



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 1

**5 Post Office Square, Suite 100
BOSTON, MA 02109-3912**

CERTIFIED MAIL

MAR 28 2011

Nicholas Murdock
Environmental Scientist
Environmental Compliance Services, Inc.
997 Millbury Street, Unit G
Worcester, MA 01607

Re: Authorization to discharge under the Remediation General Permit (RGP) –
MAG910000. Gulf Station, site located at 289 Main Street Acton, Massachusetts,
Middlesex County; Authorization # MAG910477.

Dear Mr. Murdock:

Based on the review of a Notice of Intent (NOI) submitted on behalf of Cumberland Farms Inc. (CFI) by the firm you represent Environmental Compliance Services (ECS), 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 on the list are dilution dependent pollutants and subject to limitations based on a dilution factor range (DFR). Due to the limited dilution since this discharge is to a wetland, EPA determined that the DFR for each parameter is in the

one to five (1-5) range. (See the RGP Appendix IV for Massachusetts facilities)
Therefore, the limits for nickel of 29ug/L, and iron of 1,000ug/L, are required to achieve permit compliance at your site.

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 requirements.

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on April 25, 2011. 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:		MAG910477
Date Authorization Issued:	March, 2011	
Facility/Site Name:	Gulf Station	
Facility/Site Address:	Site located at 289 Main Street Acton, Massachusetts, Middlesex County	
Legal Name of Operator:	Environmental Compliance Services, Inc.	
Operator contact name, title, and Address:	Nicholas Murdock, Environmental Scientist, 997 Millbury Street, Unit G, Worcester, MA 01607	
	Email :nmurdock@ecsconsult.com	
Estimated Date of Completion:	April 25, 2011	
Category and Sub-Category:	Activity I. Petroleum Related Site Remediation. Sub-category B. Fuel Oils and Other Oils Sites	
Receiving Water:	Wetlands to Cold Brook	

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

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (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

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l/Me#8260C/ML 10ug/L
	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

	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)
✓	c. Benzo(b)Fluoranthene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
✓	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/ML 5ug/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/ML 5ug/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		Minimum level=ML
		Freshwater	Saltwater	
	39. Antimony	5.6/ML 10		
	40. Arsenic **	10/ML 20	36/ML 20	
	41. Cadmium **	0.2/ML 10	8.9/ML 10	
	42. Chromium III (trivalent)	48.8/ML 15	100/ML 15	

	Metal parameter	Total Recoverable Metal Limit @ H¹⁰ = 50 mg/l CaCO₃ for discharges in Massachusetts (ug/l) 11/12		Minimum level=ML	
		Freshwater	Saltwater		
	**				
	43. Chromium VI (hexavalent) **	11.4/ML10	50.3/ML 10		
	44. Copper **	5.2/ML15	3.7/ML 15		
	45. Lead **	1.3/ML20	8.5/ML 20		
	46. Mercury **	0.9/ML0.2	1.1/ML 0.2		
✓	47. Nickel **	29/ML20	8.2/ML 20		
	48. Selenium **	5/ML20	71/ML 20		
	49. Silver	1.2/ML10	2.2/ML 10		
	50. Zinc **	66.6/ML15	85.6/ML 15		
✓	51. Iron	1,000/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.

⁹Although 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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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 on the list are dilution dependent pollutants and subject to limitations based on a dilution factor range (DFR). Due to the limited dilution since this discharge is to a wetland, EPA determined that the DFR for each parameter is in the

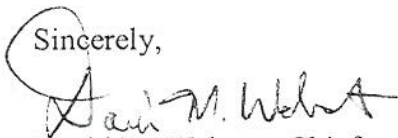
one to five (1-5) range. (See the RGP Appendix IV for Massachusetts facilities)
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Operator contact name, title, and Address:	Nicholas Murdock, Environmental Scientist, 997 Millbury Street, Unit G, Worcester, MA 01607 Email :nmurdock@ecsconsult.com
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✓	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/ML 5ug/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/ML 5ug/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

	<u>Metal parameter</u>	<u>Total Recoverable Metal Limit @ H¹⁰ = 50 mg/l CaCO₃ for discharges in Massachusetts (ug/l)</u> 11/12		<u>Minimum level=ML</u>
		<u>Freshwater</u>	<u>Saltwater</u>	
	39. Antimony	5.6/ML 10		
	40. Arsenic **	10/ML 20	36/ML 20	
	41. Cadmium **	0.2/ML 10	8.9/ML 10	
	42. Chromium III (trivalent)	48.8/ML 15	100/ML 15	

	Metal parameter	<u>Total Recoverable Metal Limit @ H¹⁰ = 50 mg/l CaCO3 for discharges in Massachusetts (ug/l) 11/12</u>		<u>Minimum level=ML</u>	
		Freshwater	Saltwater		
	**				
	43. Chromium VI (hexavalent) **	11.4/ML10	50.3/ML 10		
	44. Copper **	5.2/ML15	3.7/ML 15		
	45. Lead **	1.3/ML20	8.5/ML 20		
	46. Mercury **	0.9/ML0.2	1.1/ML 0.2		
✓	47. Nickel **	29/ML20	8.2/ML 20		
	48. Selenium **	5/ML20	71/ML 20		
	49. Silver	1.2/ML10	2.2/ML 10		
	50. Zinc **	66.6/ML15	85.6/ML 15		
✓	51. Iron	1,000/ML 20			

	<u>Other Parameters</u>	<u>Limit</u>
✓	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.

⁹Although 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 $DF \times 1,000 \text{ ug/L}$ (the iron base limit). Therefore DF is 1.5, the iron limit will be 1,500 ug/L; DF 2, then iron limit = $1,000 \times 2 = 2,000 \text{ ug/L}$, 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



WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

997 Millbury Street, Unit G, Worcester, MA 01607 tel 508.756.0151 fax 508.757.7063 www.ecsconsult.com

March 11, 2011
Project No. 93-200000.00

Mr. Victor Alvarez
U.S. Environmental Protection Agency
EPA-Region 1
5 Post Office Square
Mail Code OEP06-4
Boston, MA 02109-3912

RE: Remediation General Permit: Notice of Intent
Gulf Station
289 Main Street
Acton, Massachusetts 01720

Dear Mr. Alvarez:

On behalf of Cumberland Farms Inc. (CFI), Environmental Compliance Services, Inc. (ECS) is submitting a Notice of Intent for the Remediation General Permit for the above referenced location.

If you have any questions or require additional information regarding this submittal, feel free to contact me at (508) 756-0151.

Sincerely,
ENVIRONMENTAL COMPLIANCE SERVICES, INC.

Nicholas O. Murdock
Environmental Scientist

cc: Christopher Johnson, Cumberland Farms, Inc., 100 Crossing Blvd, Framingham, MA 01702
Robert Kubit, MassDEP, Division of Watershed Management, 627 Main Street, Worcester, MA 01608
Paul Campbell, Town of Acton, Engineering Department, 427 Main Street, Acton, MA 01720
ECS Reimbursement File
ECS General File

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

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

a) Name of facility/site: Gulf Station		Facility/site mailing address:	
Location of facility/site: longitude: -71 27' 7.66" latitude: 42 28' 32.88"		Facility SIC code(s): 5541	Street: 289 Main Street
b) Name of facility/site owner: Cumberland Farms Inc.		Town: Acton	
Email address of facility/site owner: C.Johnson@cumberlandgulf.com		State: Massachusetts	Zip: 01720
Telephone no. of facility/site owner: 508-270-1400		County: Middlesex	
Fax no. of facility/site owner: 781-459-0454		Owner is (check one): 1. Federal ☐ 2. State/Tribal ☐	
Address of owner (if different from site):		3. Private ☒ 4. Other ☐ if so, describe:	
Street: 100 Crossing Boulevard			
Town: Framingham	State: MA	Zip: 01702	County: Middlesex
c) Legal name of operator: Environmental Compliance Services, Inc.		Operator telephone no: 508-756-0151	
		Operator fax no.: 508-757-7063	Operator email: nmurdock@ecsconsult.com
Operator contact name and title: Nicholas Murdock, Environmental Scientist			
Address of operator (if different from owner):		Street: 997 Millbury Street, Unit G	
Town: Worcester	State: MA	Zip: 01607	County: Worcester

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 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:													
f) Is the 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: 2. permit or license # assigned: 3. state agency contact information: name, location, and telephone 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. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%; text-align: left;">Activity Category</th> <th style="width: 70%; text-align: left;">Activity Sub-Category</th> </tr> </thead> <tbody> <tr> <td rowspan="3">I - Petroleum Related Site Remediation</td> <td>A. Gasoline Only Sites ☐</td> </tr> <tr> <td>B. Fuel Oils and Other Oil Sites (including Residential Non-Business Remediation Discharges) ☒</td> </tr> <tr> <td>C. Petroleum Sites with Additional Contamination ☐</td> </tr> <tr> <td rowspan="3">II - Non Petroleum Site Remediation</td> <td>A. Volatile Organic Compound (VOC) Only Sites ☐</td> </tr> <tr> <td>B. VOC Sites with Additional Contamination ☐</td> </tr> <tr> <td>C. Primarily Heavy Metal Sites ☐</td> </tr> <tr> <td rowspan="2">III - Contaminated Construction Dewatering</td> <td>A. General Urban Fill Sites ☐</td> </tr> <tr> <td>B. Known Contaminated Sites ☐</td> </tr> </tbody> </table>	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 ☐
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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) ☐
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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: The petroleum station is upgrading their underground storage tanks and the dewatering will be necessary to perform the upgrade. The discharge will be associated with the dewatering activities.																																	
b) Provide the following information about each discharge:																																	
1) Number of discharge points: 1	2) What is the maximum and average flow rate of discharge (in cubic feet per second, ft³/s)? Max. flow: 0.168 Is maximum flow a design value? Y ☐ N ☐ Average flow (include units) 0.117 cubic ft/s Is average flow a design value or estimate? Estimate																																
3) Latitude and longitude of each discharge within 100 feet: <table border="1"> <tr> <td>pt.1: lat</td> <td>42 28'34.73"</td> <td>long</td> <td>-71 27'6.79"</td> </tr> <tr> <td>pt.2: lat</td> <td></td> <td>long</td> <td></td> </tr> <tr> <td>pt.3: lat</td> <td></td> <td>long</td> <td></td> </tr> <tr> <td>pt.4: lat</td> <td></td> <td>long</td> <td></td> </tr> <tr> <td>pt.5: lat</td> <td></td> <td>long</td> <td></td> </tr> <tr> <td>pt.6: lat</td> <td></td> <td>long</td> <td></td> </tr> <tr> <td>pt.7: lat</td> <td></td> <td>long</td> <td></td> </tr> <tr> <td>pt.8: lat</td> <td></td> <td>long</td> <td></td> </tr> </table>		pt.1: lat	42 28'34.73"	long	-71 27'6.79"	pt.2: lat		long		pt.3: lat		long		pt.4: lat		long		pt.5: lat		long		pt.6: lat		long		pt.7: lat		long		pt.8: lat		long	
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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 03/28/2011 end 04/25/2011																																	
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). Flow schematic is attached.																																	

3. Contaminant information.

a) Based on the sub-category selected (see Appendix III), indicate whether 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)		☐	☒	1	grab	SM 2540D	5	51,000	20.86	51,000	13.91
2. Total Residual Chlorine (TRC)		☒	☐	1	grab	SM 4500	20	<20	0	<20	0
3. Total Petroleum Hydrocarbons (TPH)		☐	☒	1	grab	EPA 1664	5	55,000	22.50	55,000	15.00
4. Cyanide (CN)	57125	☒	☐	1	grab	EPA 9012B	10	<10	0	<10	0
5. Benzene (B)	71432	☐	☒	1	grab	EPA 8260B	250	800	0.33	800	0.22
6. Toluene (T)	108883	☐	☒	1	grab	EPA 8260B	250	13,000	5.32	13,000	3.55
7. Ethylbenzene (E)	100414	☐	☒	1	grab	EPA 8260B	250	11,000	4.50	11,000	3.00
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☐	☒	1	grab	EPA 8260B	250	62,000	25.36	62,000	16.91
9. Total BTEX ²	n/a	☐	☒	1	grab	EPA 8260B	250	86,800	35.51	86,800	23.67
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) ³	106934	☐	☒	1	grab	EPA 8011	0.02	0.05	0	0.05	0
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐	1	grab	EPA 8260B	10,000	<10,000	0	<10,000	0

* 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 Minimum 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.

