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
VPH Aliphatic/Aromatic Carbon Ranges Prepared by method VPH - EPA 5030B												
	C5-C8 Aliphatic Hydrocarbons	BRL		mg/l	0.0750	1	+MADEP VPH 5/2004 Rev. 1.1	21-Mar-11	21-Mar-11	MP	1104829	
	C9-C12 Aliphatic Hydrocarbons	BRL		mg/l	0.0250	1	"	"	"	"	"	
	C9-C10 Aromatic Hydrocarbons	BRL		mg/l	0.0250	1	"	"	"	"	"	
	Unadjusted C5-C8 Aliphatic Hydrocarbons	BRL		mg/l	0.0750	1	"	"	"	"	"	
	Unadjusted C9-C12 Aliphatic Hydrocarbons	BRL		mg/l	0.0250	1	"	"	"	"	"	
VPH Target Analytes Prepared by method VPH - EPA 5030B												
71-43-2	Benzene	BRL		µg/l	5.0	1	"	"	"	"	"	
100-41-4	Ethylbenzene	BRL		µg/l	5.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	5.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	5.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	5.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	10.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	5.0	1	"	"	"	"	"	
Surrogate recoveries:												
615-59-8	*2,5-Dibromotoluene (FID)*	*100*			*70-130 %*		"	"	"	"	"	
615-59-8	*2,5-Dibromotoluene (PID)*	*97*			*70-130 %*		"	"	"	"	"	

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104829 - VPH - EPA 5030B										
Blank (1104829-BLK1)						Prepared & Analyzed: 21-Mar-11				
C5-C8 Aliphatic Hydrocarbons	BRL		mg/l	0.0750						
C9-C12 Aliphatic Hydrocarbons	BRL		mg/l	0.0250						
C9-C10 Aromatic Hydrocarbons	BRL		mg/l	0.0250						
Unadjusted C5-C8 Aliphatic Hydrocarbons	BRL		mg/l	0.0750						
Unadjusted C9-C12 Aliphatic Hydrocarbons	BRL		mg/l	0.0250						
Benzene	BRL		µg/l	5.0						
Ethylbenzene	BRL		µg/l	5.0						
Methyl tert-butyl ether	BRL		µg/l	5.0						
Naphthalene	BRL		µg/l	5.0						
Toluene	BRL		µg/l	5.0						
m,p-Xylene	BRL		µg/l	10.0						
o-Xylene	BRL		µg/l	5.0						
2-Methylpentane	BRL		µg/l	5.0						
n-Nonane	BRL		µg/l	10.0						
n-Pentane	BRL		µg/l	10.0						
1,2,4-Trimethylbenzene	BRL		µg/l	5.0						
2,2,4-Trimethylpentane	BRL		µg/l	5.0						
n-Butylcyclohexane	BRL		µg/l	5.0						
n-Decane	BRL		µg/l	5.0						
Surrogate: 2,5-Dibromotoluene (FID)	*50.5*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: 2,5-Dibromotoluene (PID)	*49.1*		µg/l		*50.0*		*98*	*70-130*		
LCS (1104829-BS1)						Prepared & Analyzed: 21-Mar-11				
C5-C8 Aliphatic Hydrocarbons	54.4		mg/l		60.0		91	70-130		
C9-C12 Aliphatic Hydrocarbons	64.4		mg/l		60.0		107	70-130		
C9-C10 Aromatic Hydrocarbons	21.3		mg/l		20.0		107	70-130		
Unadjusted C5-C8 Aliphatic Hydrocarbons	205		mg/l		200		102	70-130		
Unadjusted C9-C12 Aliphatic Hydrocarbons	85.8		mg/l		80.0		107	70-130		
Benzene	21.6		µg/l		20.0		108	70-130		
Ethylbenzene	21.9		µg/l		20.0		110	70-130		
Methyl tert-butyl ether	17.6		µg/l		20.0		88	70-130		
Naphthalene	22.3		µg/l		20.0		112	70-130		
Toluene	22.2		µg/l		20.0		111	70-130		
m,p-Xylene	44.3		µg/l		40.0		111	70-130		
o-Xylene	22.5		µg/l		20.0		112	70-130		
2-Methylpentane	22.2		µg/l		20.0		111	70-130		
n-Nonane	23.4		µg/l		20.0		117	70-130		
n-Pentane	21.3		µg/l		20.0		106	70-130		
1,2,4-Trimethylbenzene	22.0		µg/l		20.0		110	70-130		
2,2,4-Trimethylpentane	22.3		µg/l		20.0		112	70-130		
n-Butylcyclohexane	22.5		µg/l		20.0		113	70-130		
n-Decane	23.2		µg/l		20.0		116	70-130		
Surrogate: 2,5-Dibromotoluene (FID)	*60.3*		µg/l		*50.0*		*121*	*70-130*		
Surrogate: 2,5-Dibromotoluene (PID)	*57.6*		µg/l		*50.0*		*115*	*70-130*		
LCS Dup (1104829-BSD1)						Prepared & Analyzed: 21-Mar-11				
C5-C8 Aliphatic Hydrocarbons	65.0		mg/l		60.0		108	70-130	18	25
C9-C12 Aliphatic Hydrocarbons	63.7		mg/l		60.0		106	70-130	1	25
C9-C10 Aromatic Hydrocarbons	20.1		mg/l		20.0		100	70-130	6	25
Unadjusted C5-C8 Aliphatic Hydrocarbons	206		mg/l		200		103	70-130	0.9	25
Unadjusted C9-C12 Aliphatic Hydrocarbons	83.8		mg/l		80.0		105	70-130	2	25

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104829 - VPH - EPA 5030B										
LCS Dup (1104829-BSD1)					Prepared & Analyzed: 21-Mar-11					
Benzene	20.4		µg/l		20.0		102	70-130	6	25
Ethylbenzene	20.6		µg/l		20.0		103	70-130	6	25
Methyl tert-butyl ether	16.7		µg/l		20.0		84	70-130	5	25
Naphthalene	20.0		µg/l		20.0		100	70-130	11	25
Toluene	20.9		µg/l		20.0		104	70-130	6	25
m,p-Xylene	41.6		µg/l		40.0		104	70-130	6	25
o-Xylene	21.1		µg/l		20.0		106	70-130	6	25
2-Methylpentane	20.3		µg/l		20.0		101	70-130	9	25
n-Nonane	21.5		µg/l		20.0		108	70-130	9	25
n-Pentane	20.5		µg/l		20.0		102	70-130	4	25
1,2,4-Trimethylbenzene	20.5		µg/l		20.0		102	70-130	7	25
2,2,4-Trimethylpentane	20.8		µg/l		20.0		104	70-130	7	25
n-Butylcyclohexane	20.7		µg/l		20.0		104	70-130	8	25
n-Decane	20.8		µg/l		20.0		104	70-130	11	25
Surrogate: 2,5-Dibromotoluene (FID)	*53.7*		µg/l		*50.0*		*107*	*70-130*		
Surrogate: 2,5-Dibromotoluene (PID)	*51.4*		µg/l		*50.0*		*103*	*70-130*		
Batch 1104853 - SW846 5030 Water MS										
Blank (1104853-BLK1)					Prepared & Analyzed: 21-Mar-11					
1,1,2-Trichlorotrifluoroethane (Freon 113)	BRL		µg/l	1.0						
Acetone	BRL		µg/l	10.0						
Acrylonitrile	BRL		µg/l	0.5						
Benzene	BRL		µg/l	1.0						
Bromobenzene	BRL		µg/l	1.0						
Bromochloromethane	BRL		µg/l	1.0						
Bromodichloromethane	BRL		µg/l	0.5						
Bromoform	BRL		µg/l	1.0						
Bromomethane	BRL		µg/l	2.0						
2-Butanone (MEK)	BRL		µg/l	10.0						
n-Butylbenzene	BRL		µg/l	1.0						
sec-Butylbenzene	BRL		µg/l	1.0						
tert-Butylbenzene	BRL		µg/l	1.0						
Carbon disulfide	BRL		µg/l	2.0						
Carbon tetrachloride	BRL		µg/l	1.0						
Chlorobenzene	BRL		µg/l	1.0						
Chloroethane	BRL		µg/l	2.0						
Chloroform	BRL		µg/l	1.0						
Chloromethane	BRL		µg/l	2.0						
2-Chlorotoluene	BRL		µg/l	1.0						
4-Chlorotoluene	BRL		µg/l	1.0						
1,2-Dibromo-3-chloropropane	BRL		µg/l	2.0						
Dibromochloromethane	BRL		µg/l	0.5						
1,2-Dibromoethane (EDB)	BRL		µg/l	0.5						
Dibromomethane	BRL		µg/l	1.0						
1,2-Dichlorobenzene	BRL		µg/l	1.0						
1,3-Dichlorobenzene	BRL		µg/l	1.0						
1,4-Dichlorobenzene	BRL		µg/l	1.0						
Dichlorodifluoromethane (Freon12)	BRL		µg/l	2.0						
1,1-Dichloroethane	BRL		µg/l	1.0						
1,2-Dichloroethane	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
cis-1,2-Dichloroethene	BRL		µg/l	1.0						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104853 - SW846 5030 Water MS										
Blank (1104853-BLK1)					Prepared & Analyzed: 21-Mar-11					
trans-1,2-Dichloroethene	BRL		µg/l	1.0						
1,2-Dichloropropane	BRL		µg/l	1.0						
1,3-Dichloropropane	BRL		µg/l	1.0						
2,2-Dichloropropane	BRL		µg/l	1.0						
1,1-Dichloropropene	BRL		µg/l	1.0						
cis-1,3-Dichloropropene	BRL		µg/l	0.5						
trans-1,3-Dichloropropene	BRL		µg/l	0.5						
Ethylbenzene	BRL		µg/l	1.0						
Hexachlorobutadiene	BRL		µg/l	0.5						
2-Hexanone (MBK)	BRL		µg/l	10.0						
Isopropylbenzene	BRL		µg/l	1.0						
4-Isopropyltoluene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
4-Methyl-2-pentanone (MIBK)	BRL		µg/l	10.0						
Methylene chloride	BRL		µg/l	2.0						
Naphthalene	BRL		µg/l	1.0						
n-Propylbenzene	BRL		µg/l	1.0						
Styrene	BRL		µg/l	1.0						
1,1,1,2-Tetrachloroethane	BRL		µg/l	1.0						
1,1,2,2-Tetrachloroethane	BRL		µg/l	0.5						
Tetrachloroethene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
1,2,3-Trichlorobenzene	BRL		µg/l	1.0						
1,2,4-Trichlorobenzene	BRL		µg/l	1.0						
1,3,5-Trichlorobenzene	BRL		µg/l	1.0						
1,1,1-Trichloroethane	BRL		µg/l	1.0						
1,1,2-Trichloroethane	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
Trichlorofluoromethane (Freon 11)	BRL		µg/l	1.0						
1,2,3-Trichloropropane	BRL		µg/l	1.0						
1,2,4-Trimethylbenzene	BRL		µg/l	1.0						
1,3,5-Trimethylbenzene	BRL		µg/l	1.0						
Vinyl chloride	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Tetrahydrofuran	BRL		µg/l	2.0						
Ethyl ether	BRL		µg/l	1.0						
Tert-amyl methyl ether	BRL		µg/l	1.0						
Ethyl tert-butyl ether	BRL		µg/l	1.0						
Di-isopropyl ether	BRL		µg/l	1.0						
Tert-Butanol / butyl alcohol	BRL		µg/l	10.0						
1,4-Dioxane	BRL		µg/l	20.0						
trans-1,4-Dichloro-2-butene	BRL		µg/l	5.0						
Ethanol	BRL		µg/l	400						
Surrogate: 4-Bromofluorobenzene	*46.6*		µg/l		*50.0*		*93*	*70-130*		
Surrogate: Toluene-d8	*49.1*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*52.3*		µg/l		*50.0*		*105*	*70-130*		
Surrogate: Dibromofluoromethane	*50.1*		µg/l		*50.0*		*100*	*70-130*		
LCS (1104853-BS1)					Prepared & Analyzed: 21-Mar-11					
1,1,2-Trichlorotrifluoroethane (Freon 113)	19.7		µg/l		20.0		99	70-130		
Acetone	25.2		µg/l		20.0		126	70-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104853 - SW846 5030 Water MS										
LCS (1104853-BS1)					Prepared & Analyzed: 21-Mar-11					
Acrylonitrile	22.6		µg/l		20.0		113	70-130		
Benzene	18.7		µg/l		20.0		93	70-130		
Bromobenzene	20.7		µg/l		20.0		104	70-130		
Bromochloromethane	20.1		µg/l		20.0		100	70-130		
Bromodichloromethane	20.2		µg/l		20.0		101	70-130		
Bromoform	22.7		µg/l		20.0		113	70-130		
Bromomethane	20.6		µg/l		20.0		103	70-130		
2-Butanone (MEK)	21.2		µg/l		20.0		106	70-130		
n-Butylbenzene	20.9		µg/l		20.0		105	70-130		
sec-Butylbenzene	22.8		µg/l		20.0		114	70-130		
tert-Butylbenzene	23.4		µg/l		20.0		117	70-130		
Carbon disulfide	22.2		µg/l		20.0		111	70-130		
Carbon tetrachloride	20.0		µg/l		20.0		100	70-130		
Chlorobenzene	19.8		µg/l		20.0		99	70-130		
Chloroethane	19.7		µg/l		20.0		99	70-130		
Chloroform	18.9		µg/l		20.0		94	70-130		
Chloromethane	22.2		µg/l		20.0		111	70-130		
2-Chlorotoluene	22.2		µg/l		20.0		111	70-130		
4-Chlorotoluene	21.5		µg/l		20.0		107	70-130		
1,2-Dibromo-3-chloropropane	21.1		µg/l		20.0		106	70-130		
Dibromochloromethane	21.3		µg/l		20.0		106	70-130		
1,2-Dibromoethane (EDB)	19.8		µg/l		20.0		99	70-130		
Dibromomethane	18.2		µg/l		20.0		91	70-130		
1,2-Dichlorobenzene	19.9		µg/l		20.0		99	70-130		
1,3-Dichlorobenzene	20.8		µg/l		20.0		104	70-130		
1,4-Dichlorobenzene	18.3		µg/l		20.0		92	70-130		
Dichlorodifluoromethane (Freon12)	17.8		µg/l		20.0		89	70-130		
1,1-Dichloroethane	27.0	QM9	µg/l		20.0		135	70-130		
1,2-Dichloroethane	18.4		µg/l		20.0		92	70-130		
1,1-Dichloroethene	19.6		µg/l		20.0		98	70-130		
cis-1,2-Dichloroethene	22.7		µg/l		20.0		114	70-130		
trans-1,2-Dichloroethene	25.9		µg/l		20.0		130	70-130		
1,2-Dichloropropane	17.9		µg/l		20.0		89	70-130		
1,3-Dichloropropane	18.5		µg/l		20.0		92	70-130		
2,2-Dichloropropane	17.9		µg/l		20.0		89	70-130		
1,1-Dichloropropene	18.3		µg/l		20.0		91	70-130		
cis-1,3-Dichloropropene	20.1		µg/l		20.0		101	70-130		
trans-1,3-Dichloropropene	20.3		µg/l		20.0		102	70-130		
Ethylbenzene	20.9		µg/l		20.0		105	70-130		
Hexachlorobutadiene	20.2		µg/l		20.0		101	70-130		
2-Hexanone (MBK)	20.7		µg/l		20.0		104	70-130		
Isopropylbenzene	21.4		µg/l		20.0		107	70-130		
4-Isopropyltoluene	20.3		µg/l		20.0		101	70-130		
Methyl tert-butyl ether	22.2		µg/l		20.0		111	70-130		
4-Methyl-2-pentanone (MIBK)	20.8		µg/l		20.0		104	70-130		
Methylene chloride	23.9		µg/l		20.0		120	70-130		
Naphthalene	26.5	QM9	µg/l		20.0		132	70-130		
n-Propylbenzene	21.8		µg/l		20.0		109	70-130		
Styrene	22.5		µg/l		20.0		112	70-130		
1,1,1,2-Tetrachloroethane	21.2		µg/l		20.0		106	70-130		
1,1,2,2-Tetrachloroethane	20.8		µg/l		20.0		104	70-130		
Tetrachloroethene	18.9		µg/l		20.0		94	70-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104853 - SW846 5030 Water MS										
LCS (1104853-BS1)					Prepared & Analyzed: 21-Mar-11					
Toluene	18.5		µg/l		20.0		92	70-130		
1,2,3-Trichlorobenzene	22.5		µg/l		20.0		112	70-130		
1,2,4-Trichlorobenzene	22.2		µg/l		20.0		111	70-130		
1,3,5-Trichlorobenzene	20.0		µg/l		20.0		100	70-130		
1,1,1-Trichloroethane	19.7		µg/l		20.0		99	70-130		
1,1,2-Trichloroethane	19.5		µg/l		20.0		97	70-130		
Trichloroethene	18.4		µg/l		20.0		92	70-130		
Trichlorofluoromethane (Freon 11)	19.6		µg/l		20.0		98	70-130		
1,2,3-Trichloropropane	20.5		µg/l		20.0		102	70-130		
1,2,4-Trimethylbenzene	23.4		µg/l		20.0		117	70-130		
1,3,5-Trimethylbenzene	22.6		µg/l		20.0		113	70-130		
Vinyl chloride	22.7		µg/l		20.0		114	70-130		
m,p-Xylene	43.9		µg/l		40.0		110	70-130		
o-Xylene	22.4		µg/l		20.0		112	70-130		
Tetrahydrofuran	20.8		µg/l		20.0		104	70-130		
Ethyl ether	20.7		µg/l		20.0		104	70-130		
Tert-amyl methyl ether	21.6		µg/l		20.0		108	70-130		
Ethyl tert-butyl ether	19.6		µg/l		20.0		98	70-130		
Di-isopropyl ether	24.5		µg/l		20.0		122	70-130		
Tert-Butanol / butyl alcohol	202		µg/l		200		101	70-130		
1,4-Dioxane	221		µg/l		200		111	70-130		
trans-1,4-Dichloro-2-butene	16.3		µg/l		20.0		81	70-130		
Ethanol	463		µg/l		400		116	70-130		
Surrogate: 4-Bromofluorobenzene	*52.4*		µg/l		*50.0*		*105*	*70-130*		
Surrogate: Toluene-d8	*49.3*		µg/l		*50.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*48.6*		µg/l		*50.0*		*97*	*70-130*		
Surrogate: Dibromofluoromethane	*48.4*		µg/l		*50.0*		*97*	*70-130*		
LCS Dup (1104853-BSD1)					Prepared & Analyzed: 21-Mar-11					
1,1,2-Trichlorotrifluoroethane (Freon 113)	17.9		µg/l		20.0		90	70-130	10	25
Acetone	21.9		µg/l		20.0		110	70-130	14	50
Acrylonitrile	22.4		µg/l		20.0		112	70-130	1	25
Benzene	18.6		µg/l		20.0		93	70-130	0.6	25
Bromobenzene	18.6		µg/l		20.0		93	70-130	11	25
Bromochloromethane	18.8		µg/l		20.0		94	70-130	7	25
Bromodichloromethane	19.6		µg/l		20.0		98	70-130	3	25
Bromoform	21.8		µg/l		20.0		109	70-130	4	25
Bromomethane	19.6		µg/l		20.0		98	70-130	5	50
2-Butanone (MEK)	17.6		µg/l		20.0		88	70-130	18	50
n-Butylbenzene	20.4		µg/l		20.0		102	70-130	2	25
sec-Butylbenzene	21.2		µg/l		20.0		106	70-130	7	25
tert-Butylbenzene	21.1		µg/l		20.0		106	70-130	11	25
Carbon disulfide	20.7		µg/l		20.0		103	70-130	7	25
Carbon tetrachloride	19.2		µg/l		20.0		96	70-130	5	25
Chlorobenzene	18.7		µg/l		20.0		94	70-130	6	25
Chloroethane	17.8		µg/l		20.0		89	70-130	10	50
Chloroform	18.6		µg/l		20.0		93	70-130	1	25
Chloromethane	23.4		µg/l		20.0		117	70-130	5	25
2-Chlorotoluene	21.6		µg/l		20.0		108	70-130	3	25
4-Chlorotoluene	20.6		µg/l		20.0		103	70-130	4	25
1,2-Dibromo-3-chloropropane	22.2		µg/l		20.0		111	70-130	5	25
Dibromochloromethane	20.6		µg/l		20.0		103	70-130	3	50