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
13. tert-Amyl Methyl Ether (TAME)	9940508	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
14. Naphthalene	91203	☐	☒	1	grab	EPA 8260B	250	3,100	1.27	3,100	0.85
15. Carbon Tetrachloride	56235	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
18a. Total dichlorobenzene		☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
19. 1,1 Dichloroethane (DCA)	75343	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
20. 1,2 Dichloroethane (DCA)	107062	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
21. 1,1 Dichloroethene (DCE)	75354	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
22. cis-1,2 Dichloroethene (DCE)	156592	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
23. Methylene Chloride	75092	☒	☐	1	grab	EPA 8260B	1,300	<1,300	0	<1,300	0
24. Tetrachloroethene (PCE)	127184	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
27. Trichloroethene (TCE)	79016	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0

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	☒	☐	1	grab	EPA 8260B	250	<250	0	<250	0
29. Acetone	67641	☒	☐	1	grab	EPA 8260B	5,000	<5,000	0	<5,000	0
30. 1,4 Dioxane	123911	☒	☐	1	grab	EPA 8260B	250,000	<250,000	0	<250,000	0
31. Total Phenols	108952	☒	☐	1	grab	EPA 8270C	200	<200	0	<200	0
32. Pentachlorophenol (PCP)	87865	☒	☐	1	grab	EPA 8270C	200	<200	0	<200	0
33. Total Phthalates (Phthalate esters) ⁴		☒	☐	1	grab	EPA 8270C	120	<120	0	<120	0
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐	1	grab	EPA 8270C	120	<120	0	<120	0
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	grab	EPA 8270C	20	<20	0	<20	0
a. Benzo(a) Anthracene	56553	☒	☐	1	grab	EPA 8270C	20	<20	0	<20	0
b. Benzo(a) Pyrene	50328	☒	☐	1	grab	EPA 8270C	20	<20	0	<20	0
c. Benzo(b)Fluoranthene	205992	☒	☐	1	grab	EPA 8270C	20	<20	0	<20	0
d. Benzo(k)Fluoranthene	207089	☒	☐	1	grab	EPA 8270C	20	<20	0	<20	0
e. Chrysene	21801	☒	☐	1	grab	EPA 8270C	20	<20	0	<20	0
f. Dibenzo(a,h)anthracene	53703	☒	☐	1	grab	EPA 8270C	20	<20	0	<20	0
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐	1	grab	EPA 8270C	20	<20	0	<20	0
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☐	☒	1	grab	EPA 8270C	40	1,400	0.57	1,400	0.38

⁴ The sum of individual phthalate compounds.

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	☒	☐	1	grab	EPA 8270C	40	<40	0	<40	0
i. Acenaphthylene	208968	☒	☐	1	grab	EPA 8270C	40	<40	0	<40	0
j. Anthracene	120127	☒	☐	1	grab	EPA 8270C	40	<40	0	<40	0
k. Benzo(ghi) Perylene	191242	☒	☐	1	grab	EPA 8270C	40	<40	0	<40	0
l. Fluoranthene	206440	☒	☐	1	grab	EPA 8270C	40	<40	0	<40	0
m. Fluorene	86737	☐	☐	1	grab	EPA 8270C	40	<40	0	<40	0
n. Naphthalene	91203	☐	☒	1	grab	EPA 8270C	40	<40	0	<40	0
o. Phenanthrene	85018	☒	☐	1	grab	EPA 8270C	40	1,400	0.57	1,400	0.38
p. Pyrene	129000	☒	☐	1	grab	EPA 8270C	40	<40	0	<40	0
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐	1	grab	EPA 8082	0.2	<0.2	0	<0.2	0
	38. Chloride	☒	☐								
	39. Antimony	☒	☐	1	grab	EPA 6020A	60	<60	0	<60	0
	40. Arsenic	☒	☐	1	grab	EPA 6020A	10	<10	0	<10	0
41. Cadmium	744039	☒	☐	1	grab	EPA 6020A	4	<4	0	<4	0
42. Chromium III (trivalent)	16065831	☒	☐	1	grab	EPA 6020A	10	<10	0	<10	0
43. Chromium VI (hexavalent)	18540299	☒	☐	1	grab	EPA 7196A	10	<10	0	<10	0
44. Copper	7440508	☒	☐	1	grab	EPA 6020A	25	<25	0	<25	0
45. Lead	7439921	☒	☐	1	grab	EPA 6010B	5	<5	0	<5	0
46. Mercury	7439976	☒	☐	1	grab	EPA 7470A	0.2	<0.2	0	<0.2	0
47. Nickel	7440020	☒	☐	1	grab	EPA 6020A	40	<40	0	<40	0
48. Selenium	7782492	☒	☐	1	grab	EPA 6020A	50	<50	0	<50	0
49. Silver	7440224	☒	☐	1	grab	EPA 6020A	7	<7	0	<7	0
50. Zinc	7440666	☒	☐	1	grab	EPA 6020A	50	<50	0	<50	0
51. Iron	7439896	☐	☒	1	grab	EPA 6010B	100	20,000	8.18	20,000	5.45
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)
2-methylnaphthalene	91-57-6	☐	☒	1	grab	EPA 8270C	40	1,700	0.70	1,700	0.46
		☐	☐								

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

<i>Step 1:</i> 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 ☐ <i>Step 2:</i> 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: Iron DF 1.02 Metal: _____ DF _____ Metal: _____ DF _____ Metal: _____ DF _____ Etc.	If yes, which metals? Iron 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 water from the UST excavation will be pumped into a fractionalization tank for settling, then through two (2) bag filter units in parallel, two (2) 1,000lb liquid granular activated carbon vessels, one (1) Greensand Filter for iron removal, and a flowmeter prior to discharge. The system will discharge to an on-site storm water drain which empties into an unnamed wetlands located across the street (Main Street) from the Site.

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): Greensand Filter for iron removal.		

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 gpm Maximum flow rate of treatment system gpm
Design flow rate of treatment system gpm

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

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: The on-site storm drain discharges to an unnamed wetlands which drains to Coles Brook, then Fort Pond Brook, then Warners Pond, then Assabet 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 discharges, 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 Class B					
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.00406 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)?					
Is there a final TMDL? Y ☐ N ☒ If yes, for which pollutant(s)?					

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.

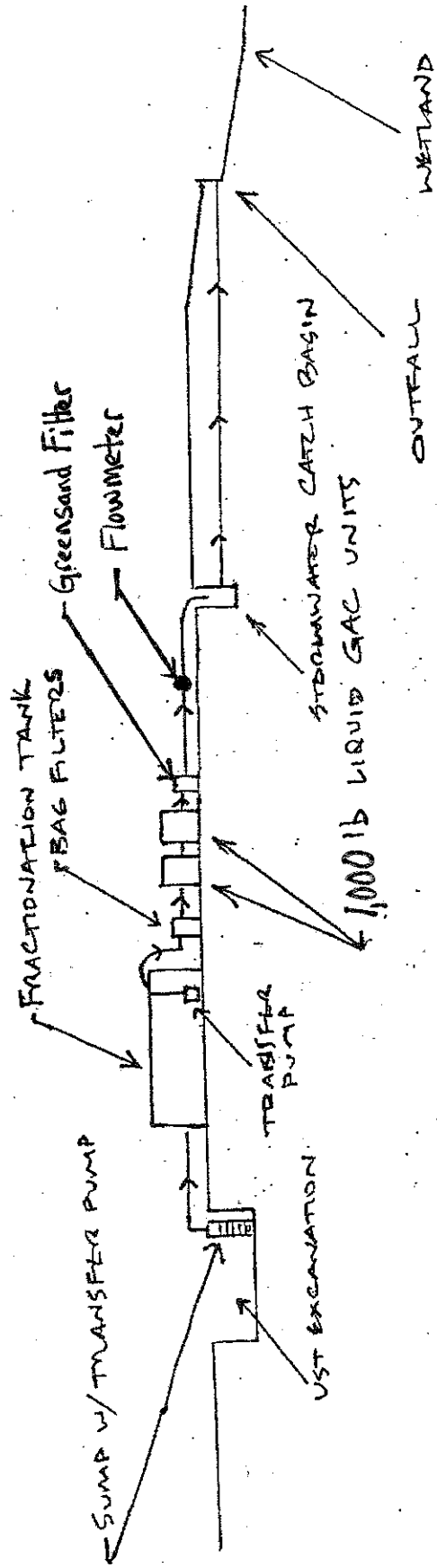
In regards to the ESA eligibility, when consulting the U.S. Fish and Wildlife Service, an endangered species, Sandplain Gerardia, was listed as present within Middlesex County. Upon further review of the Massachusetts Division of Fisheries & Wildlife website, it was found that this plant is not listed as being present in the town of Acton. Also no other endangered species are listed as being present within Acton. The MassGIS 2008 Priority Habitat and Estimated Habitat Natural Heritage and Endangered Species Program Map was reviewed and there are no areas of priority or estimated habitats of rare species in the areas surrounding the Gulf Station and unnamed wetlands associated with the proposed discharge. Sandplain Gerardia is also listed as growing in dry, sandy short grass cemetery and a dry grasslands of Massachusetts. The area in proximity to the proposed discharge outfall does not exhibit this type of habitat and the wetlands habitat found here would not be suitable for the growth of Sandplain Gerardia. Therefore, it was determined that Criterion A in Section 6 (a) was applicable.

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:	Gulf Station, Acton, Massachusetts
Operator signature:	
Printed Name & Title:	Nicholas O. Murdock, Environmental Scientist
Date:	

Flow Schematic



Legend

- Approximate Property Line
- ATC BURNING
- DEEP MONITORING WELL
- MONITORING WELL
- SOIL BORING
- TANK FIELD WELL
- MAN-HOLE
- SOIL VAPOR MONITORING POINT
- CATCH BASIN
- FENCE LINE
- WATER LINE
- UNDERGROUND STORAGE TANK

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.
 Site Plan based on information from Geologic Services Corporation, dated 7/15/03, and the Town of Acton Assessor's records.



EXXON DIV. CFI FACILITY #70000
 289 MAIN STREET
 ACTON, MASSACHUSETTS

SITE PLAN

CUMBERLAND FARMS, INC.

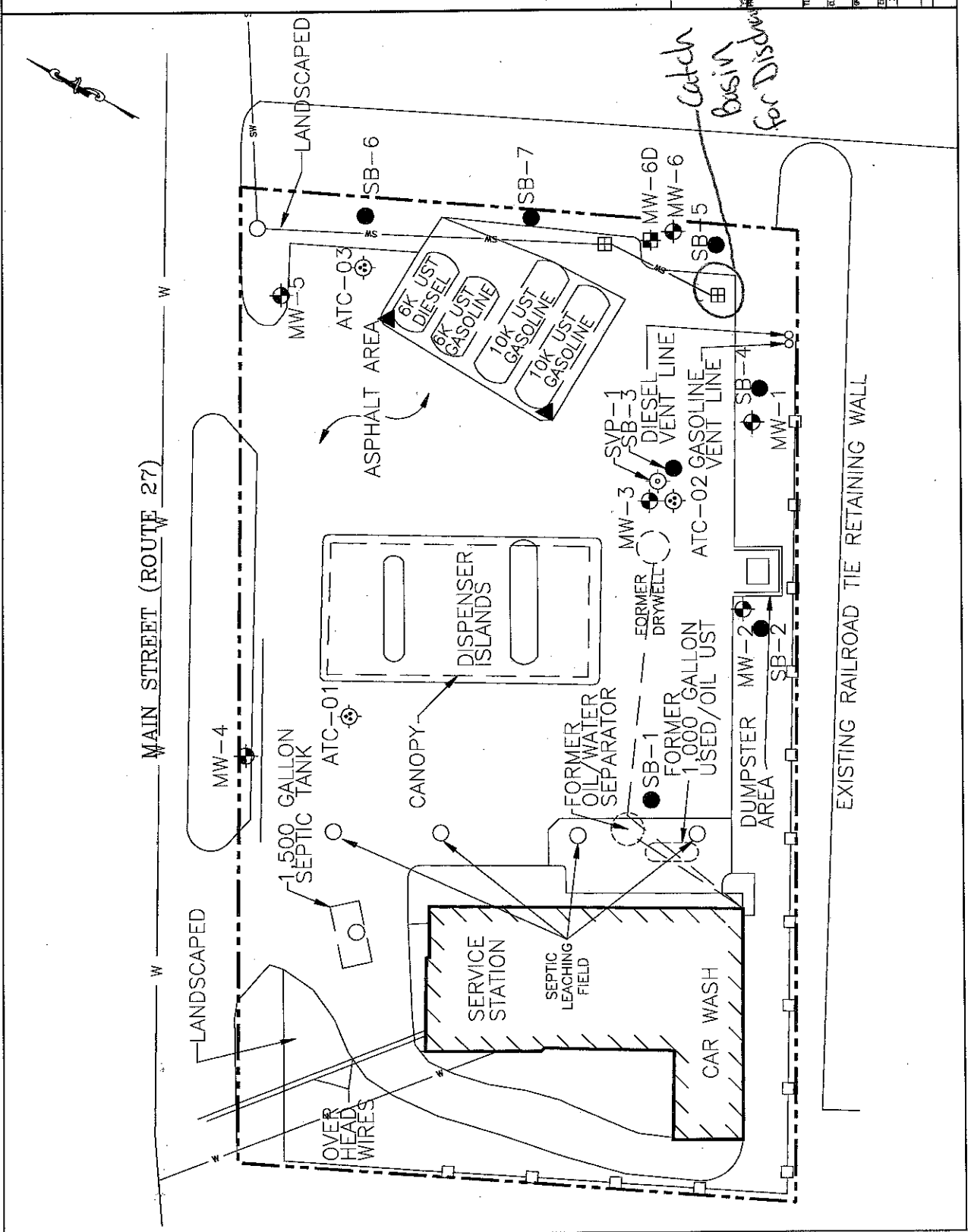
GRAPHIC SCALE

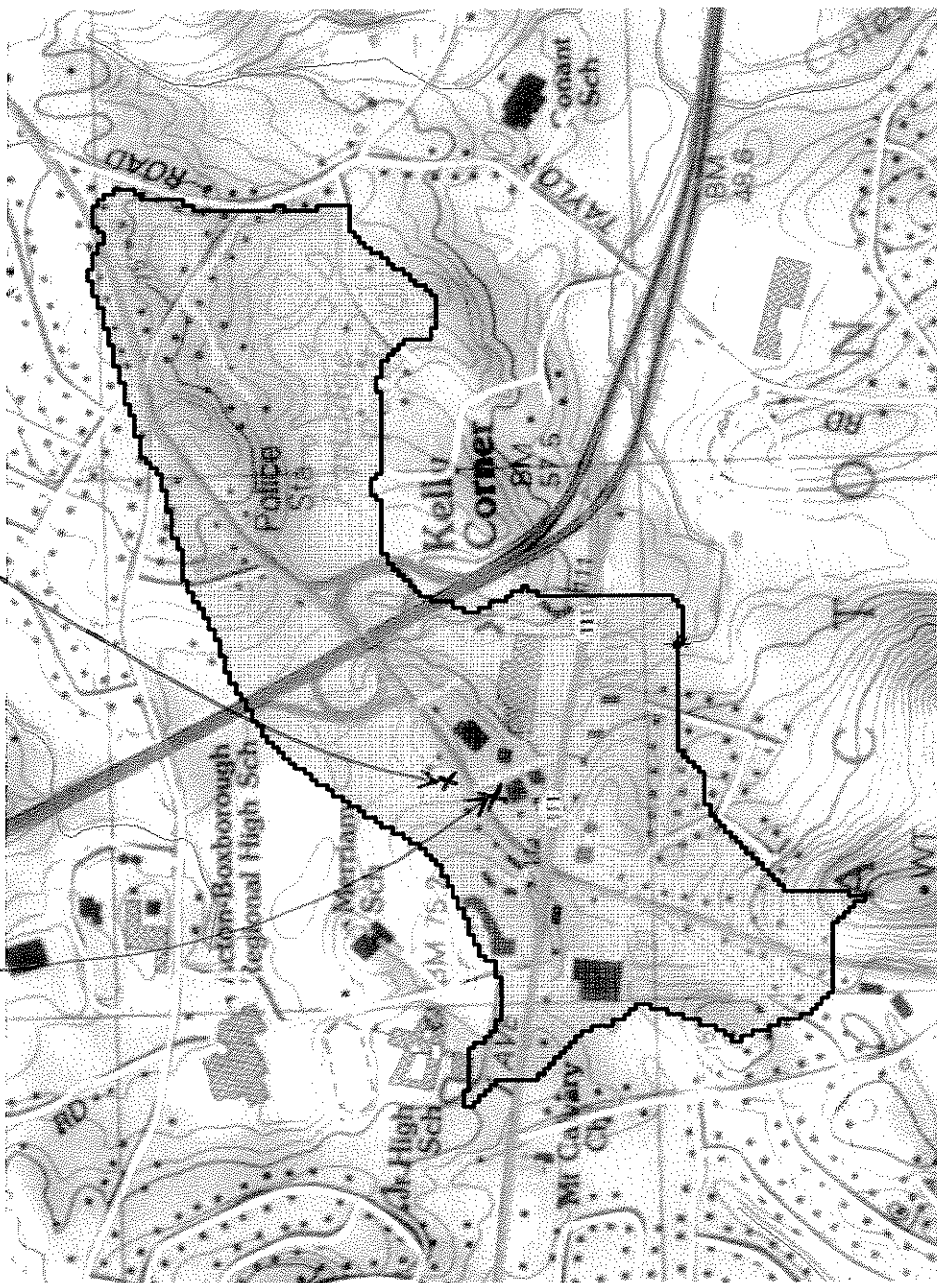
LEGEND

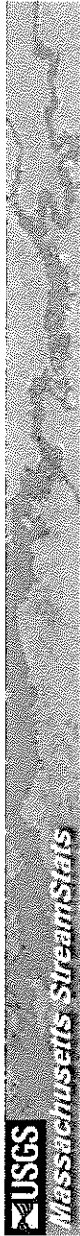
DESIGNED BY: CHECKED BY: APPROVED BY:

DATE: JAN, 2005

FIGURE NO. 2







Basin Characteristics Report

Date: Tue Feb 15 2011 09:23:18 Mountain Standard Time
NAD27 Latitude: 42.4725 (42 28 21)
NAD27 Longitude: -71.4490 (-71 26 56)
NAD83 Latitude: 42.4726 (42 28 21)
NAD83 Longitude: -71.4485 (-71 26 55)
ReachCode: 01070005000415
Measure: 99.04

Parameter	Value
Area in square miles	0.36
Average area slope in percent	1.81
Total stream length in miles	0.00991
stratified drift per unit stream length	0.0701
low flow region Indicator for Massachusetts	0
Area of forest land (percent)	27.77
Area of sand and gravel deposits (percent)	0.19



Streamstats Ungaged Site Report

Date: Tue Feb 15 2011 09:23:42 Mountain Standard Time
Site Location: Massachusetts
NAD27 Latitude: 42.4725 (42 28 21)
NAD27 Longitude: -71.4490 (-71 26 56)
NAD83 Latitude: 42.4726 (42 28 21)
NAD83 Longitude: -71.4485 (-71 26 55)
Reach Code: 01070005000415
Measure: 99.04
Drainage Area: 0.36 mi²

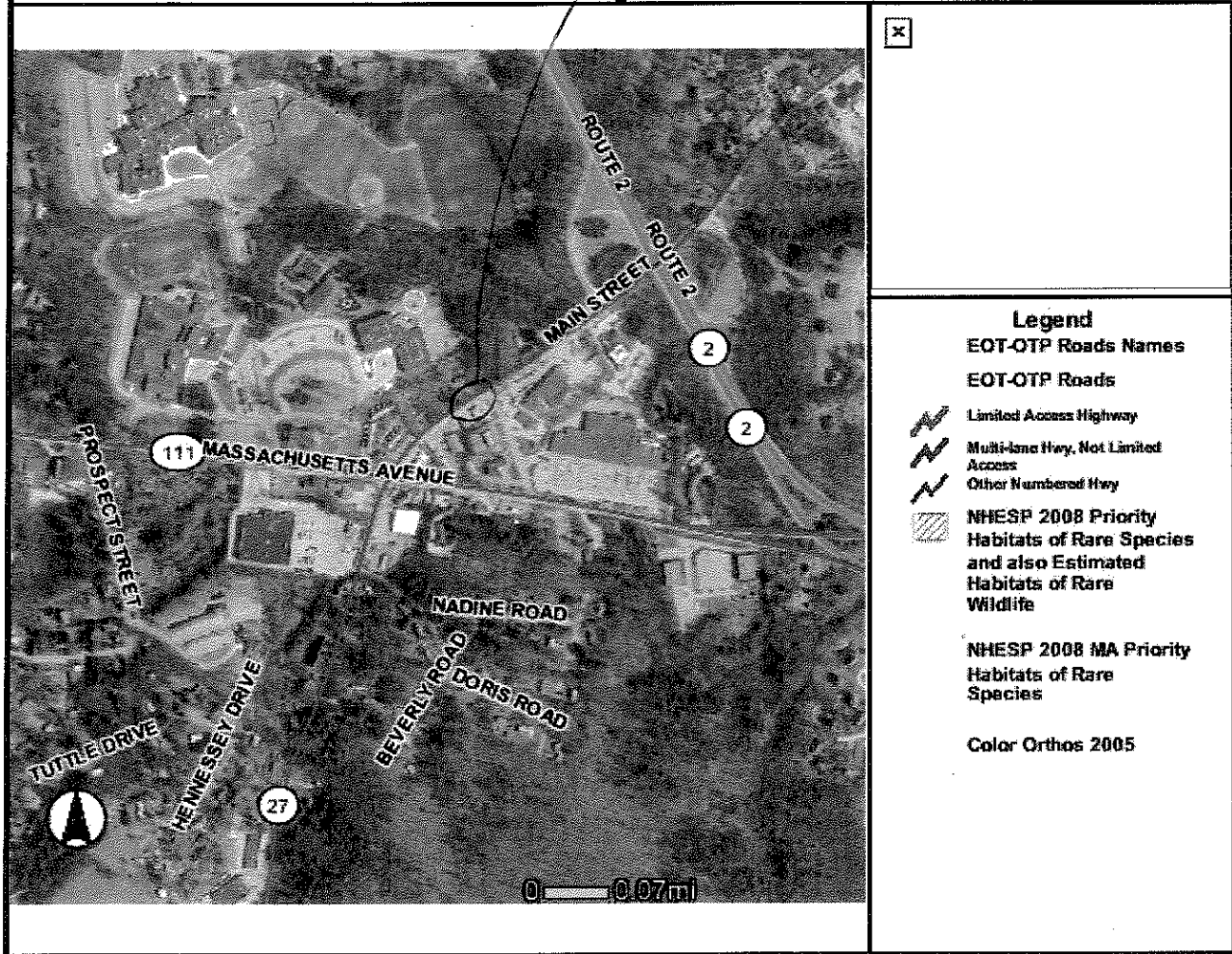
Low Flows Basin Characteristics			
100% Statewide Low Flow (0.36 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	0.36 (below min value 1.61)	1.61	149
Mean Basin Slope from 250K DEM (percent)	1.81	0.32	24.6
Stratified Drift per Stream Length (square mile per mile)	0.0701	0	1.29
Massachusetts Region (dimensionless)	0	0	1

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

Probability of Perennial Flow Basin Characteristics			
100% Perennial Flow Probability (0.36 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	0.36	0.01	1.99
Percent Underlain By Sand And Gravel (percent)	0.19	0	100
Percent Forest (percent)	27.77	0	100
Massachusetts Region (dimensionless)	0	0	1

Low Flows Streamflow Statistics			
Statistic	Flow (ft ³ /s)	Prediction Error (percent)	Equivalent years of record
D50	0.34		
D60	0.21		
	0.11		

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





MassWildlife

Massachusetts Division of Fisheries & Wildlife

Wayne F. MacCallum, Director


[Home](#) [Recreation](#) [Wildlife](#) [Fisheries](#) [Natural Heritage](#) [Habitat](#) [Education](#)



Rare Species by Town

MESA (Massachusetts Endangered Species Act) and Federal Status

Quick Links

- » [Town Index](#)
- » [MESA List](#)
- » [Contact Us](#)

E = Endangered T = Threatened SC = Special Concern

Most Recent Observation

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

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

For more information about a particular species, view the list of [Natural Heritage Fact Sheets](#).

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

[Abington](#) | [Acton](#) | [Acushnet](#) | [Adams](#) | [Agawam](#) | [Alford](#) | [Amesbury](#) | [Amherst](#) | [Andover](#) | [Aquinnah](#) | [Arlington](#) | [Ashburnham](#) | [Ashby](#) | [Ashfield](#) | [Ashland](#) | [Athol](#) | [Attleboro](#) | [Auburn](#) | [Avon](#) | [Ayer](#)

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
ABINGTON	Bird	Ammodramus savannarum	Grasshopper Sparrow	T		2005
ABINGTON	Butterfly/Moth	Callophrys hesseli	Hessel's Hairstreak	SC		1989
ABINGTON	Dragonfly/Damselfly	Enallagma laterale	New England Bluet	SC		2003

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
ACTON	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC		2002
ACTON	Bird	Cinclus mexicanus	Tree-toad	SC		1999

2/24/2011

Natural Heritage - Rare Species by Town...