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104853 - SW846 5030 Water MS										
LCS Dup (1104853-BSD1)					Prepared & Analyzed: 21-Mar-11					
1,2-Dibromoethane (EDB)	19.8		µg/l		20.0		99	70-130	0.3	25
Dibromomethane	18.1		µg/l		20.0		90	70-130	0.4	25
1,2-Dichlorobenzene	19.2		µg/l		20.0		96	70-130	3	25
1,3-Dichlorobenzene	19.4		µg/l		20.0		97	70-130	7	25
1,4-Dichlorobenzene	18.0		µg/l		20.0		90	70-130	2	25
Dichlorodifluoromethane (Freon12)	16.9		µg/l		20.0		84	70-130	5	50
1,1-Dichloroethane	23.4		µg/l		20.0		117	70-130	14	25
1,2-Dichloroethane	19.0		µg/l		20.0		95	70-130	3	25
1,1-Dichloroethene	17.3		µg/l		20.0		86	70-130	13	25
cis-1,2-Dichloroethene	19.3		µg/l		20.0		97	70-130	16	25
trans-1,2-Dichloroethene	24.2		µg/l		20.0		121	70-130	7	25
1,2-Dichloropropane	18.3		µg/l		20.0		91	70-130	2	25
1,3-Dichloropropane	19.0		µg/l		20.0		95	70-130	3	25
2,2-Dichloropropane	17.0		µg/l		20.0		85	70-130	5	25
1,1-Dichloropropene	18.0		µg/l		20.0		90	70-130	2	25
cis-1,3-Dichloropropene	20.0		µg/l		20.0		100	70-130	0.7	25
trans-1,3-Dichloropropene	20.3		µg/l		20.0		102	70-130	0.05	25
Ethylbenzene	19.8		µg/l		20.0		99	70-130	6	25
Hexachlorobutadiene	17.6		µg/l		20.0		88	70-130	14	50
2-Hexanone (MBK)	21.9		µg/l		20.0		109	70-130	5	25
Isopropylbenzene	19.7		µg/l		20.0		98	70-130	8	25
4-Isopropyltoluene	19.5		µg/l		20.0		98	70-130	4	25
Methyl tert-butyl ether	21.7		µg/l		20.0		108	70-130	2	25
4-Methyl-2-pentanone (MIBK)	22.4		µg/l		20.0		112	70-130	8	50
Methylene chloride	22.0		µg/l		20.0		110	70-130	8	25
Naphthalene	25.2		µg/l		20.0		126	70-130	5	25
n-Propylbenzene	20.9		µg/l		20.0		104	70-130	5	25
Styrene	21.3		µg/l		20.0		107	70-130	5	25
1,1,1,2-Tetrachloroethane	20.3		µg/l		20.0		102	70-130	4	25
1,1,2,2-Tetrachloroethane	21.0		µg/l		20.0		105	70-130	1	25
Tetrachloroethene	17.2		µg/l		20.0		86	70-130	9	25
Toluene	17.6		µg/l		20.0		88	70-130	5	25
1,2,3-Trichlorobenzene	21.0		µg/l		20.0		105	70-130	7	25
1,2,4-Trichlorobenzene	21.1		µg/l		20.0		106	70-130	5	25
1,3,5-Trichlorobenzene	19.5		µg/l		20.0		98	70-130	2	25
1,1,1-Trichloroethane	18.2		µg/l		20.0		91	70-130	8	25
1,1,2-Trichloroethane	19.4		µg/l		20.0		97	70-130	0.4	25
Trichloroethene	18.0		µg/l		20.0		90	70-130	2	25
Trichlorofluoromethane (Freon 11)	17.6		µg/l		20.0		88	70-130	11	50
1,2,3-Trichloropropane	20.8		µg/l		20.0		104	70-130	1	25
1,2,4-Trimethylbenzene	21.6		µg/l		20.0		108	70-130	8	25
1,3,5-Trimethylbenzene	21.0		µg/l		20.0		105	70-130	7	25
Vinyl chloride	22.5		µg/l		20.0		113	70-130	1	25
m,p-Xylene	41.1		µg/l		40.0		103	70-130	7	25
o-Xylene	21.3		µg/l		20.0		107	70-130	5	25
Tetrahydrofuran	22.3		µg/l		20.0		111	70-130	7	25
Ethyl ether	19.3		µg/l		20.0		97	70-130	7	50
Tert-amyl methyl ether	22.3		µg/l		20.0		112	70-130	3	25
Ethyl tert-butyl ether	20.6		µg/l		20.0		103	70-130	5	25
Di-isopropyl ether	20.6		µg/l		20.0		103	70-130	17	25
Tert-Butanol / butyl alcohol	204		µg/l		200		102	70-130	0.9	25
1,4-Dioxane	212		µg/l		200		106	70-130	5	25

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104853 - SW846 5030 Water MS										
LCS Dup (1104853-BSD1)					Prepared & Analyzed: 21-Mar-11					
trans-1,4-Dichloro-2-butene	16.1		µg/l		20.0		80	70-130	1	25
Ethanol	437		µg/l		400		109	70-130	6	30
Surrogate: 4-Bromofluorobenzene	*51.7*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: Toluene-d8	*49.6*		µg/l		*50.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*50.4*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: Dibromofluoromethane	*49.3*		µg/l		*50.0*		*99*	*70-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104877 - General Preparation SVOC										
Blank (1104877-BLK1)						Prepared & Analyzed: 21-Mar-11				
1,2-Dibromoethane (EDB)	BRL		µg/l	0.0100						
LCS (1104877-BS1)						Prepared & Analyzed: 21-Mar-11				
1,2-Dibromoethane (EDB)	0.226		µg/l	0.0100	0.200		113	50-150		
LCS Dup (1104877-BSD1)						Prepared & Analyzed: 21-Mar-11				
1,2-Dibromoethane (EDB)	0.223		µg/l	0.0100	0.200		112	50-150	1	50

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104837 - SW846 3510C										
Blank (1104837-BLK1)					Prepared & Analyzed: 21-Mar-11					
Acenaphthene	BRL		µg/l	5.00						
Acenaphthylene	BRL		µg/l	5.00						
Aniline	BRL		µg/l	5.00						
Anthracene	BRL		µg/l	5.00						
Azobenzene/Diphenyldiazine	BRL		µg/l	5.00						
Benzidine	BRL		µg/l	5.00						
Benzo (a) anthracene	BRL		µg/l	5.00						
Benzo (a) pyrene	BRL		µg/l	5.00						
Benzo (b) fluoranthene	BRL		µg/l	5.00						
Benzo (g,h,i) perylene	BRL		µg/l	5.00						
Benzo (k) fluoranthene	BRL		µg/l	5.00						
Benzoic acid	BRL		µg/l	5.00						
Benzyl alcohol	BRL		µg/l	5.00						
Bis(2-chloroethoxy)methane	BRL		µg/l	5.00						
Bis(2-chloroethyl)ether	BRL		µg/l	5.00						
Bis(2-chloroisopropyl)ether	BRL		µg/l	5.00						
Bis(2-ethylhexyl)phthalate	BRL		µg/l	5.00						
4-Bromophenyl phenyl ether	BRL		µg/l	5.00						
Butyl benzyl phthalate	BRL		µg/l	5.00						
Carbazole	BRL		µg/l	5.00						
4-Chloro-3-methylphenol	BRL		µg/l	5.00						
4-Chloroaniline	BRL		µg/l	5.00						
2-Chloronaphthalene	BRL		µg/l	5.00						
2-Chlorophenol	BRL		µg/l	5.00						
4-Chlorophenyl phenyl ether	BRL		µg/l	5.00						
Chrysene	BRL		µg/l	5.00						
Dibenzo (a,h) anthracene	BRL		µg/l	5.00						
Dibenzofuran	BRL		µg/l	5.00						
1,2-Dichlorobenzene	BRL		µg/l	5.00						
1,3-Dichlorobenzene	BRL		µg/l	5.00						
1,4-Dichlorobenzene	BRL		µg/l	5.00						
3,3´-Dichlorobenzidine	BRL		µg/l	5.00						
2,4-Dichlorophenol	BRL		µg/l	5.00						
Diethyl phthalate	BRL		µg/l	5.00						
Dimethyl phthalate	BRL		µg/l	5.00						
2,4-Dimethylphenol	BRL		µg/l	5.00						
Di-n-butyl phthalate	BRL		µg/l	5.00						
4,6-Dinitro-2-methylphenol	BRL		µg/l	5.00						
2,4-Dinitrophenol	BRL		µg/l	5.00						
2,4-Dinitrotoluene	BRL		µg/l	5.00						
2,6-Dinitrotoluene	BRL		µg/l	5.00						
Di-n-octyl phthalate	BRL		µg/l	5.00						
Fluoranthene	BRL		µg/l	5.00						
Fluorene	BRL		µg/l	5.00						
Hexachlorobenzene	BRL		µg/l	5.00						
Hexachlorobutadiene	BRL		µg/l	5.00						
Hexachlorocyclopentadiene	BRL		µg/l	5.00						
Hexachloroethane	BRL		µg/l	5.00						
Indeno (1,2,3-cd) pyrene	BRL		µg/l	5.00						
Isophorone	BRL		µg/l	5.00						
2-Methylnaphthalene	BRL		µg/l	5.00						
2-Methylphenol	BRL		µg/l	5.00						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104837 - SW846 3510C										
Blank (1104837-BLK1)					Prepared & Analyzed: 21-Mar-11					
3 & 4-Methylphenol	BRL		µg/l	10.0						
Naphthalene	BRL		µg/l	5.00						
2-Nitroaniline	BRL		µg/l	5.00						
3-Nitroaniline	BRL		µg/l	5.00						
4-Nitroaniline	BRL		µg/l	5.00						
Nitrobenzene	BRL		µg/l	5.00						
2-Nitrophenol	BRL		µg/l	5.00						
4-Nitrophenol	BRL		µg/l	5.00						
N-Nitrosodimethylamine	BRL		µg/l	5.00						
N-Nitrosodi-n-propylamine	BRL		µg/l	5.00						
N-Nitrosodiphenylamine	BRL		µg/l	5.00						
Pentachlorophenol	BRL		µg/l	5.00						
Phenanthrene	BRL		µg/l	5.00						
Phenol	BRL		µg/l	5.00						
Pyrene	BRL		µg/l	5.00						
Pyridine	BRL		µg/l	5.00						
1,2,4-Trichlorobenzene	BRL		µg/l	5.00						
2,4,5-Trichlorophenol	BRL		µg/l	5.00						
2,4,6-Trichlorophenol	BRL		µg/l	5.00						
Surrogate: 2-Fluorobiphenyl	*29.8*		µg/l		*50.0*		*60*	*30-130*		
Surrogate: 2-Fluorophenol	*23.2*		µg/l		*50.0*		*46*	*15-110*		
Surrogate: Nitrobenzene-d5	*32.6*		µg/l		*50.0*		*65*	*30-130*		
Surrogate: Phenol-d5	*15.5*		µg/l		*50.0*		*31*	*15-110*		
Surrogate: Terphenyl-dl4	*29.2*		µg/l		*50.0*		*58*	*30-130*		
Surrogate: 2,4,6-Tribromophenol	*31.2*		µg/l		*50.0*		*62*	*15-110*		
LCS (1104837-BS1)					Prepared & Analyzed: 21-Mar-11					
Acenaphthene	28.6		µg/l	5.00	50.0		57	40-140		
Acenaphthylene	28.0		µg/l	5.00	50.0		56	40-140		
Aniline	34.8		µg/l	5.00	50.0		70	40-140		
Anthracene	30.1		µg/l	5.00	50.0		60	40-140		
Azobenzene/Diphenyldiazine	32.7		µg/l	5.00	50.0		65	40-140		
Benzidine	12.2		µg/l	5.00	50.0		24	0-140		
Benzo (a) anthracene	30.3		µg/l	5.00	50.0		61	40-140		
Benzo (a) pyrene	30.4		µg/l	5.00	50.0		61	40-140		
Benzo (b) fluoranthene	29.2		µg/l	5.00	50.0		58	40-140		
Benzo (g,h,i) perylene	28.1		µg/l	5.00	50.0		56	40-140		
Benzo (k) fluoranthene	33.3		µg/l	5.00	50.0		67	40-140		
Benzoic acid	14.2		µg/l	5.00	50.0		28	17.4-130		
Benzyl alcohol	27.2		µg/l	5.00	50.0		54	40-140		
Bis(2-chloroethoxy)methane	24.1		µg/l	5.00	50.0		48	40-140		
Bis(2-chloroethyl)ether	25.5		µg/l	5.00	50.0		51	40-140		
Bis(2-chloroisopropyl)ether	33.4		µg/l	5.00	50.0		67	40-140		
Bis(2-ethylhexyl)phthalate	33.4		µg/l	5.00	50.0		67	40-140		
4-Bromophenyl phenyl ether	26.9		µg/l	5.00	50.0		54	40-140		
Butyl benzyl phthalate	29.7		µg/l	5.00	50.0		59	40-140		
Carbazole	31.1		µg/l	5.00	50.0		62	40-130		
4-Chloro-3-methylphenol	29.8		µg/l	5.00	50.0		60	30-130		
4-Chloroaniline	34.0		µg/l	5.00	50.0		68	40-140		
2-Chloronaphthalene	27.4		µg/l	5.00	50.0		55	40-140		
2-Chlorophenol	26.8		µg/l	5.00	50.0		54	30-130		
4-Chlorophenyl phenyl ether	28.3		µg/l	5.00	50.0		57	40-140		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104837 - SW846 3510C										
LCS (1104837-BS1)					Prepared & Analyzed: 21-Mar-11					
Chrysene	29.9		µg/l	5.00	50.0		60	40-140		
Dibenzo (a,h) anthracene	27.8		µg/l	5.00	50.0		56	40-140		
Dibenzofuran	28.0		µg/l	5.00	50.0		56	40-140		
1,2-Dichlorobenzene	26.6		µg/l	5.00	50.0		53	40-140		
1,3-Dichlorobenzene	25.8		µg/l	5.00	50.0		52	40-140		
1,4-Dichlorobenzene	26.0		µg/l	5.00	50.0		52	40-140		
3,3´-Dichlorobenzidine	26.9		µg/l	5.00	50.0		54	40-140		
2,4-Dichlorophenol	26.5		µg/l	5.00	50.0		53	30-130		
Diethyl phthalate	28.9		µg/l	5.00	50.0		58	40-140		
Dimethyl phthalate	27.0		µg/l	5.00	50.0		54	40-140		
2,4-Dimethylphenol	25.6		µg/l	5.00	50.0		51	30-130		
Di-n-butyl phthalate	30.5		µg/l	5.00	50.0		61	40-140		
4,6-Dinitro-2-methylphenol	7.14	QC2	µg/l	5.00	50.0		14	30-130		
2,4-Dinitrophenol	7.89	QC2	µg/l	5.00	50.0		16	30-130		
2,4-Dinitrotoluene	31.5		µg/l	5.00	50.0		63	40-140		
2,6-Dinitrotoluene	31.9		µg/l	5.00	50.0		64	40-140		
Di-n-octyl phthalate	35.4		µg/l	5.00	50.0		71	40-140		
Fluoranthene	29.6		µg/l	5.00	50.0		59	40-140		
Fluorene	28.0		µg/l	5.00	50.0		56	40-140		
Hexachlorobenzene	28.3		µg/l	5.00	50.0		57	40-140		
Hexachlorobutadiene	21.7		µg/l	5.00	50.0		43	40-140		
Hexachlorocyclopentadiene	12.6	QC2	µg/l	5.00	50.0		25	40-140		
Hexachloroethane	25.7		µg/l	5.00	50.0		51	40-140		
Indeno (1,2,3-cd) pyrene	26.7		µg/l	5.00	50.0		53	40-140		
Isophorone	28.5		µg/l	5.00	50.0		57	40-140		
2-Methylnaphthalene	28.2		µg/l	5.00	50.0		56	40-140		
2-Methylphenol	27.9		µg/l	5.00	50.0		56	40-140		
3 & 4-Methylphenol	26.8		µg/l	10.0	50.0		54	40-140		
Naphthalene	26.1		µg/l	5.00	50.0		52	40-140		
2-Nitroaniline	32.6		µg/l	5.00	50.0		65	40-140		
3-Nitroaniline	35.7		µg/l	5.00	50.0		71	40-140		
4-Nitroaniline	35.1		µg/l	5.00	50.0		70	40-140		
Nitrobenzene	29.0		µg/l	5.00	50.0		58	40-140		
2-Nitrophenol	24.3		µg/l	5.00	50.0		49	30-130		
4-Nitrophenol	37.2		µg/l	5.00	50.0		74	30-130		
N-Nitrosodimethylamine	23.7		µg/l	5.00	50.0		47	40-140		
N-Nitrosodi-n-propylamine	30.2		µg/l	5.00	50.0		60	40-140		
N-Nitrosodiphenylamine	32.1		µg/l	5.00	50.0		64	40-140		
Pentachlorophenol	23.3		µg/l	5.00	50.0		47	30-130		
Phenanthrene	29.2		µg/l	5.00	50.0		58	40-140		
Phenol	13.8	QC2	µg/l	5.00	50.0		28	30-130		
Pyrene	31.1		µg/l	5.00	50.0		62	40-140		
Pyridine	20.8		µg/l	5.00	50.0		42	40-140		
1,2,4-Trichlorobenzene	24.4		µg/l	5.00	50.0		49	40-140		
2,4,5-Trichlorophenol	27.1		µg/l	5.00	50.0		54	30-130		
2,4,6-Trichlorophenol	24.6		µg/l	5.00	50.0		49	30-130		
Surrogate: 2-Fluorobiphenyl	*27.2*		µg/l		*50.0*		*54*	*30-130*		
Surrogate: 2-Fluorophenol	*20.9*		µg/l		*50.0*		*42*	*15-110*		
Surrogate: Nitrobenzene-d5	*30.3*		µg/l		*50.0*		*61*	*30-130*		
Surrogate: Phenol-d5	*14.7*		µg/l		*50.0*		*29*	*15-110*		
Surrogate: Terphenyl-dl4	*29.4*		µg/l		*50.0*		*59*	*30-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104837 - SW846 3510C										
LCS (1104837-BS1)					Prepared & Analyzed: 21-Mar-11					
Surrogate: 2,4,6-Tribromophenol	*30.8*		µg/l		*50.0*		*62*	*15-110*		
LCS Dup (1104837-BSD1)					Prepared & Analyzed: 21-Mar-11					
Acenaphthene	30.0		µg/l	5.00	50.0		60	40-140	5	20
Acenaphthylene	29.6		µg/l	5.00	50.0		59	40-140	5	20
Aniline	30.8		µg/l	5.00	50.0		62	40-140	12	20
Anthracene	31.2		µg/l	5.00	50.0		62	40-140	4	20
Azobenzene/Diphenyldiazine	34.4		µg/l	5.00	50.0		69	40-140	5	20
Benzidine	10.7		µg/l	5.00	50.0		21	0-140	12	20
Benzo (a) anthracene	31.0		µg/l	5.00	50.0		62	40-140	2	20
Benzo (a) pyrene	30.7		µg/l	5.00	50.0		61	40-140	0.9	20
Benzo (b) fluoranthene	29.8		µg/l	5.00	50.0		60	40-140	2	20
Benzo (g,h,i) perylene	28.2		µg/l	5.00	50.0		56	40-140	0.4	20
Benzo (k) fluoranthene	30.4		µg/l	5.00	50.0		61	40-140	9	20
Benzoic acid	15.0		µg/l	5.00	50.0		30	17.4-130	5	20
Benzyl alcohol	27.5		µg/l	5.00	50.0		55	40-140	0.9	20
Bis(2-chloroethoxy)methane	26.6		µg/l	5.00	50.0		53	40-140	10	20
Bis(2-chloroethyl)ether	25.8		µg/l	5.00	50.0		52	40-140	1	20
Bis(2-chloroisopropyl)ether	34.9		µg/l	5.00	50.0		70	40-140	4	20
Bis(2-ethylhexyl)phthalate	33.7		µg/l	5.00	50.0		67	40-140	1	20
4-Bromophenyl phenyl ether	28.5		µg/l	5.00	50.0		57	40-140	6	20
Butyl benzyl phthalate	30.4		µg/l	5.00	50.0		61	40-140	2	20
Carbazole	32.5		µg/l	5.00	50.0		65	40-130	4	20
4-Chloro-3-methylphenol	30.7		µg/l	5.00	50.0		61	30-130	3	20
4-Chloroaniline	30.8		µg/l	5.00	50.0		62	40-140	10	20
2-Chloronaphthalene	29.4		µg/l	5.00	50.0		59	40-140	7	20
2-Chlorophenol	27.8		µg/l	5.00	50.0		56	30-130	3	20
4-Chlorophenyl phenyl ether	30.6		µg/l	5.00	50.0		61	40-140	8	20
Chrysene	30.5		µg/l	5.00	50.0		61	40-140	2	20
Dibenzo (a,h) anthracene	27.3		µg/l	5.00	50.0		55	40-140	2	20
Dibenzofuran	30.4		µg/l	5.00	50.0		61	40-140	8	20
1,2-Dichlorobenzene	27.8		µg/l	5.00	50.0		56	40-140	5	20
1,3-Dichlorobenzene	26.4		µg/l	5.00	50.0		53	40-140	2	20
1,4-Dichlorobenzene	26.5		µg/l	5.00	50.0		53	40-140	2	20
3,3´-Dichlorobenzidine	26.2		µg/l	5.00	50.0		52	40-140	3	20
2,4-Dichlorophenol	28.0		µg/l	5.00	50.0		56	30-130	5	20
Diethyl phthalate	30.5		µg/l	5.00	50.0		61	40-140	5	20
Dimethyl phthalate	29.0		µg/l	5.00	50.0		58	40-140	7	20
2,4-Dimethylphenol	25.8		µg/l	5.00	50.0		52	30-130	0.8	20
Di-n-butyl phthalate	31.1		µg/l	5.00	50.0		62	40-140	2	20
4,6-Dinitro-2-methylphenol	8.59	QC2	µg/l	5.00	50.0		17	30-130	18	20
2,4-Dinitrophenol	9.02	QC2	µg/l	5.00	50.0		18	30-130	13	20
2,4-Dinitrotoluene	33.8		µg/l	5.00	50.0		68	40-140	7	20
2,6-Dinitrotoluene	34.1		µg/l	5.00	50.0		68	40-140	7	20
Di-n-octyl phthalate	37.4		µg/l	5.00	50.0		75	40-140	5	20
Fluoranthene	30.1		µg/l	5.00	50.0		60	40-140	2	20
Fluorene	29.4		µg/l	5.00	50.0		59	40-140	5	20
Hexachlorobenzene	28.9		µg/l	5.00	50.0		58	40-140	2	20
Hexachlorobutadiene	22.2		µg/l	5.00	50.0		44	40-140	3	20
Hexachlorocyclopentadiene	13.7	QC2	µg/l	5.00	50.0		27	40-140	9	20
Hexachloroethane	26.5		µg/l	5.00	50.0		53	40-140	3	20
Indeno (1,2,3-cd) pyrene	26.1		µg/l	5.00	50.0		52	40-140	2	20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104837 - SW846 3510C										
LCS Dup (1104837-BSD1)					Prepared & Analyzed: 21-Mar-11					
Isophorone	29.8		µg/l	5.00	50.0		60	40-140	4	20
2-Methylnaphthalene	29.6		µg/l	5.00	50.0		59	40-140	5	20
2-Methylphenol	28.4		µg/l	5.00	50.0		57	40-140	2	20
3 & 4-Methylphenol	27.2		µg/l	10.0	50.0		54	40-140	1	20
Naphthalene	27.5		µg/l	5.00	50.0		55	40-140	5	20
2-Nitroaniline	34.7		µg/l	5.00	50.0		69	40-140	6	20
3-Nitroaniline	34.4		µg/l	5.00	50.0		69	40-140	4	20
4-Nitroaniline	36.2		µg/l	5.00	50.0		72	40-140	3	20
Nitrobenzene	29.9		µg/l	5.00	50.0		60	40-140	3	20
2-Nitrophenol	25.8		µg/l	5.00	50.0		52	30-130	6	20
4-Nitrophenol	36.8		µg/l	5.00	50.0		74	30-130	1	20
N-Nitrosodimethylamine	23.5		µg/l	5.00	50.0		47	40-140	0.8	20
N-Nitrosodi-n-propylamine	31.6		µg/l	5.00	50.0		63	40-140	4	20
N-Nitrosodiphenylamine	33.5		µg/l	5.00	50.0		67	40-140	4	20
Pentachlorophenol	25.0		µg/l	5.00	50.0		50	30-130	7	20
Phenanthrene	29.9		µg/l	5.00	50.0		60	40-140	3	20
Phenol	14.0	QC2	µg/l	5.00	50.0		28	30-130	1	20
Pyrene	31.9		µg/l	5.00	50.0		64	40-140	2	20
Pyridine	18.1	QC2	µg/l	5.00	50.0		36	40-140	14	20
1,2,4-Trichlorobenzene	25.3		µg/l	5.00	50.0		51	40-140	3	20
2,4,5-Trichlorophenol	29.2		µg/l	5.00	50.0		58	30-130	7	20
2,4,6-Trichlorophenol	25.8		µg/l	5.00	50.0		52	30-130	5	20
Surrogate: 2-Fluorobiphenyl	*29.1*		µg/l		*50.0*		*58*	*30-130*		
Surrogate: 2-Fluorophenol	*21.1*		µg/l		*50.0*		*42*	*15-110*		
Surrogate: Nitrobenzene-d5	*31.7*		µg/l		*50.0*		*63*	*30-130*		
Surrogate: Phenol-d5	*14.5*		µg/l		*50.0*		*29*	*15-110*		
Surrogate: Terphenyl-dl4	*29.9*		µg/l		*50.0*		*60*	*30-130*		
Surrogate: 2,4,6-Tribromophenol	*32.6*		µg/l		*50.0*		*65*	*15-110*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104828 - SW846 3510C										
Blank (1104828-BLK1)					Prepared: 21-Mar-11 Analyzed: 22-Mar-11					
Aroclor-1016	BRL		µg/l	0.200						
Aroclor-1016 [2C]	BRL		µg/l	0.200						
Aroclor-1221	BRL		µg/l	0.200						
Aroclor-1221 [2C]	BRL		µg/l	0.200						
Aroclor-1232	BRL		µg/l	0.200						
Aroclor-1232 [2C]	BRL		µg/l	0.200						
Aroclor-1242	BRL		µg/l	0.200						
Aroclor-1242 [2C]	BRL		µg/l	0.200						
Aroclor-1248	BRL		µg/l	0.200						
Aroclor-1248 [2C]	BRL		µg/l	0.200						
Aroclor-1254	BRL		µg/l	0.200						
Aroclor-1254 [2C]	BRL		µg/l	0.200						
Aroclor-1260	BRL		µg/l	0.200						
Aroclor-1260 [2C]	BRL		µg/l	0.200						
Aroclor-1262	BRL		µg/l	0.200						
Aroclor-1262 [2C]	BRL		µg/l	0.200						
Aroclor-1268	BRL		µg/l	0.200						
Aroclor-1268 [2C]	BRL		µg/l	0.200						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.176*		µg/l		*0.200*		*88*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.205*		µg/l		*0.200*		*103*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.243*		µg/l		*0.200*		*122*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.267*		µg/l		*0.200*		*134*	*30-150*		
LCS (1104828-BS1)					Prepared: 21-Mar-11 Analyzed: 22-Mar-11					
Aroclor-1016	2.18		µg/l	0.200	2.50		87	50-114		
Aroclor-1016 [2C]	2.26		µg/l	0.200	2.50		91	50-114		
Aroclor-1260	2.31		µg/l	0.200	2.50		92	40-127		
Aroclor-1260 [2C]	2.30		µg/l	0.200	2.50		92	40-127		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.187*		µg/l		*0.200*		*94*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.207*		µg/l		*0.200*		*104*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.254*		µg/l		*0.200*		*127*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.266*		µg/l		*0.200*		*133*	*30-150*		
LCS Dup (1104828-BSD1)					Prepared: 21-Mar-11 Analyzed: 22-Mar-11					
Aroclor-1016	2.28		µg/l	0.200	2.50		91	50-114	4	20
Aroclor-1016 [2C]	2.15		µg/l	0.200	2.50		86	50-114	5	20
Aroclor-1260	2.50		µg/l	0.200	2.50		100	40-127	8	20
Aroclor-1260 [2C]	2.24		µg/l	0.200	2.50		89	40-127	3	20
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.189*		µg/l		*0.200*		*94*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.196*		µg/l		*0.200*		*98*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.282*		µg/l		*0.200*		*141*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.252*		µg/l		*0.200*		*126*	*30-150*		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104821 - SW846 3510C										
Blank (1104821-BLK1)						Prepared: 21-Mar-11 Analyzed: 23-Mar-11				
Non-polar material (SGT-HEM)	BRL		mg/l	1.0						
LCS (1104821-BS1)						Prepared: 21-Mar-11 Analyzed: 23-Mar-11				
Non-polar material (SGT-HEM)	41.2		mg/l		48.6		85	83-101		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104677 - EPA 200 Series										
Blank (1104677-BLK1)					Prepared: 21-Mar-11 Analyzed: 22-Mar-11					
Zinc	BRL		mg/l	0.0050						
Lead	BRL		mg/l	0.0075						
Nickel	BRL		mg/l	0.0050						
Iron	BRL		mg/l	0.0150						
Selenium	BRL		mg/l	0.0150						
Antimony	BRL		mg/l	0.0060						
Silver	BRL		mg/l	0.0050						
Copper	BRL		mg/l	0.0050						
Chromium	BRL		mg/l	0.0050						
Cadmium	BRL		mg/l	0.0025						
Arsenic	BRL		mg/l	0.0040						
LCS (1104677-BS1)					Prepared: 21-Mar-11 Analyzed: 23-Mar-11					
Selenium	1.20		mg/l	0.0150	1.25		96	85-115		
Iron	1.38		mg/l	0.0150	1.25		110	85-115		
Nickel	1.31		mg/l	0.0050	1.25		105	85-115		
Lead	1.36		mg/l	0.0075	1.25		109	85-115		
Antimony	1.27		mg/l	0.0060	1.25		101	85-115		
Zinc	1.35		mg/l	0.0050	1.25		108	85-115		
Arsenic	1.29		mg/l	0.0040	1.25		103	85-115		
Silver	1.30		mg/l	0.0050	1.25		104	85-115		
Chromium	1.36		mg/l	0.0050	1.25		109	85-115		
Copper	1.38		mg/l	0.0050	1.25		110	85-115		
Cadmium	1.33		mg/l	0.0025	1.25		106	85-115		
Matrix Spike (1104677-MS1)			**Source: SB25832-01**		Prepared: 21-Mar-11 Analyzed: 22-Mar-11					
Zinc	1.34		mg/l	0.0050	1.25	0.0150	106	70-130		
Antimony	1.27		mg/l	0.0060	1.25	BRL	101	70-130		
Lead	1.27		mg/l	0.0075	1.25	BRL	101	70-130		
Nickel	1.21		mg/l	0.0050	1.25	0.0018	96	70-130		
Iron	4.51		mg/l	0.0150	1.25	3.13	110	70-130		
Selenium	1.26		mg/l	0.0150	1.25	BRL	100	70-130		
Copper	1.41		mg/l	0.0050	1.25	BRL	113	70-130		
Arsenic	1.33		mg/l	0.0040	1.25	0.0038	106	70-130		
Chromium	1.31		mg/l	0.0050	1.25	BRL	105	70-130		
Cadmium	1.25		mg/l	0.0025	1.25	BRL	100	70-130		
Silver	1.33		mg/l	0.0050	1.25	BRL	107	70-130		
Post Spike (1104677-PS1)			**Source: SB25832-01**		Prepared: 21-Mar-11 Analyzed: 22-Mar-11					
Iron	4.50		mg/l	0.0150	1.25	3.13	109	85-115		
Selenium	1.27		mg/l	0.0150	1.25	BRL	102	85-115		
Zinc	1.36		mg/l	0.0050	1.25	0.0150	107	85-115		
Antimony	1.29		mg/l	0.0060	1.25	BRL	103	85-115		
Nickel	1.22		mg/l	0.0050	1.25	0.0018	98	85-115		
Lead	1.28		mg/l	0.0075	1.25	BRL	102	85-115		
Copper	1.44		mg/l	0.0050	1.25	BRL	115	85-115		
Chromium	1.33		mg/l	0.0050	1.25	BRL	106	85-115		
Cadmium	1.26		mg/l	0.0025	1.25	BRL	101	85-115		
Arsenic	1.35		mg/l	0.0040	1.25	0.0038	107	85-115		
Silver	1.36		mg/l	0.0050	1.25	BRL	109	85-115		
Batch 1104678 - EPA200/SW7000 Series										
Blank (1104678-BLK1)					Prepared: 21-Mar-11 Analyzed: 22-Mar-11					
Mercury	BRL		mg/l	0.00020						
LCS (1104678-BS1)					Prepared: 21-Mar-11 Analyzed: 22-Mar-11					