ACTON	Beetle	Cicindera duodecimguttata	Twelve-spotted Tiger Beetle	SC	1930
ACTON	Bird	Poocetes gramineus	Vesper Sparrow	T	2003
ACTON	Butterfly/Moth	Callophrys irus	Frosted Elfin	SC	2008
ACTON	Dragonfly/Damselfly	Stylurus scudderi	Zebra Clubtail	SC	1996
ACTON	Mussel	Alasmidonta undulata	Triangle Floater	SC	1999
ACTON	Mussel	Ligumia nasuta	Eastern Pondmussel	SC	1999
ACTON	Reptile	Glyptemys insculpta	Wood Turtle	SC	2006
ACTON	Vascular Plant	Arceuthobium pusillum	Dwarf Mistletoe	SC	1898

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
ACUSHNET	Mussel	Ligumia nasuta	Eastern Pondmussel	SC		1999
ACUSHNET	Reptile	Terrapene carolina	Eastern Box Turtle	SC		2007
ACUSHNET	Vascular Plant	Triosteum perfoliatum	Broad Tinker's-weed	E		1901

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
ADAMS	Bird	Accipiter striatus	Sharp-shinned Hawk	SC		1945
ADAMS	Bird	Dendroica striata	Blackpoll Warbler	SC		2007
ADAMS	Bird	Oporornis philadelphia	Mourning Warbler	SC		2007
ADAMS	Butterfly/Moth	Erora laeta	Early Hairstreak	T		2006
ADAMS	Dragonfly/Damselfly	Enallagma carunculatum	Tule Bluet	SC		2001
ADAMS	Fish	Catostomus catostomus	Longnose Sucker	SC		2005
ADAMS	Mammal	Sorex dispar	Rock Shrew	SC		2000
ADAMS	Reptile	Glyptemys insculpta	Wood Turtle	SC		2008
ADAMS	Vascular Plant	Acer nigrum	Black Maple	SC		1986
ADAMS	Vascular Plant	Amelanchier bartramiana	Bartram's Shadbush	T		2005
ADAMS	Vascular Plant	Blephilia hirsuta	Hairy Wood-mint	E		2005
ADAMS	Vascular Plant	Boechera laevigata	Smooth Rock-cress	T		2008
ADAMS	Vascular Plant	Carex baileyi	Bailey's Sedge	T		2008
ADAMS	Vascular Plant	Carex hitchcockiana	Hitchcock's Sedge	SC		1918
ADAMS	Vascular Plant	Carex tetanica	Fen Sedge	SC		1995
ADAMS	Vascular Plant	Carex trichocarpa	Hairy-fruited Sedge	T		1986
ADAMS	Vascular Plant	Conioselinum chinense	Hemlock Parsley	SC		1982
ADAMS	Vascular Plant	Equisetum scirpoides	Dwarf Scouring-rush	SC		1998
ADAMS	Vascular Plant	Galium boreale	Northern Bedstraw	E		1995
ADAMS	Vascular Plant	Luzula parviflora ssp. melanocarpa	Black-fruited Woodrush	E		2007
ADAMS	Vascular Plant	Malaxis monophyllos var. brachypoda	White Adder's-mouth	E		Historic
ADAMS	Vascular Plant	Milium effusum	Woodland Millet	T		2005
ADAMS	Vascular Plant	Potamogeton ogdenii	Ogden's Pondweed	E		1996
ADAMS	Vascular Plant	Ribes lacustre	Bristly Black Currant	SC		2008
ADAMS	Vascular Plant	Rosa acicularis ssp. sayi	Northern Prickly Rose	E		1919



Natural Heritage & Endangered Species Program

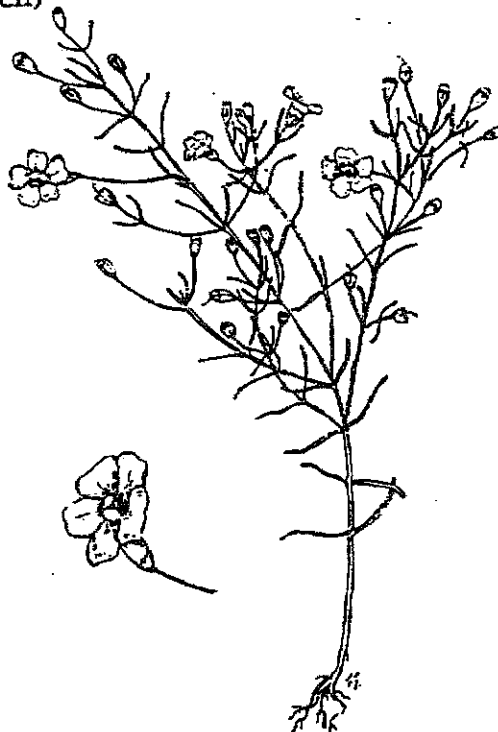
Commonwealth of Massachusetts
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

MASSACHUSETTS RARE AND ENDANGERED PLANTS

SANDPLAIN GERARDIA (*Agalinis acuta* Pennell)

Description

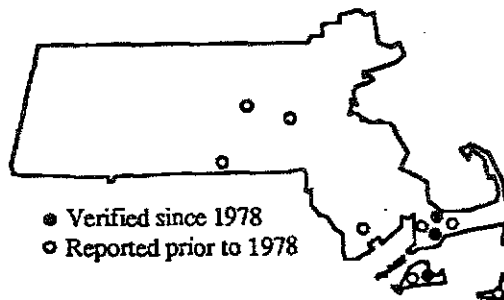
Agalinis acuta (formerly *Gerardia acuta*) is a delicate, sparsely branched, light yellowish-green herb in the Snapdragon or Figwort family (Scrophulariaceae). Although it may occasionally grow up to 40 cm tall, it usually grows from 10 to 20 cm (4-8 in.) high. The stem is smooth and slender, and the opposite, linear leaves are 0.5-1 mm (0.02 - 0.04 in.) wide and 10-25 mm (0.4 - 1 in.) long. The flower stalks are 10-30 mm (0.4 - 1.2 in.) long—1 to 3 times the length of the subtending leaflike bracts. Sandplain gerardia's rather bell-shaped flowers are arranged in a terminal raceme (a cluster of stalked flowers on an elongate, unbranched axis) and also in shorter lateral racemes. The blossoms are pink-purple, with two cream-colored lines. The corolla tube (cylindrical structure formed by the fusion of petals) is 7-9 mm (0.28 - 0.35 in.) long and ends in 3-4 mm (0.12 - 0.16 in.) long lobes that are either shallowly notched or square at their tips. The white throat (opening at the summit of the corolla tube) is marked with purple spots. Flowering season is from late August through late



Crow, G.E. New England's Rare, Threatened and Endangered Plants. U.S. Department of the Interior. 1982.



Documented Range of Sandplain Gerardia



Massachusetts Distribution by Town

September, and individual blossoms last for only a day. Sandplain gerardia's fruits are ovoid capsules (fruits that are derived from a compound pistil and that contain many seeds). The tiny, yellow-brown seeds are covered with a net-like pattern.

Range

Sandplain gerardia has a very restricted distribution. The maximum documented range includes only Massachusetts, Connecticut, Rhode Island, New York and Maryland.

Similar Species

Three other species of the genus *Agalinis* may also occur in fields. Purple gerardia (*Agalinis purpurea*) and small-flowered gerardia (*A. paupercula*) normally occupy wet pond shores, meadows and seasonally wet power line right-of-ways. Their flowers are much larger than those of sandplain gerardia, the petals are rounded and the pedicels (flower stalks) are much shorter than the subtending leaf-like bracts. (Sandplain gerardia's corolla lobes are notched or squared-off, and its pedicels are at least as long as the bracts.) Slender gerardia (*A. tenuifolia*) usually occurs on dry, rocky slopes, but it occasionally grows on sandy fields as well. Nevertheless, the petals of this small, many-branched, bushy plant are rounded, and the pedicels vary from only one-half as long to as long as the subtending bracts.

Habitat in Massachusetts

Sandplain gerardia grows in dry, sandy soils of grasslands and roadsides; in pine/oak scrub openings, usually where there is considerable growth of lichens and scattered patches of bare soil; and in sandy plains. Both poor soils and habitat disturbance may create the open, relatively competition-free areas required by sandplain gerardia. Specific habitats in Massachusetts include a dry, sandy, short grass cemetery and a dry grassland. Associated plant species include little bluestem (*Schizachyrium scoparium*), field pussytoes (*Antennaria neglecta*), bearberry (*Arctostaphylos uva-ursi*), poverty oatgrass (*Danthonia spicata*), early low blueberry (*Vaccinium angustifolium*), red fescue (*Festuca rubra*), stiff aster (*Aster linariifolius*), pinweed species (*Lechea* spp.) and birdfoot violet (*Viola pedata*). Bushy rockrose (*Helianthemum dumosum*) is a rare Massachusetts plants that has been found with sandplain gerardia. Sandplain gerardia does not survive in plots by itself; it is a hemiparasite on little bluestem and, possibly, other plants. After germination, its roots connect up with those of a host plant in order to obtain some of its nutrients.

Population Status

In 1988, sandplain gerardia was given "Endangered" status by the federal government. The plant is also presently listed as "Endangered" in Massachusetts, where there were 20 historical stations (sought but not found since 1978) in 10 towns and three current stations (discovered or relocated since 1978). (Two towns contain both a current and an historical station and is represented by single, solid dots on the town distribution map.) Sandplain gerardia is also considered rare in Maryland, New York, Connecticut, and Rhode Island. Indeed, throughout its range, the plant is considered very rare and in danger of extinction. In 1995, there were fewer than fifteen extant populations worldwide. It is believed that the plant's decline is due to habitat loss resulting from vegetational succession, fire suppression and land development. Annual mowing--after seed dispersal--is recommended to maintain open, short, grassy habitat. Because sandplain gerardia is an annual, there can be great variation in its numbers from year to year.

GROUNDWATER ANALYTICAL

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

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

February 11, 2011

Mr. Matt Lyne
Environmental Compliance Services, Inc.
997 Milbury St
Worcester, MA 01607

LABORATORY REPORT

Project: 289 Main St. Acton MA/93-200000.00
Lab ID: 139495
Received: 02-01-11

Dear Matt:

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

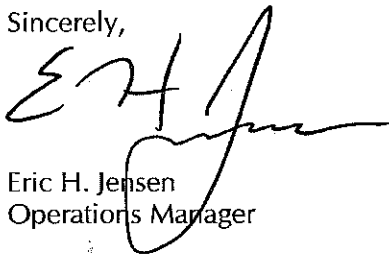
This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of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

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

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

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

Sincerely,



Eric H. Jensen
Operations Manager

EHJ/elm
Enclosures

Sample Receipt Report

Project: 289 Main St. Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.
Lab ID: 139495

Delivery: GWA Courier
Airbill: n/a
Lab Receipt: 02-01-11

Temperature: 2.7°C
Chain of Custody: Present
Custody Seal(s): n/a

Lab ID	Field ID		Matrix	Sampled	Method				Notes
139495-1	MW-3		Aqueous	1/31/11 14:15	EPA 8260B Volatile Organics with Oxygenates				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1317331	40 mL VOA Vial	Proline	BX38158	HCL	R-5915D	12-09-10	n/a		
C1317330	40 mL VOA Vial	Proline	BX38158	HCL	R-5915D	12-09-10	n/a		
C1321580	40 mL VOA Vial	Proline	BX38026	HCL	R-5915D	12-02-10	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
139495-2	MW-3		Aqueous	1/31/11 14:15	EPA 8011 EDB and DBCP by GC/ECD				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1317355	40 mL VOA Vial	Proline	BX38158	HCL	R-5915D	12-09-10	n/a		
C1317343	40 mL VOA Vial	Proline	BX38158	HCL	R-5915D	12-09-10	n/a		
C1317341	40 mL VOA Vial	Proline	BX38158	HCL	R-5915D	12-09-10	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
139495-3	MW-3		Aqueous	1/31/11 14:15	EPA 8270C Semivolatile Organics (Low Level)				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1313643	1 L Amber Glass	n/a	n/a	None	n/a	n/a	n/a		
C1313645	1 L Amber Glass	n/a	n/a	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
139495-4	MW-3		Aqueous	1/31/11 14:15	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1313640	1 L Amber Glass	n/a	n/a	None	n/a	n/a	n/a		
C1313646	1 L Amber Glass	n/a	n/a	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
139495-5	MW-3		Aqueous	1/31/11 14:15	EPA 6010B Ag As Be Cd Cr Cu Fe Ni Pb Sb Se Zn Total EPA 7196A Hexavalent Chromium				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1207877	250 mL Plastic	Scientific Specialty Services	BX36134	HNO3	R-6113E	04-16-10	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
139495-6	MW-3		Aqueous	1/31/11 14:15	EPA 7470A Mercury by CVAA Total				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1313621	250 mL Plastic	n/a	n/a	HNO3	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
139495-7	MW-3		Aqueous	1/31/11 14:15	EPA 9012A Total Cyanide				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1313644	500 mL Plastic	n/a	n/a	HCL	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
139495-8	MW-3		Aqueous	1/31/11 14:15	EPA 1664 Hexane Extractable Material				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1216058	1 L Amber Glass	Scientific Specialty Services	BX36257	H2SO4	R-6048D	04-29-10	n/a		
C1216054	1 L Amber Glass	Scientific Specialty Services	BX36257	H2SO4	R-6048D	04-29-10	n/a		

Sample Receipt Report (Continued)

Project: **289 Main St. Acton MA/93-200000.00**
Client: **Environmental Compliance Services, Inc.**
Lab ID: **139495**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **02-01-11**

Temperature: **2.7°C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
139495-9	MW-3		Aqueous	1/31/11 14:15	SM 4500-Cl G Total Residual Chlorine SM 2540 D Total Suspended Solids				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1313641	1 L Plastic	n/a	n/a	None	n/a	n/a	n/a		
C1313642	1 L Plastic	n/a	n/a	None	n/a	n/a	n/a		
C1313647	1 L Plastic	n/a	n/a	None	n/a	n/a	n/a		

Data Certification

Project: 289 Main St. Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.