Total Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104678 - EPA200/SW7000 Series										
LCS (1104678-BS1)						Prepared: 21-Mar-11 Analyzed: 22-Mar-11				
Mercury	0.00491		mg/l	0.00020	0.00500		98	85-115		
Duplicate (1104678-DUP1)			**Source: SB25832-01**			Prepared: 21-Mar-11 Analyzed: 22-Mar-11				
Mercury	BRL		mg/l	0.00020		BRL				20
Matrix Spike (1104678-MS1)			**Source: SB25832-02**			Prepared: 21-Mar-11 Analyzed: 22-Mar-11				
Mercury	0.00556		mg/l	0.00020	0.00500	BRL	111	80-120		
Post Spike (1104678-PS1)			**Source: SB25832-02**			Prepared: 21-Mar-11 Analyzed: 22-Mar-11				
Mercury	0.00572		mg/l	0.00020	0.00500	BRL	114	85-115		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1104804 - General Preparation										
Blank (1104804-BLK1)						Prepared & Analyzed: 18-Mar-11				
Hexavalent Chromium	BRL		mg/l	0.005						
LCS (1104804-BS1)						Prepared & Analyzed: 18-Mar-11				
Hexavalent Chromium	0.052		mg/l	0.005	0.0500		104	80-120		
Duplicate (1104804-DUP1)			**Source: SB25832-01**			Prepared & Analyzed: 18-Mar-11				
Hexavalent Chromium	BRL		mg/l	0.005		BRL				20
Matrix Spike (1104804-MS1)			**Source: SB25832-01**			Prepared & Analyzed: 18-Mar-11				
Hexavalent Chromium	0.040	QM9	mg/l	0.005	0.0500	BRL	80	85-115		
Matrix Spike Dup (1104804-MSD1)			**Source: SB25832-01**			Prepared & Analyzed: 18-Mar-11				
Hexavalent Chromium	0.039	QM9	mg/l	0.005	0.0500	BRL	78	85-115	3	20
Reference (1104804-SRM1)						Prepared & Analyzed: 18-Mar-11				
Hexavalent Chromium	0.025		mg/l	0.005	0.0248		101	85-115		
Batch 1104810 - General Preparation										
Blank (1104810-BLK1)						Prepared & Analyzed: 18-Mar-11				
Total Residual Chlorine	BRL		mg/l	0.020						
LCS (1104810-BS1)						Prepared & Analyzed: 18-Mar-11				
Total Residual Chlorine	0.049		mg/l	0.020	0.0500		98	90-110		
Duplicate (1104810-DUP1)			**Source: SB25832-01**			Prepared & Analyzed: 18-Mar-11				
Total Residual Chlorine	BRL		mg/l	0.020		BRL				20
Matrix Spike (1104810-MS1)			**Source: SB25832-01**			Prepared & Analyzed: 18-Mar-11				
Total Residual Chlorine	0.046		mg/l	0.020	0.0500	BRL	92	80-120		
Matrix Spike Dup (1104810-MSD1)			**Source: SB25832-01**			Prepared & Analyzed: 18-Mar-11				
Total Residual Chlorine	0.047		mg/l	0.020	0.0500	BRL	94	80-120	2	20
Reference (1104810-SRM1)						Prepared & Analyzed: 18-Mar-11				
Total Residual Chlorine	0.137		mg/l	0.020	0.139		98	85-115		
Batch 1104978 - General Preparation										
Blank (1104978-BLK1)						Prepared & Analyzed: 22-Mar-11				
Total Suspended Solids	BRL		mg/l	5.00						
Blank (1104978-BLK2)						Prepared & Analyzed: 22-Mar-11				
Total Suspended Solids	BRL		mg/l	5.00						
LCS (1104978-BS1)						Prepared & Analyzed: 22-Mar-11				
Total Suspended Solids	84.0		mg/l	10.0	82.0		102	90-110		
LCS (1104978-BS2)						Prepared & Analyzed: 22-Mar-11				
Total Suspended Solids	90.0		mg/l	10.0	82.0		110	90-110		
Batch 1105012 - General Preparation										
Blank (1105012-BLK1)						Prepared: 23-Mar-11 Analyzed: 24-Mar-11				
Cyanide (total)	BRL		mg/l	0.00500						
Blank (1105012-BLK2)						Prepared: 23-Mar-11 Analyzed: 24-Mar-11				
Cyanide (total)	BRL		mg/l	0.00500						
LCS (1105012-BS1)						Prepared: 23-Mar-11 Analyzed: 24-Mar-11				
Cyanide (total)	0.297		mg/l	0.00500	0.300		99	90-110		
LCS (1105012-BS2)						Prepared: 23-Mar-11 Analyzed: 24-Mar-11				
Cyanide (total)	0.288		mg/l	0.00500	0.300		96	90-110		
Reference (1105012-SRM1)						Prepared: 23-Mar-11 Analyzed: 24-Mar-11				
Cyanide (total)	0.175		mg/l	0.00500	0.184		95	64.56-134.78		
Batch 1105305 - General Preparation										
Blank (1105305-BLK1)						Prepared & Analyzed: 25-Mar-11				
Chloride	BRL		mg/l	1.00						
Blank (1105305-BLK2)						Prepared & Analyzed: 25-Mar-11				

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1105305 - General Preparation										
Blank (1105305-BLK2)						Prepared & Analyzed: 25-Mar-11				
Chloride	BRL		mg/l	1.00						
Reference (1105305-SRM1)						Prepared & Analyzed: 25-Mar-11				
Chloride	25.3		mg/l	1.00	25.0		101	90-110		
Reference (1105305-SRM2)						Prepared & Analyzed: 25-Mar-11				
Chloride	25.4		mg/l	1.00	25.0		102	90-110		
Batch 1105345 - General Preparation										
Blank (1105345-BLK1)						Prepared & Analyzed: 28-Mar-11				
Chloride	BRL		mg/l	1.00						
Duplicate (1105345-DUP1)			**Source: SB25832-02**			Prepared & Analyzed: 28-Mar-11				
Chloride	14000		mg/l	1000		14000			0.07	20
Matrix Spike (1105345-MS1)			**Source: SB25832-02**			Prepared & Analyzed: 28-Mar-11				
Chloride	17700		mg/l	1000	4000	14000	94	90-110		
Matrix Spike Dup (1105345-MSD1)			**Source: SB25832-02**			Prepared & Analyzed: 28-Mar-11				
Chloride	17700		mg/l	1000	4000	14000	94	90-110	0.2	20
Reference (1105345-SRM1)						Prepared & Analyzed: 28-Mar-11				
Chloride	25.3		mg/l	1.00	25.0		101	90-110		

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S102054				
Calibration Check (S102054-CCV1)				
Benzene	223138.6	236097.4	5.8	25
Ethylbenzene	150757.4	160910.2	6.7	25
Methyl tert-butyl ether	37810.33	37444.56	-1.0	25
Naphthalene	117531.8	112179.9	-4.6	25
Toluene	186755.2	199417.9	6.8	25
m,p-Xylene	175810	186753.7	6.2	25
o-Xylene	151959.6	161534.9	6.3	25
2-Methylpentane	38256.03	42303.72	10.6	25
n-Nonane	28212.85	32047.74	13.6	25
n-Pentane	35528.69	40803.02	14.8	25
1,2,4-Trimethylbenzene	141201.2	148889.8	5.4	25
2,2,4-Trimethylpentane	37351.85	41657.42	11.5	25
n-Butylcyclohexane	30946.78	32743.84	5.8	25
n-Decane	22744.81	25702.2	13.0	25

Notes and Definitions

GS1	Sample dilution required for high concentration of target analytes to be within the instrument calibration range.
QC2	Analyte out of acceptance range in QC spike but no reportable concentration present in sample.
QM9	The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits.
R01	The Reporting Limit has been raised to account for matrix interference.
R04	The Reporting Limits for this analysis are elevated due to sample foaming.
S02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
ClHT	The method for residual chlorine indicates that samples should be analyzed immediately. 40 CFR 136 specifies a holding time of 15 minutes from sampling to analysis. Therefore all aqueous residual chlorine samples not analyzed in the field are considered out of hold time at the time of sample receipt.

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Interpretation of Total Petroleum Hydrocarbon Report

Petroleum identification is determined by comparing the GC fingerprint obtained from the sample with a library of GC fingerprints obtained from analyses of various petroleum products. Possible match categories are as follows:

Gasoline - includes regular, unleaded, premium, etc.
Fuel Oil #2 - includes home heating oil, #2 fuel oil, and diesel
Fuel Oil #4 - includes #4 fuel oil
Fuel Oil #6 - includes #6 fuel oil and bunker "C" oil
Motor Oil - includes virgin and waste automobile oil
Ligroin - includes mineral spirits, petroleum naphtha, vm&p naphtha
Aviation Fuel - includes kerosene, Jet A and JP-4
Other Oil - includes lubricating and cutting oil, and silicon oil

At times, the unidentified petroleum product is quantified using a calibration that most closely approximates the distribution of compounds in the sample. When this occurs, the result is qualified as *TPH (Calculated as).

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
June O'Connor
Kimberly Wisk
Nicole Leja
Rebecca Merz

The following outlines the condition of all VPH samples contained within this report upon laboratory receipt.

Matrices	Deionized Water Ground Water		
Containers	✓ Satisfactory		
Sample Preservative	**Aqueous** (acid preserved)	N/A ✓ pH≤2 pH>2	
	Soil or Sediment	✓ N/A Samples not received in Methanol	ml Methanol/g soil 1:1 +/-25% Other
		Samples received in Methanol: covering soil/sediment not covering soil/sediment	
		Samples received in air-tight container	
Temperature	✓ Received on ice	Received at 4 ± 2 ºC ✓ Other: 1.7ºC	

Were all QA/QC procedures followed as required by the VPH method? *Yes*
Were any significant modifications made to the VPH method as specified in section 11.3? *No *see below*
Were all performance/acceptance standards for required QA/QC procedures achieved? *Yes*
* Yes, if PID and FID surrogate recoveries are listed as n/a, then that sample was run via GCMS using all QC criteria specified in the method

I attest 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.

Authorized by:

Nicole Leja
Laboratory Director

MassDEP Analytical Protocol Certification Form

Laboratory Name: Spectrum Analytical, Inc.	**Project #:** 212738
Project Location: O'Connell Oil Assoc - Lee, MA	**RTN:**
This form provides certifications for the following data set:	SB25832-01 through SB25832-03
Matrices: Deionized Water Ground Water	

CAM Protocol

✓ 8260 VOC CAM II A	✓ 7470/7471 Hg CAM III B	✓ MassDEP VPH CAM IV A	8081 Pesticides CAM V B	✓ 7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	✓ Yes No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	✓ Yes No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	✓ Yes No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	✓ Yes No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	✓ Yes No Yes No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)?	✓ Yes No

Responses to questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	Yes ✓ No

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC performance standards specified in the CAM protocol(s) achieved?	Yes ✓ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ✓ No

All negative responses are addressed in a case narrative on the cover page of this report.

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.

Nicole Leja

Nicole Leja
Laboratory Director
Date: 3/29/2011

SB 25832 By

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 2

Special Handling:
- [x] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS-Agawam

Invoice To: ECS-Agawam

Project No.: 212738

Site Name: OConnell Oil

Location: Main ST Lee State: MA

Project Mgr.: Lori Mccarthy

P.O. No.: _____ RQN: 0003

Sampler(s): Steve

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= DF X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VPH	8260B full list	TPH 1664	EDB 504.1	PCB's 608	Total Suspended solids	Total Residual chlorine	Total Cyanide	QA Reporting Notes: (check if needed)
25832-01	ECS-1	3-16-11	1:00	G	GW		6	4		3	X	X	X	X	X	X	X	X	
02	ECS-3	↓	2:00	G	GW		6	4		3	X	X	X	X	X	X	X	X	
03	Trip		AM	G	X1		1				X								

- [x] Provide MA DEP MCP CAM Report
- [ ] Provide CT DPH RCP Report

QA/QC Reporting Level
- [x] Standard
- [ ] No QC
- [ ] Other _____

State specific reporting standards: _____

- [ ] Fax results when available to (_____) _____
- [x] E-mail to LMccarthy@ecs
- EDD Format _____

Condition upon receipt: [x] Iced [ ] Ambient [x] °C 1.7

Relinquished by:	Received by:	Date:	Time:
Steve Bartolotta		3/18/11	16:15

SB25832 Rev

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 2 of 2

Special Handling:
- ☒ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS - Agawam

Invoice To: ECS - Agawam

Project No.: 212738

Site Name: OConnell Oil

Location: Main ST Lee State: MA

Project Mgr.: Lori McCarthy

P.O. No.: _____ RQN: 0003

Sampler(s): Steve

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Containers:	Analyses: 625 Full list	Chromium VI	Total metals *	200.7					QA Reporting Notes: (check if needed)
25832-01	ECS-1	3-18-11	1:00	G	GW							X	2	X	3					☒ Provide MA DEP MCP CAM Report
02	ECS-3	3-18-11	2:00	G	GW							1	X	X	X					☐ Provide CT DPH RCP Report
																				QA/QC Reporting Level
																				☒ Standard ☐ No QC
																				☐ Other _____
																				State specific reporting standards:
																				* Antimony, Arsenic, Cadmium, Chromium, copper, lead, Mercury, nickel, Selenium, Silver, Zinc, iron
																				Per client request

☐ Fax results when available to (_____) _____

☒ E-mail to LMccarthy @ ecs

EDD Format _____

Condition upon receipt: ☐ Iced ☐ Ambient ☒ °C 1.7

Relinquished by:	Received by:	Date:	Time:
Steve Bartolotta		3/18/11	16:15

SB 25832 By J

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 2

Special Handling:
- ☒ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS-Agawam

Project Mgr.: Lori Macarthy

Invoice To: ECS-Agawam

P.O. No.: _____ RQN: 0003

Project No.: 21238
Site Name: O'Connell Oil
Location: Main ST Lee State: MA
Sampler(s): Steve

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= DF X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Chloride	VPH	8260B full list	TPH 1664	EDB soil	PCB's 608	Total Suspended Solids	Total Residual Chlorine	Total Cyanide
25832-01	ECS-1	3-16-11	1:00	G	GW		6	4		3	X	X	X	X	X	X	X	X	X
02	ECS-3	↓	2:00	G	GW		6	4		3	X	X	X	X	X	X	X	X	X
03	Trip	↓	AM	G	X1		1					X							

QA Reporting Notes: (check if needed)
- ☒ Provide MA DEP MCP CAM Report
- ☐ Provide CT DPH RCP Report

QA/QC Reporting Level
- ☒ Standard ☐ No QC
- ☐ Other _____

State specific reporting standards: _____

☒ ADDED PEE
CLIENT FAX 3/25/11 (JH)

☐ Fax results when available to (_____) _____
☒ E-mail to LMacarthy@ecs
EDD Format _____
Condition upon receipt: ☑ Iced ☐ Ambient ☑ °C 1.7

Relinquished by:	Received by:	Date:	Time:
Steve Bastoni		3/18/11	16:15

ATTACHMENT III

STREAMSTATS GAUGING STATION REPORT AND MAP

USGS 01197500 HOUSATONIC RIVER NEAR GREAT BARRINGTON, MA

Available data for this site SUMMARY OF ALL AVAILABLE DATA GO

Stream Site

DESCRIPTION:

Latitude 42°13'55", Longitude 73°21'19" NAD27
Berkshire County, Massachusetts, Hydrologic Unit 01100005
Drainage area: 282 square miles
Contributing drainage area: 282 square miles,
Datum of gage: 683.04 feet above NGVD29.

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Real-time	-- Previous 120 days --		
Daily Data			
Discharge, cubic feet per second	1913-05-17	2011-03-27	35744
Gage height, feet	1992-10-01	2011-03-27	20014
Daily Statistics			
Discharge, cubic feet per second	1913-05-17	2009-09-30	35201
Gage height, feet	2000-10-01	2009-09-30	3228
Monthly Statistics			
Discharge, cubic feet per second	1913-05	2009-09	

Gage height, feet	2000-10	2009-09	
Annual Statistics			
Discharge, cubic feet per second	1913	2009	
Gage height, feet	2001	2009	
Peak streamflow	1914-03-28	2008-03-09	95
Field measurements	1936-03-13	2011-03-07	157
Field/Lab water-quality samples	1955-10-27	1996-04-01	668
Additional Data Sources	**Begin Date**	**End Date**	**Count**
Instantaneous-Data Archive **offsite**	1990-10-01	2006-09-30	502757
Annual Water-Data Report (pdf) **offsite**	2005	2009	5

OPERATION:

Record for this site is maintained by the USGS Massachusetts Water Science Center

Email questions about this site to Massachusetts Water Science Center Water-Data Inquiries

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Questions about sites/data?
Feedback on this web site
Automated retrievals
Help

Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility FOIA Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey

Title: NWIS Site Information for USA: Site Inventory
URL: http://waterdata.usgs.gov/nwis/inventory?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2011-03-28 15:58:32 EDT
1.49 1.47 nadww01

StreamStats Data-Collection Station Report

USGS Station Number	01197500
Station Name	HOUSATONIC RIVER NEAR GREAT BARRINGTON, MA

Click here to link to available data on NWIS-Web for this site.

Descriptive Information

Station Type	Gaging Station, continuous record
Regulated?	True
Period of Record	1913-present
Remarks	Low flow is regulated by powerplants. High flow is slightly affected by retarding reservoir since 1973.
Latitude (degrees NAD83)	42.23203306
Longitude (degrees NAD83)	-73.35483278
Hydrologic unit code	01100005
Local Basin	2-Housatonic
County	003-Berkshire
MCD	26815-Great Barrington town
Directions to station	Highway bridge

Physical Characteristics

Characteristic Name	Value	Units	Citation Number
Area_of_Lakes_and_Ponds	1.94	square miles	30
Contributing_Drainage_Area	280.000	square miles	47
Drainage_Area	282	square miles	30
Main_Channel_Length	49.700	miles	47
Mean_Basin_Elevation	1430	feet	30
Mean_Basin_Slope_ft_per_mi	16.5	feet per mi	30
Percent_Forest	65.000	percent	47

Percent_Lakes_and_Ponds	1.9400	percent	47
Percent_Storage	2.0700	percent	47
Soil_Infiltration	3.8000	inches	47
Stream_Slope_10_and_85_Method	16.500	feet per mi	47
Total_Stream_Length	49.7	miles	30

Streamflow Statistics

Statistic Name	Value	Units	Citation Number
Peak-Flow Statistics			
100_Year_Peak_Flood	11800	cubic feet per second	12
2_Year_Peak_Flood	3680.00	cubic feet per second	47
200_Year_Peak_Flood	13500.0	cubic feet per second	47
5_Year_Peak_Flood	5340.00	cubic feet per second	47
500_Year_Peak_Flood	16300	cubic feet per second	12
Log_Mean_of_Annual_Peaks	2.04	Log base 10	12
Log_Skew_of_Annual_Peaks	0.45	Log base 10	12
Log_STD_of_Annual_Peaks	0.18	Log base 10	12
Mean_Annual_Flood	3870	cubic feet per second	12
Systematic_peak_years	80	years	12
WRC_Mean	3.5810	Log base 10	47
WRC_Skew	0.4830	Log base 10	47
WRC_STD	0.1810	Log base 10	47
Flood-Volume Statistics			
7_Day_10_Year_Maximum	3990.00	cubic feet per second	47
7_Day_2_Year_Maximum	2440.00	cubic feet per second	47
7_Day_50_Year_Maximum	5290.00	cubic feet per second	47
Low-Flow Statistics			
7_Day_10_Year_Low_Flow	69	cubic feet per second	25
7_Day_2_Year_Low_Flow	106	cubic feet per second	25
7_Day_20_Year_Low_Flow	58.400	cubic feet per second	47
Low_flow_years	65.000	years	47
Flow-Duration Statistics			
1_Percent_Duration	2824.1	cubic feet per second	41
10_Percent_Duration	1140	cubic feet per second	41
15_Percent_Duration	904	cubic feet per second	01
2_Percent_Duration	2290	cubic feet per second	01
20_Percent_Duration	745	cubic feet per second	41