Lab ID: 139495
Received: 02-01-11 19:45

Mass DEP Analytical Protocol Certification Form						
Project Location: n/a			MA DEP RTN: n/a			
This Form provides certifications for the following data set:						
EPA 8260B:	139495-1					
EPA 8270C:	139495-3					
EPA 8082:	139495-4					
EPA 6010B:	139495-5					
EPA 9012A:	139495-7					
EPA 7196A:	139495-5					
Sample Matrices: Groundwater/Surface (X) Soil/Sediment () Drinking Water () Air () Other ()						
CAM Protocol (check all that apply below):						
8260 VOC	7470/7471 Hg	Mass DEP VPH	8081 Pesticides	7196 Hex Cr	Mass DEP APH	
CAM II A (X)	CAM III B ()	CAM IV A ()	CAM V B ()	CAM VI B (X)	CAM IX A ()	
8270 SVOC	7010 Metals	Mass DEP EPH	8151 Herbicides	8330 Explosives	TO-15 VOC	
CAM II B (X)	CAM III C ()	CAM IV B ()	CAM V C ()	CAM VIII A ()	CAM IX B ()	
6010 Metals	6020 Metals	8082 PCB	9012 Cyanide/PAC	6860 Perchlorate		
CAM III A (X)	CAM III D ()	CAM V A (X)	CAM VI A (X)	CAM VIII B ()		
An affirmative response 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
B.	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?					Yes
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
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
E.	VPH, EPH and APH methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).					n/a
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
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)?					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?					No
I.	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?					No
All negative responses must be addressed in an attached laboratory narrative.						
I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.						
Signature:		Position: Operations Manager				
Printed Name: Eric H. Jensen		Date: 02-11-11				

EPA Method 8260B Volatile Organics by GC/MS

Field ID: MW-3
Project: 289 Main St. Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.
Laboratory ID: 139495-1
Sampled: 01-31-11 14:15
Received: 02-01-11 19:45
Analyzed: 02-03-11 11:03
Analyst: LMG

Matrix: Aqueous
Container: 40 mL VOA Vial
Preservation: HCl/ Cool
QC Batch ID: VM10-1231-W
Instrument ID: MS-10 HP 6890
Sample Volume: 5 mL
Dilution Factor: 500

Page: 1 of 2

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	250
74-87-3	Chloromethane	BRL		ug/L	250
75-01-4	Vinyl Chloride	BRL		ug/L	250
74-83-9	Bromomethane	BRL		ug/L	250
75-00-3	Chloroethane	BRL		ug/L	250
75-69-4	Trichlorofluoromethane	BRL		ug/L	250
60-29-7	Diethyl Ether	BRL		ug/L	1,000
75-35-4	1,1-Dichloroethene	BRL		ug/L	250
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	2,500
67-64-1	Acetone	BRL		ug/L	5,000
75-15-0	Carbon Disulfide	BRL		ug/L	2,500
75-09-2	Methylene Chloride	BRL		ug/L	1,300
107-13-1	Acrylonitrile	BRL		ug/L	1,300
156-60-5	trans- 1,2-Dichloroethene	BRL		ug/L	250
1634-04-4	Methyl tert- butyl Ether (MTBE)	BRL		ug/L	250
75-34-3	1,1-Dichloroethane	BRL		ug/L	250
594-20-7	2,2-Dichloropropane	BRL		ug/L	250
156-59-2	cis- 1,2-Dichloroethene	BRL		ug/L	250
78-93-3	2-Butanone (MEK)	BRL		ug/L	2,500
74-97-5	Bromochloromethane	BRL		ug/L	250
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	2,500
67-66-3	Chloroform	BRL		ug/L	250
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	250
56-23-5	Carbon Tetrachloride	BRL		ug/L	250
563-58-6	1,1-Dichloropropene	BRL		ug/L	250
71-43-2	Benzene	800		ug/L	250
107-06-2	1,2-Dichloroethane	BRL		ug/L	250
79-01-6	Trichloroethene	BRL		ug/L	250
78-87-5	1,2-Dichloropropane	BRL		ug/L	250
74-95-3	Dibromomethane	BRL		ug/L	250
75-27-4	Bromodichloromethane	BRL		ug/L	250
123-91-1	1,4-Dioxane	BRL		ug/L	250,000
10061-01-5	cis- 1,3-Dichloropropene	BRL		ug/L	200
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	2,500
108-88-3	Toluene	13,000		ug/L	250
10061-02-6	trans- 1,3-Dichloropropene	BRL		ug/L	200
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	250
127-18-4	Tetrachloroethene	BRL		ug/L	250
142-28-9	1,3-Dichloropropane	BRL		ug/L	250
591-78-6	2-Hexanone	BRL		ug/L	2,500
124-48-1	Dibromochloromethane	BRL		ug/L	250
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	250
108-90-7	Chlorobenzene	BRL		ug/L	250
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	250
100-41-4	Ethylbenzene	11,000		ug/L	250
108-38-3/106-42-3	meta- Xylene and para- Xylene	47,000		ug/L	250

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

Field ID: MW-3
Project: 289 Main St. Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.

Laboratory ID: 139495-1
Sampled: 01-31-11 14:15
Received: 02-01-11 19:45
Analyzed: 02-03-11 11:03
Analyst: LMG

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

QC Batch ID: VM10-1231-W
Instrument ID: MS-10 HP 6890
Sample Volume: 5 mL
Dilution Factor: 500

Page: 2 of 2

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
95-47-6	ortho- Xylene	15,000		ug/L	250
100-42-5	Styrene	BRL		ug/L	250
75-25-2	Bromoform	BRL		ug/L	250
98-82-8	Isopropylbenzene	930		ug/L	250
108-86-1	Bromobenzene	BRL		ug/L	250
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	250
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	250
110-57-6	trans-1,4-Dichloro-2-butene	BRL		ug/L	13,000
103-65-1	n-Propylbenzene	3,100		ug/L	250
95-49-8	2-Chlorotoluene	BRL		ug/L	250
108-67-8	1,3,5-Trimethylbenzene	6,700		ug/L	250
106-43-4	4-Chlorotoluene	BRL		ug/L	250
98-06-6	tert- Butylbenzene	BRL		ug/L	250
95-63-6	1,2,4-Trimethylbenzene	25,000		ug/L	250
135-98-8	sec-Butylbenzene	390		ug/L	250
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	250
99-87-6	4-Isopropyltoluene	BRL		ug/L	250
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	250
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	250
104-51-8	n-Butylbenzene	BRL		ug/L	250
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	250
108-70-3	1,3,5-Trichlorobenzene	BRL		ug/L	250
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	250
87-68-3	Hexachlorobutadiene	BRL		ug/L	250
91-20-3	Naphthalene	3,100		ug/L	250
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	250
75-65-0	tert-Butyl Alcohol (TBA)	BRL		ug/L	10,000
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	250
637-92-3	Ethyl tert- butyl Ether (ETBE)	BRL		ug/L	250
994-05-8	tert-Amyl Methyl Ether (TAME)	BRL		ug/L	250

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	11	110 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	11	111 %	70 - 130 %
Toluene-d ₈	10	12	117 %	70 - 130 %
4-Bromofluorobenzene	10	10	99 %	70 - 130 %

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

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

**EPA Method 8011
EDB and DBCP by GC/ECD**

Field ID: MW-3
Project: 289 Main St. Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.

Matrix: Aqueous
Container: 40 mL VOA Vial
Preservation: Cool

Laboratory ID: 139495-02
Sampled: 01-31-11 14:15
Received: 02-01-11 19:45
Extracted: 02-03-11 22:30
Analyzed: 02-03-11 23:27
Analyst: CRL

QC Batch ID: PV-1013-E
Instrument ID: GC-6 HP 5890
Sample Volume: 34 mL
Final Volume: 1 mL
Dilution Factor: 1

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
106-93-4	1,2-Dibromoethane (EDB)	0.05	1C (0.02)*	ug/L	0.02
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	BRL		ug/L	0.02

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

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

* Confirmatory column quantification.

1C Concentration reported from first column.

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

Field ID: MW-3
Project: 289 Main St. Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.

Laboratory ID: 139495-03
Sampled: 01-31-11 14:15
Received: 02-01-11 19:45
Extracted: 02-04-11 09:00
Analyzed: 02-09-11 11:35
Analyst: MJB

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

QC Batch ID: SV-2613-F
Instrument ID: MS-3 HP 5890
Sample Volume: 1,000 mL
Final Volume: 1 mL
Dilution Factor: 25

Page: 1 of 2

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

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

Field ID: MW-3
Project: 289 Main St. Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.
Laboratory ID: 139495-03
Sampled: 01-31-11 14:15
Received: 02-01-11 19:45
Extracted: 02-04-11 09:00
Analyzed: 02-09-11 11:35
Analyst: MJB

Matrix: Aqueous
Container: 1 L Amber Glass
Preservation: Cool
QC Batch ID: SV-2613-F
Instrument ID: MS-3 HP 5890
Sample Volume: 1,000 mL
Final Volume: 1 mL
Dilution Factor: 25

Page: 2 of 2

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
86-30-6	N-Nitrosodiphenylamine [†]	BRL		ug/L	120
122-66-7	1,2-Diphenylhydrazine [◊]	BRL		ug/L	120
101-55-3	4-Bromophenyl phenyl ether	BRL		ug/L	120
86-74-8	Carbazole	BRL		ug/L	120
84-74-2	Di-n-butyl phthalate	BRL		ug/L	120
85-68-7	Butyl benzyl phthalate	BRL		ug/L	120
91-94-1	3,3'-Dichlorobenzidine	BRL		ug/L	120
117-81-7	Bis(2-ethylhexyl) phthalate	BRL		ug/L	120
117-84-0	Di-n-octyl phthalate	BRL		ug/L	120

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	n/a	d	15 - 110 %
Phenol-d5	20	n/a	d	15 - 110 %
Nitrobenzene-d5	10	n/a	d	30 - 130 %
2-Fluorobiphenyl	10	n/a	d	30 - 130 %
2,4,6-Tribromophenol	20	n/a	d	15 - 110 %
Terphenyl-d14	10	n/a	d	30 - 130 %

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

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

* Analyzed as 4-Methylphenol.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

d Surrogate recovery not measurable due to required sample dilution.

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

Field ID: MW-3
Project: 289 Main St. Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.

Laboratory ID: 139495-03
Sampled: 01-31-11 14:15
Received: 02-01-11 19:45
Extracted: 02-04-11 09:00
Analyzed: 02-10-11 00:44
Analyst: MJB

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

QC Batch ID: SV-2613-F
Instrument ID: MS-6 HP 6890
Sample Volume: 1,000 mL
Final Volume: 1 mL
Dilution Factor: 200

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	1,400		ug/L	40
91-57-6	2-Methylnaphthalene	1,700		ug/L	40
208-96-8	Acenaphthylene	BRL		ug/L	40
83-32-9	Acenaphthene	BRL		ug/L	40
86-73-7	Fluorene	BRL		ug/L	40
85-01-8	Phenanthrene	BRL		ug/L	40
120-12-7	Anthracene	BRL		ug/L	40
206-44-0	Fluoranthene	BRL		ug/L	40
129-00-0	Pyrene	BRL		ug/L	40
56-55-3	Benzo[a]anthracene	BRL		ug/L	20
218-01-9	Chrysene	BRL		ug/L	20
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	20
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	20
50-32-8	Benzo[a]pyrene	BRL		ug/L	20
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	20
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	20
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	20
87-68-3	Hexachlorobutadiene	BRL		ug/L	100
118-74-1	Hexachlorobenzene	BRL		ug/L	100
87-86-5	Pentachlorophenol	BRL		ug/L	200

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	n/a	d	15 - 110 %
Phenol-d5	20	n/a	d	15 - 110 %
Nitrobenzene-d5	10	n/a	d	30 - 130 %
2-Fluorobiphenyl	10	n/a	d	30 - 130 %
2,4,6-Tribromophenol	20	n/a	d	15 - 110 %
Terphenyl-d14	10	n/a	d	30 - 130 %

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

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.
d Surrogate recovery not measurable due to required sample dilution.