25_Percent_Duration	634	cubic feet per second	41
3_Percent_Duration	1960	cubic feet per second	01
30_Percent_Duration	544	cubic feet per second	41
35_Percent_Duration	472	cubic feet per second	01
40_Percent_Duration	421	cubic feet per second	41
45_Percent_Duration	370	cubic feet per second	01
5_Percent_Duration	1590	cubic feet per second	41
50_Percent_Duration	335	cubic feet per second	41
55_Percent_Duration	298	cubic feet per second	01
60_Percent_Duration	269	cubic feet per second	41
65_Percent_Duration	240	cubic feet per second	01
7_Percent_Duration	1380	cubic feet per second	01
70_Percent_Duration	214	cubic feet per second	41
75_Percent_Duration	190	cubic feet per second	41
80_Percent_Duration	168	cubic feet per second	41
85_Percent_Duration	149	cubic feet per second	01
90_Percent_Duration	125	cubic feet per second	41
93_Percent_Duration	112	cubic feet per second	01
95_Percent_Duration	100	cubic feet per second	41
97_Percent_Duration	85.0	cubic feet per second	01
98_Percent_Duration	75.0	cubic feet per second	01
99_Percent_Duration	57	cubic feet per second	41
Annual Flow Statistics			
Daily_flow_years	66.000	years	31
Mean_Annual_Flow	530.000	cubic feet per second	31
Stand_Dev_of_Mean_Annual_Flow	136.000	cubic feet per second	31
Monthly Flow Statistics			
April_Mean_Flow	1277.00	cubic feet per second	31
April_STD	508.000	cubic feet per second	31
August_Mean_Flow	243.000	cubic feet per second	31
August_STD	172.000	cubic feet per second	31
December_Mean_Flow	522.000	cubic feet per second	31
December_STD	305.000	cubic feet per second	31
February_Mean_Flow	478.000	cubic feet per second	31
February_STD	245.000	cubic feet per second	31
January_Mean_Flow	517.000	cubic feet per second	31
January_STD	302.000	cubic feet per second	31
July_Mean_Flow	279.000	cubic feet per second	31
July_STD	205.000	cubic feet per second	31
June_Mean_Flow	409.000	cubic feet per second	31
June_STD	256.000	cubic feet per second	31

March_Mean_Flow	930.000	cubic feet per second	31
March_STD	445.000	cubic feet per second	31
May_Mean_Flow	694.000	cubic feet per second	31
May_STD	270.000	cubic feet per second	31
November_Mean_Flow	457.000	cubic feet per second	31
November_STD	338.000	cubic feet per second	31
October_Mean_Flow	280.000	cubic feet per second	31
October_STD	207.000	cubic feet per second	31
September_Mean_Flow	272.000	cubic feet per second	31
September_STD	245.000	cubic feet per second	31
General Flow Statistics			
Average_daily_streamflow	523.829	cubic feet per second	41
Maximum_daily_flow	11100	cubic feet per second	41
Minimum_daily_flow	1	cubic feet per second	41
Std_Dev_of_daily_flows	572.578	cubic feet per second	41
Base Flow Statistics			
Average_BFI_value	0.523	dimensionless	42
Number_of_years_to_compute_BFI	90	years	42
Std_dev_of_annual_BFI_values	0.082	dimensionless	42
Precipitation Statistics			
24_Hour_2_Year_Precipitation	2.8000	inches	47
Mean_Annual_Precipitation	46.700	inches	47
Climate Characteristics			
Mean_Annual_Snowfall	65.000	inches	47
Temperature Statistics			
Mean_Min_January_Temperature	12.000	degrees F	47

Citations

Citation Number	Citation Name and URL
01	Bent, G.C., 1999, Streamflow, Base Flow, and Ground-Water Recharge in the Housatonic River Basin, Western Massachusetts and Parts of Eastern New York and Northwestern Connecticut: U.S. Geological Survey Water-Resources Investigations Report 98-4232, 68 p.
12	Murphy, P.J., 2001, Evaluation of mixed-population flood-frequency analysis: American Society of Civil Engineers, Journal of Hydrologic Engineering, v. 6, no. 1, p. 62-70
25	Wandle, S.W., Jr., and Lippert, R.G., 1984, Gazetteer of Hydrologic Characteristics of Streams in Massachusetts--Housatonic River Basin: U.S.

	Geological Survey Water-Resources Investigations Report 84-4285
30	Imported from NWIS file
31	Imported from Basin Characteristics file
41	Wolock, D.M., 2003, Flow characteristics at U.S. Geological Survey streamgages in the conterminous United States: U.S. Geological Survey Open-File Report 03-146, digital data set
42	Wolock, D.M., 2003, Base-flow index grid for the conterminous United States: U.S. Geological Survey Open-File Report 03-263, digital data set
47	Wandle, S.W., Jr., 2003, Estimating peak discharges of small, rural streams in Massachusetts: U.S. Geological Survey Water-Supply Paper 2215, 26 p.

StreamStats National Data-Collection Station Information - Microsoft Internet Explorer provided by ECS

http://streamstatsags.cr.usgs.gov/gages/viewer14.htm?stabbr=GAGES

USGS

StreamStats National Data-Collection Station Information

Zoom To:

Zoom In to at least 1:5,000,000 to see gages. Click on a gage to get additional information.

Explanation

Gaging Stations
- Continuous Streamgage
- Lowflow Streamgage
- Peakflow Streamgage
- Peak, Low and Partial Record
- Miscellaneous Record
- Unknown
- HUC 8
- HUC 12

0 0.5 1mi

Scale: 1 : 144,448

Latitude: 42.33
Longitude: -73.23

Imagery | Street Map | World Topo | USA Topo

Site

Gauging Station

Lee, MA

01197650
01197600
01197155
01197180
01197170
01180650
01197960
01197230
01180800
01197240
01184750
01197280
01197220
01197500
01197550
01197802
01197800
01197210
01197250
01197260
01197200
01184800
01198000
01198137
01184850

Lee
Stockbridge
Glendale
South Lee
Pleasant St
Housatonic
Tyringham
Otis
Monterey
North Egremont
Great Barrington
Route 71
Keene
Albany
Springfield
Beacon

GT Barrington Rd
Great Barrington Rd
Glendale Rd
N Plain Rd
Park St
Housatonic River
West Branch West

102
183
20
9
87
7
44
5
23

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U.S. Department of the Interior | U.S. Geological Survey
URL: http://streamstatsags.cr.usgs.gov/gages/viewer14.htm
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7:40 AM

http://water.usgs.gov/osw/streamstats

Internet | 100%

ATTACHMENT IV

HOUSATONIC RIVER WATERSHED WATER QUALITY ASSESSMENT REPORT (SEGMENT MA21-19)

HOUSATONIC RIVER (SEGMENT MA21-19)
Location: Outlet of Woods Pond, Lee/Lenox, to the Risingdale impoundment dam, Great Barrington.
Segment Length: 19.9 miles.
Classification: Class B, Warm Water Fishery

Based on the last evaluation of water quality conditions, this segment is listed in Category 5 of the 2004 Integrated List of Waters. This segment was assessed as impaired and requires TMDLs for unknown toxicity, priority organics, thermal modifications, pathogens, and turbidity (MassDEP 2005a).

Risingdale Impoundment (MA21121) will no longer be reported on as a lake segment since the retention time of this 41 acre waterbody was estimated at less than 1 day; it will be considered a run of the river impoundment (McVoy 2006). The retention time estimate was based on the annual historical mean discharge from two stream gages in the Housatonic River Basin (01197500 and 01197000) and the normal storage volume of the dam reported by MA DCR in their Massachusetts Dam Safety Program Database (Socolow *et al*. 2004 and MA DCR 2002).

Through the River Instream Flow Stewards (RIFLS) program, HVA has monitored the water level in Beartown Brook, a tributary to this segment, in Lee (RIFLS 2006). Trout and crayfish were documented in the brook. HVA also deployed a temperature logger in the brook.

WMA WATER WITHDRAWALS (APPENDIX J)
Schweitzer-Mauduit International, Inc (10215002/9P210215002)
Mead Westvaco formerly Mead Corporation – Specialty Paper Division (10215001/9P10215001) Two sources listed, Housatonic River and Beartown Brook
Cranwell Conference Center (V10215202)
Lane Construction Company (9P210215004)
Lee Water Department (10215003/9P210215003)

NPDES SURFACE WATER DISCHARGES (APPENDIX J)
Lenox Wastewater Treatment Plant (MA0100935)
Schweitzer-Mauduit International, Inc (MA0005371)
Oldcastle Architectural Products Group (MAR05A083)
Lee WWTP (MA0100153)
MW Custom Papers, Inc.– Laurel Mill (MA0001716)
MW Custom Papers, Inc.– Willow Mill (MA0001848)
Stockbridge Wastewater Treatment Plant (MA0101087)

FERC
Willow Mill Hydroelectric Project FERC No. 2985
The Willow Mill Hydroelectric Project is owned and operated by MeadWestvaco Corporation and has an existing FERC license, which was issued on May 1, 1981 and has an expiration date of April 30, 2011. MeadWestvaco Corporation intends to submit an Application for a New License by April 30, 2009. In order to expedite the licensing process, the MeadWestvaco Corporation submitted a Pre-Application Document and Notice of Intent for a new FERC license in April 2006. Comments by resource agencies and stakeholders on the Pre-Application Document and Notice of Intent will result in data gathered from fieldwork and those study results will be incorporated into the license application.

Glendale Hydroelectric Project (P-2801).
The Glendale Project is owned and operated by Littleville Power Company, Inc. (LPC), a subsidiary of Enel North America, Inc. (Enel). LPC is preparing an application to the FERC for a new federal license. The existing license, which was issued on November 23, 1979, has an expiration date of October 31, 2009. LPC must file its application with FERC on or before October 31, 2007. The following information is excerpted from the Initial Consultation Document (ICD) for the Glendale Hydroelectric Project (LPC 2005).

A FERC preliminary permit was issued to Fox River Paper Co. to operate the Risingdale Dam (Project Number 12528). The facility is authorized to generate 1100 kW. The permit was issued in December 2004 and expires in November 2007. Multiple preliminary permits have been granted for this site dating

back to 1985. A preliminary permit is issued to allow a project proponent time to study the feasibility of a project and determine if it is economically viable. It is anticipated that this permittee will apply for a license in the winter of 2008 and the project should be online by 2010. The operator plans to continue the project in run-of-river mode. Environmental and engineering studies are projected to be finished in 2006. The HVA has submitted comments requesting minimum flow requirements and that recreational access for the public is allowed. MassDEP and the US Department of the Interior also submitted comments to FERC concerning this project including its impact on the cleanup of PCBs associated with the General Electric site and impacts to fish and wildlife (FERC 2006).

USE ASSESSMENT

AQUATIC LIFE USE

Habitat and Flow

DWM performed habitat assessments at three stations on this segment of the Housatonic River (Appendix C) in September 2002.

Station HT19A was adjacent to Crescent Mills – Crystal Street in Lenox, MA, downstream from the Woods Pond dam and the Lenox WWTP discharge. The total habitat score for Station HT19A was 162 out of 200. Habitat was limited by a narrow riparian zone. Filamentous green algal coverage within the reach was extensive (95%). Canopy coverage was estimated to be 0% (Appendix G). The dominant algal genera were *Rhizoclonium* sp*., Tabellaria* sp*., and Cocconeis* sp.

Station HT19C was downstream from power lines that cross Tyringham Road and 185 meters downstream from the Lee WWTP outfall in Lee. The total habitat score was 172 out of 200. Aquatic macrophytes were present in 25% of the reach, and were comprised almost entirely of the rooted submerged plants milfoil (*Myriophyllum* sp.) and Coontail (*Ceratophyllum* sp.). Also present, though sparse, was free floating Duckweed (*Lemna* sp.). Canopy cover was reported as 0%, while green filamentous algae covered 50% of the reach (Appendix G). The dominant algal genera were *Rhizoclonium* sp*. and Cocconeis* sp. Also notable were patches of sewage fungus near and downstream of the Lee WWTP outfall.

Station HT19E was located 145 meters downstream from the Springfield Terminal Railroad Bridge, and 1,940 meters downstream of the Glendale Dam in Stockbridge. The total habitat score for station HT19E was 185 out of 200. There was no canopy cover at this station. Aquatic macrophytes (*Myriophyllum* sp.) were sparse. Algal coverage was dense and dominated by thin-film green algae (100% within reach coverage) (Appendix G).

According to FERC records available online (FERC 2006), the Glendale Project has operated as run-of-river and met the minimum flow requirement of 10 cfs at the dam in 2002, 2003, and 2004. No fish passage facilities are currently required at this project. When requested the licensee is required to install fish passage facilities. It should also be noted that a flow study in the bypass reach of the Glendale Hydroelectric Project was conducted in the summer/fall 2006 (Smith 2006). The study results in the form of habitat versus flow relationships for each evaluation species (an In-stream Flow Incremental Methodology – IFIM evaluation that included brown trout, fallfish, and longnose dace) should provide a basis for making future recommendations on in-stream flow in the bypass reach, as well as serve as a decision making tool that will allow the FERC to balance in-stream flow and energy generation needs at the Project (Smith 2006).

Biology

DWM biologists collected chlorophyll *a* samples from Stations 19C and 19E on July 31st and September 25th 2002 (Appendix G). Chlorophyll *a* levels measured on these dates at stations 19C and 19E were between 1.5 and 3.7 mg/m^3. These are low chlorophyll *a* levels.

MA DFG conducted fish population sampling by barge, boat or backpack electroshocking within this segment of the Housatonic River at 18 sites between 2002 and 2004 (Richards 2006). Thirteen of these sites were located in Lee and five were located in Stockbridge. Sampling consisted of nine sites sampled in 2002, seven in 2003, and two in 2004. A total of 3,623 fish representing 24 species were observed at these 18 sites collectively, including: 1,662 rock bass, 419 smallmouth bass, 310 longnose dace, 303 white sucker, 262 bluntnose minnow, 210 brown trout (53-530mm), 84 bluegill, 59 common shiner, 57 blacknose dace, 43 common carp, 32 black crappie, 31 largemouth bass, 30 creek chub, 22 brook trout

(66-200mm), 21 fallfish, 21 pumpkinseed, 18 banded killifish, 16 brown bullhead, 12 golden shiner, 4 yellow perch, 3 northern pike, 2 tesselated darter, 1 chain pickerel, and 1 spottail shiner. Brown trout were observed at 13 of the 18 sites, while the 22 brook trout observed were all captured at one site. Although the fish assemblage was dominated by macrohabitat generalist species, the presence of 9 fluvial specialist/dependent species (though often represented by few individuals) is indicative of adequate water and habitat quality and a stable flow regime. The fish community was dominated by species tolerant to pollution, however two pollution intolerant species were present (brown and brook trout).

DWM sampled the benthic macroinvertebrate community at three sites along this segment of the Housatonic River (stations HT19A, HT19C, and HT19E) (Appendix C). The RBP III analysis of the benthic community in the river downstream from the Woods Pond dam and the Lenox WWTP discharge ((Station HT19A) indicated this station was slightly impacted when compared to the reference station on the mainstem river in Stockbridge (Station HT19E).

The RBP III analysis of the benthic community in the river downstream from the Lee WWTP outfall (Station HT19C) was found to be slightly impacted when compared to the mainstem reference (Station HT19E).

A reference station on the mainstem Housatonic River in Stockbridge (Station HT19E) was chosen that represented least impacted conditions and a healthy community (Appendix C). When compared to the reference station on the East Branch Housatonic River (Station EB01B) the benthic community at this site indicated the benthos were non-impacted.

Toxicity

Ambient

The Lenox WWTP staff collected water from the Housatonic River at the Foot Bridge at Woods Pond upstream from Outfall #001 for use as dilution water in the whole effluent toxicity tests. Between March 2002 and March 2006 (n=17), survival of *C. dubia* exposed (48 hours) to the river water ranged from 90 to 100% and survival of *P. promelas* exposed (48 hours) to the river water ranged from 95 to 100% (TOXTD database).

The Schweitzer-Mauduit staff collected water from the Housatonic River, approximately 100 yards upstream of the Columbia Mill Dam behind the Columbia WWTF (Columbia Street, Lee), for use as dilution water in the facility's whole effluent toxicity tests (Ryan 2005). River water is collected further upstream (approximately 1300 feet upstream of the Columbia Mill Dam at the Golden Hill Bridge) when snow and ice conditions are present. Between September 2000 and March 2006 (n=25), survival of *C. dubia* exposed (7-day) to the river water ranged from 80 to 100% (TOXTD database).

The Town of Lee has contracted the services of a private laboratory to conduct toxicity sampling and analysis of the WWTP effluent. The contracted laboratory personnel collected river water approximately 75 to 100 feet upstream of Outfall# 001 for use as dilution water in the whole effluent toxicity tests (Zerbato 2005). Between February 2000 and March 2006 (n=23), survival of *C. dubia* exposed (48 hours) to the river water ranged from 90 to 100% (TOXTD database).

The MW Custom Papers staff collected river water approximately 150 feet upstream of the Laurel Mill outfall at a point near the process water intake for use as dilution water in the facility's whole effluent toxicity tests (Grant 2005). Between October 2000 and April 2006 (n=23), survival of *C. dubia* exposed (7-day) to the river water ranged from 90 to 100% (TOXTD database). Between October 2000 and June 2005 survival of *P. promelas* exposed (7-day) to the river water ranged from 18 to 98% and survival was less than 75% in 17 of the 19 test events (TOXTD database). It should be noted that as of June 2005 the facility is no longer required to perform tests using *P. promelas*.

The MW Custom Papers staff collected river water approximately 3000 feet upstream of the Willow Mill outfall at the Meadow Street Bridge for use as dilution water for the Willow Mill WWTF's whole effluent toxicity tests. Between October 2000 and January 2006 (n=22), survival of *C. dubia* exposed (7-day) to the river water ranged from 80 to 100% (TOXTD database). During the same time period, survival of *P.*

promelas exposed (7-day) to the river water ranged from 8 to 98% and survival was less than 75% in 16 of the 22 test events (TOXTD database).

The Town of Stockbridge has contracted the services of a private laboratory to conduct toxicity sampling and analysis. The contracted laboratory personnel collected water from the Housatonic River approximately 30 feet upstream of Outfall # 001 for use as dilution water in the whole effluent toxicity tests (Campetti 2005). Between October 2004 and October 2005, survival of *C. dubia* exposed (48-hour) to the river water was between 90 and 100% (n=3), and survival of *P. promelas* was 100% (n=3) (TOXTD database).

Effluent
Between March 2002 and March 2006, acute whole effluent toxicity tests were conducted on the Lenox WWTP effluent using *C. dubia* and *P. promelas*. The LC_{50}s were all >100% (n=17) for each species, with the exception of one invalid *C. dubia* test (TOXTD database).

Between September 2000 and March 2006, twenty-five whole effluent toxicity tests were conducted on the Schweitzer-Mauduit WWTP effluent using the test organism *C. dubia.* The LC_{50}s ranged from 35 to 100% effluent with three test events (December 2001, 71%; June 2002, 37%; and March 2004, 35%) failing to meet the permit limit of $LC_{50} \geq$ 100% effluent. C-NOEC's ranged from 6.25 to 100% effluent with only one event (March 2005, 6.25% effluent) failing to meet the permit limit of $\geq$ 14% effluent (TOXTD database). However, in the 7-day chronic renewal, test organisms are sequentially exposed to three separate composite effluent samples collected over the course of the test. Thus, it is possible to observe acute effluent toxicity soon after effluent renewals during the chronic test. In 20 of the 25 toxicity tests there was evidence of some chronic toxicity. Of these 20 tests, acute toxicity was manifested in 8 tests, 6 of which were conducted during the month of March (2001-2006).

Between February 2000 and March 2006 twenty-three whole effluent toxicity tests were conducted on the Lee WWTF effluent using *C. dubia* as a test species. The LC_{50} 's were all $\geq$100% (TOXTD database). This facility is in the process of being upgraded.

Between October 2000 and April 2006 twenty-three whole effluent toxicity tests using *C. dubia* were conducted on the effluent from the MW Custom Papers WWTF at Laurel Mill. The LC_{50} results were all $\geq$100%. When *P. promelas* were used as test organisms (November 2000 through April 2005 n=19 test events) the LC_{50} results were all $\geq$100% (TOXTD database). For the 21 valid chronic tests using *C. dubia*, the C-NOEC results ranged from 6.25 to 100% effluent. C-NOEC results using *P. promelas* ranged from 25 to 100% effluent (n=17 valid tests using lab water as diluent). These data indicate that whole effluent acute and chronic toxicity in this discharge has been vastly reduced compared to data reported between July 1995 and September 2000.

Between October 2000 and January 2006 whole effluent toxicity tests were conducted on the effluent (Outfall #001) from the MW Custom Papers WWTF at Willow Mill using *C. dubia (n*=22) and *P. promelas* (n=22). The LC_{50} results from the *C. dubia* tests were all $\geq$100%, except for one test event (January 2002, 71% effluent). The LC_{50} results using *P. promelas* were all $\geq$100% (TOXTD database). C-NOEC results using *C. dubia* ranged from 12.5 to 100% effluent. C-NOEC results using *P. promelas* ranged from <6.25 to 100% effluent (n=21 valid tests using lab water as diluent). The C-NOEC was <6.25% effluent for three of these tests (January 2002, January 2003, and April 2003). It should be noted that whole effluent acute and chronic toxicity in this discharge has been vastly reduced since the upgrades to the treatment plant were completed in 1998.

Whole effluent toxicity tests were conducted on the Stockbridge WWTP effluent between October 2004 and October 2005 using *C. dubia* and *P. promelas* as test organisms. The LC_{50}s for both test organisms were $\geq$ 100% effluent (n=3) (TOXTD database).

Chemistry-water
DWM sampled the water quality of this segment of the Housatonic River at three stations in 2002. Station 19A was located ~360 feet upstream from Valley St. and downstream from the Lenox WWTP discharge. Station 19C was located ~300 feet downstream from Lee WWTP in Lee. Station 19E was located

upstream from railroad bridge, east of Rte. 183 in Stockbridge. *In-situ* sampling was conducted to measure dissolved oxygen, temperature, pH, and conductivity during pre-dawn hours.

Water quality conditions at Station 19A generally met criteria. High phosphorous concentrations were recorded on 3 of 4 visits (concentrations ranging from 0.04 to 0.19 mg/L).

Water quality conditions at Station 19C were generally poor (low DO/saturation, extremely high concentrations of both total phosphorous and ammonia-nitrogen). Two of the five ammonia-nitrogen measurements were above toxic levels (4.48 and 5.72 mg/L). Total phosphorous levels at Station 19C were 2 to 5 times higher than levels measured upstream at 19A. However, water quality data collected downstream from the Lee treatment plant at Station 19C were collected on the same bank as the effluent discharge. Despite being 300 feet below the outfall, it is likely that these samples are not representative of a fully mixed effluent at this point in the river. [Note: The concentration of ammonia in the Lee WWTP effluent reported by the facility in their monthly discharge monitoring reports (DMRs) between May and September 2002 ranged from 7.7 to 22 mg/L. The monthly average concentration of total phosphorous ranged from 0.52 to 1.7 mg/L, and the maximum total phosphorous concentration measured was 6.3 mg/L. The total phosphorus concentrations in the Schweitzer-Mauduit WWTP effluent reported by the facility in their monthly DMRs between May and September 2002 ranged from 0.02 to 1.0 mg/L, although the discharge from this facility is approximately four times greater than the Lee WWTP effluent.]

Continuous *in-situ* temperature monitoring was conducted from the 25th of July through the 28th of August, 2002, behind HVA offices on Route 102 in Lee (Appendix H). In-stream temperatures ranged from 19.2-27.0 ºC. The mean temperature over this 35-day period was 22.3 ºC.

USGS also collected discrete water samples from the Housatonic River near Glendale on 18 September 2003 (USGS 2006b). Water quality collected by USGS at this station was similar to conditions observed by DWM at Station 19E in 2002. Phosphorous was recorded as 0.05 mg/L.

Water quality conditions at Station 19E generally met criteria, with the exception of high phosphorous levels collected on 3 of 4 visits.

Chemistry- sediment

Blasland, Bouck & Lee, Inc. and Quantitative Environmental Analysis, LLC. prepared a 2003 report for the General Electric Company detailing the extent of PCB contamination in Housatonic River sediments (BBL 2003). This report was based upon sediment cores collected by the EPA and BBL/GE between 1997 and 2002. Study reaches 7 and 8 as described in this report are located within Segment MA21-19. Study Reach 7 is defined as the river section from downstream of Woods Pond Dam to the upstream extent of Rising Pond. Study Reach 8 is defined as Rising Pond from its upstream extent to the Risingdale impoundment dam.

Concentrations of PCBs and total organic carbon (TOC) measured in the top 6 inches of sediment within reaches of this segment of the Housatonic River are summarized below (BBL 2003 as summarized by Poach and Kurpaska 2006). The numbers (n) of cores analyzed to produce the results appear in parentheses after the reach designation.

Reach	Sediment PCB Concentration in 0 - 6 inch layer (mg/kg)			
(n)	Min	Max	Mean	Median
7 (198)	ND	38	1.8	0.28
8 (25)	ND	11	2.7	2.2

Reach	Sediment TOC Concentration in 0 - 6 inch layer (%)			
(n)	Min	Max	Mean	Median
7 (173)	ND	19	2.1	1.8
8 (27)	ND	5.3	2.4	2.4

Since minimum TOC levels were listed as non-detectable, the median TOC concentrations were used to calculate the S-EL and make this a conservative estimate of the level of PCB toxicity. The mean PCB sediment concentrations within these reaches did not exceed the PCB S-EL. Maximum PCB sediment concentrations did not exceed the total PCB S-EL based upon the maximum TOC levels (Persaud et al 1993).

Chemistry- fish tissue

Weston Solutions, Inc. prepared a 2004 report for the Army Corps of Engineers and the U.S. Environmental Protection Agency detailing the extent of PCB contamination in fish tissue from fish caught in the Housatonic River (Weston 2004). This report is based upon fish collected by the EPA between 1998 and 2002. Reaches 7 and 8 are located within Segment MA 21-19.

Concentrations of PCB in fish collected from reaches within Housatonic River Segment 21-19 appear below (Weston 2004 as summarized by Poach and Kurpaska 2006). The numbers of fish analyzed to produce the results appear in parentheses after the fish name.

Composite concentrations of PCB in young of the year fish in 2002

	Young of Year tPCB (µg/kg w/w)		
Reach	Min	Max	Fish Sampled
7	2,000	4,200	largemouth bass (7), bluegill (3), pumpkinseed (4)

Whole body concentrations of PCB in fish

Segment	Whole Body tPCB (µg/kg w/w)		
Reach	Min	Max	Fish Sampled
8	12,800	41,500	largemouth bass (14)

Composite concentrations of PCB in fish

Segment	Composite tPCB (µg/kg w/w)		
Reach	Min	Max	Fish Sampled
8	8,080	11,200	largemouth bass (5), pumpkinseed (5), yellow perch (5)

All of the whole fish samples analyzed for total PCB exceeded (by between 4 and 83 times) the NAS/NAE guideline for the protection of fish eating wildlife (500µg/kg wet weight).

The *Aquatic Life Use* is assessed as impaired for this reach based upon high levels of PCB contamination in whole fish exceeding the NAS/NAE guideline for the protection of fish eating wildlife. PCB contamination of surficial sediments was greatly reduced within this reach when compared to sediments upstream. Water quality data indicate nutrient enrichment affects in the upper half of this reach (the upper 9.2 miles). Nutrient inputs from point sources (municipal and industrial) and non-point source runoff exacerbated by impoundments and other upstream sources all likely contribute to this condition. Although the RBP III analyses of benthic communities at three stations in this reach show either slight or no impacts and fish communities appear normal for a warm water fish community, the frequent poor survival of *P. promelas* exposed to river water upstream from the MW Custom Papers WWTF Laurel Mill and Willow Mill is of concern. Acute and/or chronic whole effluent toxicity has been greatly reduced in the MW Custom Papers WWTF Laurel and Willow Mill effluents, although it is still occasionally present. Whole effluent toxicity in the Schweitzer-Mauduit WWTP effluent is also of concern.

FISH CONSUMPTION

Weston Solutions, Inc. prepared a 2005 report for the Army Corps of Engineers and the U.S. Environmental Protection Agency detailing the extent of PCB contamination in fish fillets from fish caught in the Housatonic River. The mean total PCB concentrations in fish fillets collected in Rising Pond were reported as follows: bass 3.8, bullhead 4.5, perch 8.2, and sunfish 2.9 mg/kg wet weight (Weston 2005).