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

Field ID: MW-3
Project: 289 Main St. Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.

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

Laboratory ID: 139495-04
Sampled: 01-31-11 14:15
Received: 02-01-11 19:45
Extracted: 02-01-11 22:30
Cleaned Up: 02-02-11 20:30
Analyzed: 02-03-11 05:37
Analyst: CRL

QC Batch ID: PB-2657-F
Instrument ID: GC-11 Agilent 6890
Sample Weight: 970 mL
Final Volume: 1 mL
Dilution Factor: 1

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

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	0.21	0.18	88 %
Column	Decachlorobiphenyl	0.21	0.16	80 %
Second	Tetrachloro- <i>m</i> -xylene	0.21	0.13	62 %
Column	Decachlorobiphenyl	0.21	0.16	77 %

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

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.
† Non-target analyte. Result is based on a single mid-range calibration standard.

Inorganic Chemistry

Field ID: MW-3
Project: 289 Main St. Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.

Matrix: Aqueous
Received: 02-01-11 19:45

Lab ID: 139495-05 Sampled: 01-31-11 14:15 Container: 250 mL Plastic Preservation: Cool

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Chromium, Hexavalent	BRL	mg/L	0.01	1	5 mL	02-02-11 10:00	HC-0210-W	EPA 7196A	2	JK

Lab ID: 139495-07 Sampled: 01-31-11 14:15 Container: 500 mL Plastic Preservation: NaOH/Cool

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Cyanide, Total	BRL	mg/L	0.01	1	50 mL	02-04-11 13:31	TCN-1614-W	EPA 9012B	1	JR

Lab ID: 139495-08 Sampled: 01-31-11 14:15 Container: 1 L Amber Glass Preservation: H2SO4/Cool

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Oil and Grease, Total	55	mg/L	5	1	1000 mL	02-06-11 10:00	HO-0562-W	EPA 1664	3	JAR

Lab ID: 139495-09 Sampled: 01-31-11 14:15 Container: 1 L Plastic Preservation: Cool

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	51	mg/L	5	3	200 mL	02-05-11 13:34	TSS-1870-W	SM 2540 D	3	JR
Chlorine, Total Residual	BRL	mg/L	0.02	1	5 mL	02-01-11 09:00	TRC-0896-W	SM 4500-Cl G	2	DEB

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

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

RL Reporting Limit.

DF Dilution Factor.

1 Instrument ID: Lachat 8000 Autoanalyzer

2 Instrument ID: Thermo Electron Genesys 20

3 Instrument ID: Mettler AT 200 Balance

Trace Metals

Field ID: MW-3
Project: 289 Main St. Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.
Laboratory ID: 139495-5
Sampled: 01-31-11 14:15
Received: 02-01-11 19:45

Matrix: Aqueous
Container: 250 mL Plastic
Preservation: HNO3 / Cool
Preserved: 01-31-11 14:15

<u>Analysis Method</u>	<u>QC Batch ID</u>	<u>Prep Method</u>	<u>Prepared</u>	<u>Sample Volume</u>	<u>Instrument ID</u>	<u>Analyst</u>
EPA 6020A ¹	MB-4310-W	EPA 3010A	02-02-11 00:00	50 mL	ICPMS-1 ELAN 9000	LMS
EPA 7470A ²	MP-2362-W	EPA 7470A	02-04-11 00:00	25 mL	CVAA-1 PE FIMS	LMS

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-36-0	Antimony, Total	BRL		mg/L	0.06	1	02-09-11 12:22	EPA 6020A ¹
7440-38-2	Arsenic, Total	BRL		mg/L	0.01	1	02-09-11 12:22	EPA 6020A ¹
7440-41-7	Beryllium, Total	BRL		mg/L	0.004	1	02-09-11 12:22	EPA 6020A ¹
7440-43-9	Cadmium, Total	BRL		mg/L	0.004	1	02-09-11 12:22	EPA 6020A ¹
7440-47-3	Chromium, Total	BRL		mg/L	0.01	1	02-09-11 12:22	EPA 6020A ¹
7440-50-8	Copper, Total	BRL		mg/L	0.025	1	02-09-11 12:22	EPA 6020A ¹
7439-92-1	Lead, Total	0.011		mg/L	0.005	1	02-09-11 12:22	EPA 6020A ¹
7439-97-6	Mercury, Total	BRL		mg/L	0.0002	1	02-09-11 10:38	EPA 7470A ²
7440-02-0	Nickel, Total	BRL		mg/L	0.04	1	02-09-11 12:22	EPA 6020A ¹
7782-49-2	Selenium, Total	BRL		mg/L	0.05	1	02-09-11 12:22	EPA 6020A ¹
7440-22-4	Silver, Total	BRL		mg/L	0.007	1	02-09-11 12:22	EPA 6020A ¹
7440-28-0	Thallium, Total	BRL		mg/L	0.02	1	02-09-11 12:22	EPA 6020A ¹
7440-66-6	Zinc, Total	BRL		mg/L	0.05	1	02-09-11 12:22	EPA 6020A ¹

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

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

Trace Metals

Field ID: MW-3
Project: 289 Main St. Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.
Laboratory ID: 139495-6
Sampled: 01-31-11 14:15
Received: 02-01-11 19:45

Matrix: Aqueous
Container: 250 mL Plastic
Preservation: HNO₃ / Cool
Preserved: 01-31-11 14:15

<u>Analysis Method</u>	<u>QC Batch ID</u>	<u>Prep Method</u>	<u>Prepared</u>	<u>Sample Volume</u>	<u>Instrument ID</u>	<u>Analyst</u>
EPA 7470A ¹	MP-2362-W	EPA 7470A	02-04-11 00:00	25 mL	CVAA-1 PE FIMS	LMS

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-97-6	Mercury, Total		BRL	mg/L	0.0002	1	02-09-11 10:48	EPA 7470A ¹

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

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

CERTIFICATE OF ANALYSIS

Client Name: Groundwater Analytical, Inc.
Client Project ID: 289 Main St, Acton MA

ESS Laboratory Work Order: 1102093

3005A/3020A/6000/7000 Total Metals

Client Sample ID: MW-3
Date Sampled: 01/31/11 14:15
Percent Solids: N/A

ESS Laboratory Sample ID: 1102093-01
Sample Matrix: Ground Water

<u>Analyte</u>	<u>Results</u>	<u>Units</u>	<u>MRL</u>	<u>Method</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>
Iron	88800	ug/L	100	6010B	1	SVD	02/10/11 18:12	30	30

Project Narrative

Project: 289 Main St. Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.

Lab ID: 139495
Received: 02-01-11 19:45

A. Documentation and Client Communication

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

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

B. Method Modifications, Non-Conformances and Observations

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

1. EPA 6010B Note: Sample 139495-5. Sample was analyzed for selected target analytes, as requested by client.
2. EPA 8260B Note: Sample 139495-1. Sample was diluted prior to analysis. Dilution was required to keep all target analytes within calibration. Elevated reporting limits are above the recommended CAM reporting limits for the target analytes.
3. EPA 8260B Non-conformance: Laboratory control sample (LCS) analytes 1,1,2-Trichlorotrifluoroethane and Hexachlorobutadiene were above recommended recovery limits for QC batch VM10-1231-W.
4. EPA 8260B Note: Sample 139495-1. Acetone did not meet the required minimum average response factor in the ICAL. Response factor was below the recommended limit in the CCV.
5. EPA 8260B Note: Sample 139495-1. Relative percent deviations for Trichlorofluoromethane, 1,1,2-Trichlorotrifluoroethane, Tetrachloroethene, trans-1,4-Dichloro-2-butene and Hexachlorobutadiene were above the recommended limit in the CCV.
6. EPA 8270C Modification: Sample 139495-3. Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method. GC/MS-SIM was used to achieve low quantification limits necessary for regulatory compliance.
7. EPA 8270C Non-conformance: Laboratory control sample (LCS) analyte Hexachlorocyclopentadiene was below recommended recovery limits for QC batch SV-2613-F.
8. EPA 8270C Non-conformance: Sample 139495-3. Sample did not have measureable surrogate recoveries due to required sample dilution.
9. EPA 8270C Note: Sample 139495-3. Sample was diluted prior to analysis. Dilution was required to keep all target analytes within calibration. Elevated reporting limits are above the recommended CAM reporting limits for the target analytes.
10. EPA 8270C PAH Non-conformance: Sample 139495-3. Sample did not have measureable surrogate recoveries due to required sample dilution.
11. EPA 8270C PAH Note: Sample 139495-3. Sample was diluted prior to analysis. Dilution was required to keep all target analytes within calibration. Elevated reporting limits are above the recommended CAM reporting limits for the target analytes.
12. EPA 8270C Note: Sample 139495-3. Quadratic equations were used in the calculations for analytes 2,4,6-Tribromophenol for QC batch VM10-1231-W.
13. EPA 8270C Note: Sample 139495-3. Recoveries for Hexachlorocyclopentadiene were not within the recommended limits in the CCV.

GROUNDWATER ANALYTICAL

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Telephone (508) 799-1411 FAX (508) 799-1477
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

Project Name: 213-00000-00
 Project Number: 213-00000-00
 Sampler Name: M. Secora
 Project Manager: M. Secora
 Address: 213 Main St, Apt. 1A
 City/State/Zip: Worcester, MA 01609
 Telephone: 508-796-8191

TURNAROUND
☐ 10 Business Days
☒ 5 Business Days
☒ RUSH (RAN)
 (Rush requires Rush Authorization Number)
 Please Email to: ML@GWA.com
 Please FAX to: 508-796-8191
BILLING
☒ Purchase Order No.: 33717
☒ Third Party Billing: GWA
☐ GWA Quote:

ANALYSIS REQUEST

Variable	Parameter	Method	Frequency	Notes
PHOSPHATE	PO4-P	Ascorbic Acid Reduction	1000	
	PO4-S	Ascorbic Acid Reduction	1000	
	PO4-T	Ascorbic Acid Reduction	1000	
	PO4-M	Ascorbic Acid Reduction	1000	
NITRATE	NO3-N	Cadmium Reduction	1000	
	NO3-N	Cadmium Reduction	1000	
	NO3-N	Cadmium Reduction	1000	
	NO3-N	Cadmium Reduction	1000	
AMMONIA	NH4-N	Nesslerization	1000	
	NH4-N	Nesslerization	1000	
	NH4-N	Nesslerization	1000	
	NH4-N	Nesslerization	1000	

REMARKS / SPECIAL INSTRUCTIONS

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

Sampling Time: 13:14 Sample ID: MW-3

DATA QUALITY OBJECTIVES

Regulatory Program: ☒ Standard ☐ Deliverables

Safe: ☐ CT ☐ MCP GW-1/5-1 ☐ PWS Form

ME: ☐ ME ☐ MCP GW-2/5-2 ☐ MWDA

MA: ☐ MA ☐ NY STARS ☐ ☐

DRINKING WATER: ☐ DRINKING WATER ☐ WASTEWATER

WASTE: ☐ WASTE ☐ WASTE DISPOSAL ☐ WASTE DISPOSAL

VT: ☐ VT ☐ Dredge Material ☐ ☐

CHAIN-OF-CUSTODY RECORD

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

Received by: ML Date: 1-31-11 Time: 11:11

Received by: ML Date: 1-31-11 Time: 11:11

Received by: ML Date: 1-31-11 Time: 11:11

Received by: ML Date: 1-31-11 Time: 11:11

Quality Assurance/Quality Control

A. Program Overview

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

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

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

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

B. Definitions

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

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

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

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

Laboratory Control Samples

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

Sample Type	Method	QC Batch ID	Prep Method	Prepared	Analyzed	Instrument ID	Analyst
LCS	EPA 9012B	TCN-1614-W	EPA 9012B	2/4/2011 7:00	2/4/2011 12:52	Lachat 8000 Autoanalyzer JR	
LCSD	EPA 9012B	TCN-1614-W	EPA 9012B	2/4/2011 7:00	2/4/2011 12:53	Lachat 8000 Autoanalyzer JR	

Analyte	LCS			LCS Duplicate				QC Limits		Method
	Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
Cyanide, Total	0.45	0.48	107%	0.45	0.43	94%	13 %	90-110%	20 %	EPA 9012B