In 1982 the Massachusetts Department of Public Health (MA DPH) issued a fish consumption advisory for the Housatonic River because of PCB contamination associated with the General Electric site. The MA

DPH advisory recommends: "*The general public should not consume any fish, frogs, or turtles from Housatonic River in the towns of Dalton, Pittsfield, Lenox, Lee, Stockbridge, Great Barrington, and Sheffield".*

Due to the MA DPH site-specific fish consumption advisory the *Fish Consumption Use* is assessed as impaired for the entire 19.9 miles of this segment because of PCB levels in edible fish tissue.

PRIMARY CONTACT RECREATION, SECONDARY CONTACT RECREATION AND AESTHETICS
DWM collected fecal coliform bacteria samples from this segment of the Housatonic River at water quality stations 19A, 19C, and 19E (Appendix B). The geometric mean of five samples collected at the upstream station, 19A, was 77 cfu/100mL. One bacteria sample did exceed 400 cfu/mL (1300 cfu/mL). Further downstream at Station 19C (300 feet below the Lee WWTP), the geometric mean of five samples was 979 cfu/100mL. Three samples collected at this station exceeded 400 cfu/mL. None of the five samples collected at the most downstream station, 19E, exceeded 70 cfu/mL.

HVA volunteers conducted a shoreline survey within this segment of the Housatonic River from the dam at Woods Pond in Lenox to the Willow Mill Dam in South Lee in May of 2001. At the impoundment created by the Schweitzer-Mauduit dam, the river was described as weedy with occasional patches of milfoil. Multiple stormwater pipes were noted. The majority of this segment was described as beautiful with few signs of human disturbance (HVA 2001).

DWM biologists noted moderate to dense filamentous green and brown algae covered the rock substrates at Station 19A (~360 feet upstream from Valley St. and downstream from the Lenox WWTP discharge) (MassDEP 2002b). DWM personnel also made field observations during the surveys conducted between May and September 2002. At Station 19A water clarity was generally clear and no scum was noted. Generally, no water odor was noted, but on two occasion an odor was recorded (septic and chlorine, respectively. With the exception of one occasion where trash was noted, objectionable deposits were not noted (MassDEP 2002a).

There was a "septic" odor coming from the water at Station 19C (~300 feet downstream from Lee WWTP in Lee), and dense algal growth on both the submerged plants and rocks (MassDEP 2002b). No objectionable deposits or scum were noted, but a septic water odor was noted on all occasions. Water clarity was generally clear (MassDEP 2002a).

HVA volunteers also conducted a shoreline survey of the Housatonic River from the Willow Mill Dam in South Lee to the Risingdale dam in Great Barrington in May of 2002 (HVA 2002a). Volunteers noted that immediately downstream from the Willow Mill Dam riffles and pools contain heavy algae growth. A grey slippery clay-like material was observed in weeds below two pipes in the same areas. Red and blue stains were seen below the mill on the river bottom soil. Garbage was noted in isolated areas throughout the segment.

Above the Glendale Dam there was an influx of duckweed. An "alluvial fan of sand" was deposited at a stormwater pipe outfall from Route 183. Algae and an oily sheen were noted in the cove just downstream from the discharge. Numerous other pipes were also reported. Overall, however, this section was described as attractive and appeared to be healthy (HVA 2002a).

The river moves swiftly at Station 19E (upstream from the Railroad bridge, east of Rte. 183 in Stockbridge). The water had a slightly musty odor and moderate amounts of filamentous green algae covered many of the rocks (MassDEP 2002b). Water clarity was generally clear and no scums were noted. Generally, no objectionable deposits were noted, but on two occasions slight deposits of trash were observed. Out of ten visits, on three occasions a musty odor was recorded and on one occasion a pulp mill smell was recorded (MassDEP 2002a).

Weston Solutions, Inc. prepared a 2005 report entitled "Human Health Risk Assessment GE/Housatonic River Site, Rest of River" for the U.S. EPA and U.S. Army Corps of Engineers (Weston 2005). In this study, total hazard index values calculated for reasonable maximum exposure to sediment within Housatonic River reach 7, located within segment MA21-19, were shown to fall below the EPA non-

cancer hazard level of 1.0. Total hazard index values calculated for the central tendency exposure to sediment within this segment were all less than the EPA non-cancer hazard level of 1.0.

The *Primary Contact Recreation*, *Secondary Contact Recreation* and *Aesthetics* uses are assessed as impaired for the upper 9.2 mile reach of this segment, based primarily upon the excess algal growth observed in the river. It is BPJ that the high bacteria counts measured at Station 19C, though concerning, are not representative of the entire river in that section and most likely reflect the Lee WWTP effluent quality. The *Primary Contact Recreation*, *Secondary Contact Recreation* and *Aesthetics* uses are assessed as support downstream from the Willow Mill dam (the lower 10.7 miles of this segment). This is based upon the water quality, lack of elevated bacteria counts, acceptable cancer risk assessment values, and field observations of DWM personnel and HVA volunteers.

HOUSATONIC RIVER (Segment MA21-19) Use Summary

Designated Uses		Status
Aquatic Life		IMPAIRED Cause: PCBs in whole fish and sediment, elevated total phosphorus in upper 9.2 miles of segment Source: inappropriate waste disposal from General Electric Site for PCB contamination Suspected source: Nutrient inputs from point sources (municipal and industrial) and non-point source runoff exacerbated by impoundments and other upstream sources
Fish Consumption		IMPAIRED Cause: PCBs Source: inappropriate waste disposal from General Electric Site
Primary Contact		IMPAIRED Upper 9.2 mile reach Cause: Objectionable algal growth Source: Unknown Suspected source: Nutrient inputs from point sources (municipal and industrial) and non-point source runoff exacerbated by impoundments and other upstream sources SUPPORT lower 10.7 mile reach
Secondary Contact		IMPAIRED Upper 9.2 mile reach Cause: Objectionable algal growth Source: Unknown Suspected source: Nutrient inputs from point sources (municipal and industrial) and non-point source runoff exacerbated by impoundments and other upstream sources SUPPORT lower 10.7 mile reach
Aesthetics		IMPAIRED Upper 9.2 mile reach Cause: Objectionable algal growth Source: Unknown Suspected source: Nutrient inputs from point sources (municipal and industrial) and non-point source runoff exacerbated by impoundments and other upstream sources SUPPORT lower 10.7 mile reach

RECOMMENDATIONS

Stressors resulting in the “slightly impacted” conditions observed at Station 19A in 2002 likely can be traced to the effects from Woods Pond and, potentially, the Lenox WWTP. While the extensive wetlands in Woods Pond may be a natural condition, upstream / downstream water quality monitoring should be performed to determine if any effect is occurring as a result of the operation of the Lenox WWTP.

More benthic community study is needed, with more locations (particularly bracketing the NPDES discharges and potential nonpoint sources), to determine if the benthic community is indeed slightly or

non-impacted as the three 2002 stations indicate. Consider bracketing more of the point source discharges with water quality stations to define nutrient inputs into the system (total phosphorous loads especially).

More bacteria sampling stations (both banks, and farther down) are required downstream from Lee to better evaluate uses within that stretch of the river.

The Lee WWTP effluent does not appear to be readily mixing with the river water as evidenced by the poor water quality observed at Station 19C. Investigate mixing zone of discharge under various flow conditions and how far downstream this condition may persist.

Investigate the correlation between the discharge from the Lee WWTP and/or run-off from the town of Lee and the impairment of the benthic community at Station 19C.

Evaluate the results of the flow study in the bypass reach of the Glendale Hydroelectric Project and make appropriate recommendations to protect aquatic life in the bypass reach of the project.

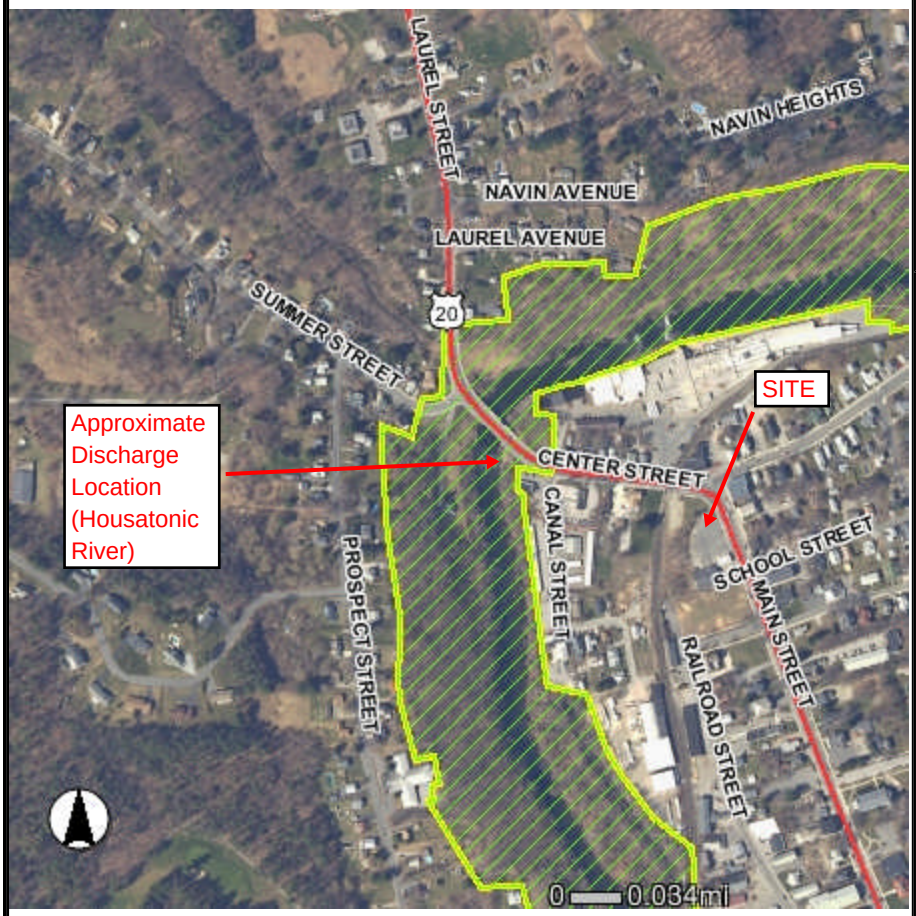
Because of the frequency of the reduced survival of *P. promelas* in the Housatonic River downstream from the Lee WWTP discharge, additional in-stream studies (ambient chronic toxicity testing) should be conducted. If significant chronic toxicity is detected, determine cause(s) and source(s) of in-stream toxicity.

Investigate the sources/causes of the chronic and acute toxicities observed in the Schweitzer-Mauduit WWTP effluent, particularly during the month of March.

ATTACHMENT V

NHESP 2008 ESTIMATED HABITAT FOR RARE WILDLIFE AND PRIORITY HABITATS FOR STATE-PROTECTED RARE SPECIES MAP

2008 Priority Habitat and Estimated Habitat Natural Heritage & Endangered Species Program



Legend

EOT-OTP Roads Names

EOT-OTP Roads

Limited Access Highway

Multi-lane Hwy, Not Limited Access

Other Numbered Hwy

NHESP 2008 Priority Habitats of Rare Species and also Estimated Habitats of Rare Wildlife

NHESP 2008 MA Priority Habitats of Rare Species

Color Orthos 2005

ATTACHMENT VI

MACRIS DATABASE SEARCH RESULTS

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Lee; Street Name: Center; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
LEE.902	Center Street Bridge	Center St	Lee	1925
LEE.923	Teddy Bear Park Memorial	Center St	Lee	1996
LEE.185	Norton, Thomas Block	85 Center St	Lee	1902
LEE.62	Fish, W. T. House	118 Center St	Lee	1840
LEE.186	Sparks, A. C. House	145 Center St	Lee	1840
LEE.187	Richmond, Henry N. House	159 Center St	Lee	1840

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Lee; Street Name: Main; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
LEE.173	Hurlbut Paper Company Office Building	Main St	Lee	1825
LEE.917	Boulder To World War I Heroes, The	Main St	Lee	1921
LEE.920	Davis, Joseph - Burt, Thomas Monument	Main St	Lee	
LEE.1	Wellington, Smith House	3 Main St	Lee	1830
LEE.2	Park Building	15 Main St	Lee	1914
LEE.13	Memorial Town Hall	32 Main St	Lee	1874
LEE.3	Porter, William House	33 Main St	Lee	1817
LEE.12	Baird and Benton Block	40 Main St	Lee	1875
LEE.4	Pease Block - Pease Drugstore	43 Main St	Lee	1850
LEE.5	Lee National Bank	47 Main St	Lee	1835
LEE.11	Phelan Block	50 Main St	Lee	1916
LEE.10	Oman Block - Oman Drugstore	52 Main St	Lee	1880
LEE.9	Morey Block	56 Main St	Lee	1879
LEE.6	Northrup Block	57 Main St	Lee	1856
LEE.19	Gleaner Block	61 Main St	Lee	1894
LEE.8	Baird Block	62 Main St	Lee	1857
LEE.20	Quackenbush Building	63 Main St	Lee	1876
LEE.21	Dolan Block	71 Main St	Lee	1856
LEE.22	Markham Block	73 Main St	Lee	1898
LEE.24	Graham, R. F. House	93 Main St	Lee	1897
LEE.23	Markham, George House	95 Main St	Lee	1894
LEE.7	Lee Library	100 Main St	Lee	1907
LEE.31	Rambo, Jane House	117 Main St	Lee	1907
LEE.25	Thatcher, Eliel House	119 Main St	Lee	1830
LEE.32	Bossidy, Patrick Block	124-130 Main St	Lee	1869
LEE.33	Saint Mary's Roman Catholic Church	129 Main St	Lee	1856
LEE.26	Heaphy, Thomas Block	139 Main St	Lee	1879

Inv. No.	Property Name	Street	Town	Year
LEE.27	Heebner, Edmund House	145 Main St	Lee	1859
LEE.34	Gibbs, Nathan House	150 Main St	Lee	1841
LEE.28	Wakefield, Chester House	151 Main St	Lee	1830
LEE.29	Bassett, Nathaniel House	171 Main St	Lee	1827
LEE.35	Rogers, Edward House	176 Main St	Lee	1897
LEE.36	Bean, Benjamin House	184 Main St	Lee	1840
LEE.30	Lee Central Fire Station	195 Main St	Lee	1912
LEE.37		196 Main St	Lee	1840
LEE.56	Saint Mary's Parochial School	199 Main St	Lee	1885
LEE.38	Davis, William House	208 Main St	Lee	1830
LEE.39	Heaphy House	218 Main St	Lee	1840
LEE.45	Platner, George House	223 Main St	Lee	1833
LEE.40		232 Main St	Lee	1850
LEE.41	Little - Tristany House	238 Main St	Lee	1850
LEE.42	Casey, J. H. House	244 Main St	Lee	1896
LEE.43	Casey Block	252 Main St	Lee	1897
LEE.44	Nolan Block	264 Main St	Lee	1914