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

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

Quality Control Report Laboratory Control Sample

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

Analyte	Units	Spiked	Measured	Recovery	QC Limits	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	mg/L	81	87	107 %	80 - 120 %	02-05-11 13:34	TSS-1870-W	SM 2540 D	3	JR
Chlorine, Total Residual	mg/L	0.05	0.05	108 %	80 - 120 %	02-01-11 09:00	TRC-0896-W	SM 4500-Cl G	2	DEB
Chromium, Hexavalent	mg/L	0.1	0.1	96 %	80 - 120 %	02-02-11 00:00	HC-0210-W	EPA 7196A	2	JK
Oil and Grease, Total	mg/L	40	41	102 %	78 - 114 %	02-06-11 10:00	HO-0562-W	EPA 1664	3	JR
Cyanide, Total	mg/L	0.45	0.48	107 %	80 - 120 %	02-04-11 12:52	TCN-1614-W	Lachat 10-204-00-1-A (EPA 835.4)	1	JR

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

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

- 1 Instrument ID: Lachat 8000 Autoanalyzer
- 2 Instrument ID: Thermo Electron Genesys 20
- 3 Instrument ID: Mettler AT 200 Balance

**Quality Control Report
Method Blank**

Category: **Inorganic Chemistry**

Matrix: **Aqueous**

Analyte	Result	Units	RL	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	BRL	mg/L	2	02-05-11 13:34	TSS-1870-W	SM 2540 D	3	JR
Chlorine, Total Residual	BRL	mg/L	0.02	02-01-11 09:00	TRC-0896-W	SM 4500-Cl G	2	DEB
Chromium, Hexavalent	BRL	mg/L	0.01	02-02-11 00:00	HC-0210-W	EPA 7196A	2	JK
Oil and Grease, Total	BRL	mg/L	5	02-06-11 10:00	HO-0562-W	EPA 1664	3	JR
Cyanide, Total	BRL	mg/L	0.01	02-04-11 12:52	TCN-1614-W	Lachat 10-204-09-1-A (EPA 335.4)	1	JR

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

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

RL Reporting Limit.

1 Instrument ID: Lachat 8000 Autoanalyzer

2 Instrument ID: Thermo Electron Genesys 20

3 Instrument ID: Mettler AT 200 Balance

Quality Control Report Laboratory Control Samples

Category:	EPA 8082	LCS	Instrument ID:	GC-11 Agilent 6890	LCS D	Instrument ID:	GC-11 Agilent 6890
QC Batch ID:	PB-2657-F	Extracted:	02-01-11 14:30	Extracted:	02-01-11 14:30		
Matrix:	Aqueous	Cleaned Up:	02-02-11 20:30	Cleaned Up:	02-02-11 20:30		
Units:	ug/L	Analyzed:	02-03-11 02:29	Analyzed:	02-03-11 02:52		
		Analyst:	CRL	Analyst:	CRL		

CAS Number	Analyte	LCS						LCS Duplicate								QC Limits	
		Spiked	Measured		Recovery		Spiked	Measured		Recovery		RPD					
			1st Col	2nd Col	1st Col	2nd Col		1st Col	2nd Col	1st Col	2nd Col						
12674-11-2	Aroclor 1016	5.0	4.7	4.3	93%	85%	5.0	4.7	4.2	93%	83%	0 %	2 %	40 - 140%	20 %		
11096-82-5	Aroclor 1260	5.0	4.2	4.1	84%	82%	5.0	4.1	3.8	82%	76%	2 %	7 %	40 - 140%	20 %		
QC Surrogate Compound		Surrogate Recovery												QC Limits			
Tetrachloro- <i>m</i> -xylene		0.20	0.17	0.15	83%	77%	0.20	0.16	0.14	78%	72%			30 - 150 %			
Decachlorobiphenyl		0.20	0.16	0.14	80%	71%	0.20	0.15	0.13	74%	66%			30 - 150 %			

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

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

Quality Control Report Method Blank

Category: EPA Method 8082
QC Batch ID: PB-2657-F
Matrix: Aqueous

Instrument ID: GC-11 Agilent 6890
Extracted: 02-01-11 14:30
Cleaned Up: 02-02-11 20:30
Analyzed: 02-03-11 02:05
Analyst: CRL

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

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	0.20	0.16	81 %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.17	83 %	30 - 150 %
Second	Tetrachloro- <i>m</i> -xylene	0.20	0.15	74 %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.15	74 %	30 - 150 %

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

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.
† Non-target analyte. Result is based on a single mid-range calibration standard.

**Quality Control Report
Laboratory Control Sample**

Category: EPA Method 8011
QC Batch ID: PV-1013-E
Matrix: Aqueous
Units: ug/L

Instrument ID: GC-6 HP 5890
Extracted: 02-03-11 17:30
Analyzed: 02-03-11 20:43
Analyst: CRL

CAS Number	Analyte	Spiked	Measured		Recovery		QC Limits
			1st Column	2nd Column	1st Column	2nd Column	
106-93-4	1,2-Dibromoethane (EDB)	0.20	0.18	0.18	89 %	91 %	70 - 130 %
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.20	0.18	0.20	90 %	99 %	70 - 130 %

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

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

**Quality Control Report
Method Blank**

Category: EPA Method 8011
QC Batch ID: PV-1013-E
Matrix: Aqueous

Instrument ID: GC-6 HP 5890
Extracted: 02-03-11 17:30
Analyzed: 02-03-11 22:29
Analyst: CRL

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.02
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	BRL		ug/L	0.02

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

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

Quality Control Report Laboratory Control Samples

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

Sample Type	Method	QC Batch ID	Prep Method	Prepared	Analyzed	Instrument ID	Analyst
LCS	EPA 6020A	MB-4310-WL	EPA 3010A	02-02-11 00:00	02-09-11 00:00	ICPMS-1 ELAN 9000	JK
LCS	EPA 7470A	MP-2362-WL	EPA 7470A	02-04-11 00:00	02-09-11 10:31	CVAA-1 PE FIMS	LMS
LCSD	EPA 6020A	MB-4310-WL	EPA 3010A	02-02-11 00:00	02-09-11 10:35	ICPMS-1 ELAN 9000	JK
LCSD	EPA 7470A	MP-2362-WL	EPA 7470A	02-04-11 00:00	02-09-11 10:35	CVAA-1 PE FIMS	LMS

CAS Number	Analyte	LCS			LCS Duplicate			RPD	QC Limits		Method
		Spiked	Measured	Recovery	Spiked	Measured	Recovery		LCS	RPD	
7440-36-0	Antimony	5.0	4.5	90%	5.0	4.8	95%	3 %	80-120 %	20 %	EPA 6020A
7440-38-2	Arsenic	5.0	4.5	90%	5.0	4.3	86%	2 %	80-120 %	20 %	EPA 6020A
7440-41-7	Beryllium	1.0	0.90	90%	1.0	0.89	89%	1 %	80-120 %	20 %	EPA 6020A
7440-43-9	Cadmium	1.0	0.84	84%	1.0	0.88	88%	2 %	80-120 %	20 %	EPA 6020A
7440-47-3	Chromium	1.0	0.88	88%	1.0	0.88	88%	0 %	80-120 %	20 %	EPA 6020A
7440-50-8	Copper	1.0	0.85	85%	1.0	0.88	88%	2 %	80-120 %	20 %	EPA 6020A
7439-92-1	Lead	5.0	4.2	84%	5.0	4.7	94%	6 %	80-120 %	20 %	EPA 6020A
7439-97-6	Mercury	0.0010	0.0009	86%	0.0010	0.0009	91%	3 %	80-120 %	20 %	EPA 7470A
7440-02-0	Nickel	1.0	0.85	85%	1.0	0.88	88%	2 %	80-120 %	20 %	EPA 6020A
7782-49-2	Selenium	5.0	4.3	86%	5.0	5.6	111%	13 %	80-120 %	20 %	EPA 6020A
7440-22-4	Silver	1.0	0.85	85%	1.0	0.88	88%	2 %	80-120 %	20 %	EPA 6020A
7440-28-0	Thallium	5.0	4.5	90%	5.0	4.6	92%	1 %	80-120 %	20 %	EPA 6020A
7440-66-6	Zinc	1.0	0.83	83%	1.0	0.96	96%	7 %	80-120 %	20 %	EPA 6020A

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

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

Quality Control Report Method Blank

Category: Metals
Matrix: Aqueous

<u>Analysis Method</u>	<u>QC Batch ID</u>	<u>Prep Method</u>	<u>Prepared</u>	<u>Sample Volume</u>	<u>Instrument ID</u>	<u>Analyst</u>
EPA 6020A	MB-4310-WB	EPA 3010A	02-02-11 00:00	50 mL	ICPMS-1 ELAN 9000	JK
EPA 7470A	MP-2362-WB	EPA 7470A	02-04-11 00:00	25 mL	CVAA-1 PE FIMS	LMS

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-36-0	Antimony	BRL		mg/L	0.003	1	02-09-11 00:00	EPA 6020A
7440-38-2	Arsenic	BRL		mg/L	0.005	1	02-09-11 00:00	EPA 6020A
7440-41-7	Beryllium	BRL		mg/L	0.004	1	02-09-11 00:00	EPA 6020A
7440-43-9	Cadmium	BRL		mg/L	0.004	1	02-09-11 00:00	EPA 6020A
7440-47-3	Chromium	BRL		mg/L	0.01	1	02-09-11 00:00	EPA 6020A
7440-50-8	Copper	BRL		mg/L	0.025	1	02-09-11 00:00	EPA 6020A
7439-92-1	Lead	BRL		mg/L	0.005	1	02-09-11 00:00	EPA 6020A
7439-97-6	Mercury	BRL		mg/L	0.0002	1	02-09-11 10:31	EPA 7470A
7440-02-0	Nickel	BRL		mg/L	0.04	1	02-09-11 00:00	EPA 6020A
7782-49-2	Selenium	BRL		mg/L	0.005	1	02-09-11 00:00	EPA 6020A
7440-22-4	Silver	BRL		mg/L	0.007	1	02-09-11 00:00	EPA 6020A
7440-28-0	Thallium	BRL		mg/L	0.002	1	02-09-11 00:00	EPA 6020A
7440-66-6	Zinc	BRL		mg/L	0.05	1	02-09-11 00:00	EPA 6020A

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

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

Quality Control Report Laboratory Control Samples

Category: EPA Method 8260B
QC Batch ID: VM10-1231-W
Matrix: Aqueous
Units: ug/L

LCS
Instrument ID: MS-10 HP 6890
Analyzed: 02-03-11 06:45
Analyst: LMG

LCSD
Instrument ID: MS-10 HP 6890
Analyzed: 02-03-11 07:07
Analyst: LMG

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CAS Number	Analyte	LCS			LCS Duplicate			RPD	QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery		Spike	RPD
75-71-8	Dichlorodifluoromethane	10	9.0	90 %	10	8.5	85 %	5 %	70 - 130 %	20%
74-87-3	Chloromethane	10	8.6	86 %	10	8.0	80 %	7 %	70 - 130 %	20%
75-01-4	Vinyl Chloride	10	9.6	96 %	10	8.9	89 %	7 %	70 - 130 %	20%
74-83-9	Bromomethane	10	10	105 %	10	10	100 %	4 %	70 - 130 %	20%
75-00-3	Chloroethane	10	9.5	95 %	10	9.1	91 %	5 %	70 - 130 %	20%
75-69-4	Trichlorofluoromethane	10	13	126 %	10	12	119 %	6 %	70 - 130 %	20%
60-29-7	Diethyl Ether	20	19	96 %	20	18	92 %	4 %	70 - 130 %	20%
75-35-4	1,1-Dichloroethene	10	10	101 %	10	9.7	97 %	4 %	70 - 130 %	20%
76-13-1	1,1,2-Trichlorotrifluoroethane	20	28	138 % q	20	27	135 % q	2 %	70 - 130 %	20%
67-64-1	Acetone	20	17	86 %	20	16	81 %	7 %	70 - 130 %	20%
75-15-0	Carbon Disulfide	20	23	116 %	20	22	109 %	6 %	70 - 130 %	20%
75-09-2	Methylene Chloride	10	10	104 %	10	9.7	97 %	6 %	70 - 130 %	20%
107-13-1	Acrylonitrile	10	9.4	94 %	10	9.1	91 %	3 %	70 - 130 %	20%
156-60-5	trans-1,2-Dichloroethene	10	10	105 %	10	10	100 %	5 %	70 - 130 %	20%
1634-04-4	Methyl tert-butyl Ether (MTBE)	10	9.8	98 %	10	9.6	96 %	2 %	70 - 130 %	20%
75-34-3	1,1-Dichloroethane	10	9.6	96 %	10	9.2	92 %	4 %	70 - 130 %	20%
594-20-7	2,2-Dichloropropane	10	12	117 %	10	11	113 %	4 %	70 - 130 %	20%
156-59-2	cis-1,2-Dichloroethene	10	11	108 %	10	10	103 %	4 %	70 - 130 %	20%
78-93-3	2-Butanone (MEK)	20	18	91 %	20	18	88 %	3 %	70 - 130 %	20%
74-97-5	Bromochloromethane	10	10	105 %	10	10	105 %	0 %	70 - 130 %	20%
109-99-9	Tetrahydrofuran (THF)	20	20	99 %	20	19	93 %	7 %	70 - 130 %	20%
67-66-3	Chloroform	10	9.8	98 %	10	9.8	98 %	0 %	70 - 130 %	20%
71-55-6	1,1,1-Trichloroethane	10	11	111 %	10	11	107 %	4 %	70 - 130 %	20%
56-23-5	Carbon Tetrachloride	10	12	116 %	10	11	109 %	6 %	70 - 130 %	20%
563-58-6	1,1-Dichloropropene	10	10	104 %	10	9.8	98 %	6 %	70 - 130 %	20%
71-43-2	Benzene	10	10	100 %	10	9.6	96 %	4 %	70 - 130 %	20%
107-06-2	1,2-Dichloroethane	10	9.5	95 %	10	9.1	91 %	4 %	70 - 130 %	20%
79-01-6	Trichloroethene	10	10	100 %	10	9.5	95 %	5 %	70 - 130 %	20%
78-87-5	1,2-Dichloropropane	10	9.7	97 %	10	9.3	93 %	4 %	70 - 130 %	20%
74-95-3	Dibromomethane	10	10	100 %	10	9.6	96 %	4 %	70 - 130 %	20%
75-27-4	Bromodichloromethane	10	10	100 %	10	9.6	96 %	4 %	70 - 130 %	20%
123-91-1	1,4-Dioxane	200	200	98 %	200	210	105 %	7 %	70 - 130 %	20%
10061-01-5	cis-1,3-Dichloropropene	10	9.3	93 %	10	8.8	88 %	5 %	70 - 130 %	20%
108-10-1	4-Methyl-2-Pentanone (MIBK)	20	20	98 %	20	19	95 %	3 %	70 - 130 %	20%
108-88-3	Toluene	10	10	104 %	10	9.9	99 %	5 %	70 - 130 %	20%
10061-02-6	trans-1,3-Dichloropropene	10	9.1	91 %	10	8.9	89 %	2 %	70 - 130 %	20%
79-00-5	1,1,2-Trichloroethane	10	9.9	99 %	10	10	100 %	1 %	70 - 130 %	20%
127-18-4	Tetrachloroethene	10	12	124 %	10	12	121 %	2 %	70 - 130 %	20%
142-28-9	1,3-Dichloropropane	10	9.8	98 %	10	9.6	96 %	2 %	70 - 130 %	20%
591-78-6	2-Hexanone	20	20	102 %	20	19	96 %	7 %	70 - 130 %	20%
124-48-1	Dibromochloromethane	10	12	117 %	10	11	111 %	5 %	70 - 130 %	20%
106-93-4	1,2-Dibromoethane (EDB)	10	11	107 %	10	11	107 %	0 %	70 - 130 %	20%
108-90-7	Chlorobenzene	10	10	104 %	10	10	102 %	2 %	70 - 130 %	20%
630-20-6	1,1,1,2-Tetrachloroethane	10	11	110 %	10	11	111 %	1 %	70 - 130 %	20%
100-41-4	Ethylbenzene	10	10	105 %	10	10	104 %	1 %	70 - 130 %	20%
108-38-3/106-42-3	meta-Xylene and para-Xylene	20	22	110 %	20	22	108 %	2 %	70 - 130 %	20%
95-47-6	ortho-Xylene	10	11	108 %	10	11	107 %	2 %	70 - 130 %	20%
100-42-5	Styrene	10	11	106 %	10	10	103 %	3 %	70 - 130 %	20%
75-25-2	Bromoform	10	11	107 %	10	10	104 %	3 %	70 - 130 %	20%

Quality Control Report Laboratory Control Samples

Category: EPA Method 8260B
QC Batch ID: VM10-1231-W
Matrix: Aqueous
Units: ug/L

LCS
Instrument ID: MS-10 HP 6890
Analyzed: 02-03-11 06:45
Analyst: LMG

LCS
Instrument ID: MS-10 HP 6890
Analyzed: 02-03-11 07:07
Analyst: LMG

Page: 2 of 2

CAS Number	Analyte	LCS			LCS Duplicate			RPD	QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery		Spike	RPD
98-82-8	Isopropylbenzene	10	8.8	88 %	10	8.7	87 %	2 %	70 - 130 %	20%
108-86-1	Bromobenzene	10	11	107 %	10	11	106 %	1 %	70 - 130 %	20%
79-34-5	1,1,2,2-Tetrachloroethane	10	10	100 %	10	10	101 %	1 %	70 - 130 %	20%
96-18-4	1,2,3-Trichloropropane	10	9.6	96 %	10	9.4	94 %	2 %	70 - 130 %	20%
110-57-6	trans-1,4-Dichloro-2-butene	200	260	130 %	200	250	124 %	5 %	70 - 130 %	20%
103-65-1	n-Propylbenzene	10	10	102 %	10	9.9	99 %	3 %	70 - 130 %	20%
95-49-8	2-Chlorotoluene	10	11	109 %	10	10	103 %	5 %	70 - 130 %	20%
108-67-8	1,3,5-Trimethylbenzene	10	11	106 %	10	10	104 %	2 %	70 - 130 %	20%
106-43-4	4-Chlorotoluene	10	10	102 %	10	9.9	99 %	3 %	70 - 130 %	20%
98-06-6	tert-Butylbenzene	10	10	104 %	10	10	100 %	4 %	70 - 130 %	20%
95-63-6	1,2,4-Trimethylbenzene	10	11	106 %	10	10	103 %	3 %	70 - 130 %	20%
135-98-8	sec-Butylbenzene	10	11	107 %	10	10	104 %	3 %	70 - 130 %	20%
541-73-1	1,3-Dichlorobenzene	10	11	106 %	10	10	103 %	2 %	70 - 130 %	20%
99-87-6	4-Isopropyltoluene	10	10	104 %	10	10	102 %	2 %	70 - 130 %	20%
106-46-7	1,4-Dichlorobenzene	10	10	104 %	10	10	102 %	2 %	70 - 130 %	20%
95-50-1	1,2-Dichlorobenzene	10	10	104 %	10	10	103 %	1 %	70 - 130 %	20%
104-51-8	n-Butylbenzene	10	11	109 %	10	11	106 %	2 %	70 - 130 %	20%
96-12-8	1,2-Dibromo-3-chloropropane	10	9.8	98 %	10	9.4	94 %	4 %	70 - 130 %	20%
108-70-3	1,3,5-Trichlorobenzene	10	11	114 %	10	11	113 %	1 %	70 - 130 %	20%
120-82-1	1,2,4-Trichlorobenzene	10	11	114 %	10	12	115 %	1 %	70 - 130 %	20%
87-68-3	Hexachlorobutadiene	10	13	133 % q	10	13	132 % q	1 %	70 - 130 %	20%
91-20-3	Naphthalene	10	9.7	97 %	10	9.5	95 %	2 %	70 - 130 %	20%
87-61-6	1,2,3-Trichlorobenzene	10	12	120 %	10	12	120 %	0 %	70 - 130 %	20%
75-65-0	tert-Butyl Alcohol (TBA)	200	190	94 %	200	180	90 %	5 %	70 - 130 %	20%
108-20-3	Di-isopropyl Ether (DIPE)	10	8.6	86 %	10	8.6	86 %	1 %	70 - 130 %	20%
637-92-3	Ethyl tert-butyl Ether (ETBE)	10	8.7	87 %	10	8.5	85 %	2 %	70 - 130 %	20%
994-05-8	tert-Amyl Methyl Ether (TAME)	10	8.2	82 %	10	8.1	81 %	1 %	70 - 130 %	20%
QC Surrogate Compound		Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits	
Dibromofluoromethane		10	11	113 %	10	11	112 %		70 - 130 %	
1,2-Dichloroethane-d ₄		10	11	109 %	10	10	103 %		70 - 130 %	
Toluene-d ₈		10	11	112 %	10	11	109 %		70 - 130 %	
4-Bromofluorobenzene		10	10	103 %	10	10	103 %		70 - 130 %	

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

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

q Recovery outside recommended limits.

Quality Control Report Method Blank

Category: EPA Method 8260B
QC Batch ID: VM10-1231-W
Matrix: Aqueous

Instrument ID: MS-10 HP 6890
Analyzed: 02-03-11 07:30
Analyst: LMC

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

Quality Control Report Method Blank

Category: EPA Method 8260B
QC Batch ID: VM10-1231-W
Matrix: Aqueous

Instrument ID: MS-10 HP 6890
Analyzed: 02-03-11 07:30
Analyst: LMG

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

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	11	115 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	11	114 %	70 - 130 %
Toluene-d ₈	10	11	115 %	70 - 130 %
4-Bromofluorobenzene	10	10	100 %	70 - 130 %

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

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

Quality Control Report Laboratory Control Samples

Category: EPA 8270C (Part 1)
QC Batch ID: SV-2613-F
Matrix: Aqueous
Units: ug/L

LCS
Instrument ID: MS-3 HP 5890
Extracted: 02-04-11 09:00
Analyzed: 02-08-11 10:26
Analyst: MJB

LCS
Instrument ID: MS-3 HP 5890
Extracted: 02-04-11 09:00
Analyzed: 02-08-11 11:08
Analyst: MJB

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CAS Number	Analyte	LCS			LCS Duplicate			RPD	QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery		Spike	RPD
62-75-9	N-Nitrosodimethylamine	50	30	60 %	50	30	59 %	1 %	40 - 140 %	20%
110-86-1	Pyridine	50	25	51 %	50	26	52 %	2 %	40 - 140 %	20%
108-95-2	Phenol	50	24	47 %	50	22	45 %	5 %	30 - 130 %	20%
62-53-3	Aniline	50	31	62 %	50	33	66 %	6 %	40 - 140 %	20%
111-44-4	Bis(2-chloroethyl) ether	50	35	70 %	50	34	69 %	1 %	40 - 140 %	20%
95-57-8	2-Chlorophenol	50	34	68 %	50	33	67 %	2 %	30 - 130 %	20%
541-73-1	1,3-Dichlorobenzene	50	34	68 %	50	33	66 %	2 %	40 - 140 %	20%
106-46-7	1,4-Dichlorobenzene	50	34	68 %	50	34	67 %	1 %	40 - 140 %	20%
100-51-6	Benzyl Alcohol	50	38	77 %	50	37	75 %	3 %	30 - 130 %	20%
95-50-1	1,2-Dichlorobenzene	50	35	70 %	50	35	69 %	2 %	40 - 140 %	20%
95-48-7	2-Methylphenol	50	36	73 %	50	35	69 %	5 %	30 - 130 %	20%
108-60-1	Bis(2-chloroisopropyl) ether	50	35	70 %	50	34	68 %	2 %	40 - 140 %	20%
106-44-5	4-Methylphenol	50	35	71 %	50	34	67 %	5 %	30 - 130 %	20%
621-64-7	N-Nitrosodi-n-propylamine	50	40	79 %	50	39	77 %	3 %	40 - 140 %	20%
98-86-2	Acetophenone	50	41	82 %	50	41	81 %	1 %	40 - 140 %	20%
67-72-1	Hexachloroethane	50	32	64 %	50	31	63 %	2 %	40 - 140 %	20%
98-95-3	Nitrobenzene	50	31	61 %	50	30	61 %	0 %	40 - 140 %	20%
78-59-1	Isophorone	50	34	67 %	50	33	66 %	2 %	40 - 140 %	20%
88-75-5	2-Nitrophenol	50	33	66 %	50	33	66 %	1 %	30 - 130 %	20%
105-67-9	2,4-Dimethylphenol	50	32	63 %	50	30	61 %	4 %	30 - 130 %	20%
111-91-1	Bis(2-chloroethoxy) methane	50	33	67 %	50	33	65 %	2 %	40 - 140 %	20%
120-83-2	2,4-Dichlorophenol	50	33	67 %	50	33	66 %	1 %	30 - 130 %	20%
120-82-1	1,2,4-Trichlorobenzene	50	30	60 %	50	30	60 %	0 %	40 - 140 %	20%
106-47-8	4-Chloroaniline	50	34	68 %	50	34	68 %	0 %	40 - 140 %	20%
87-68-3	Hexachlorobutadiene	50	30	59 %	50	29	58 %	1 %	40 - 140 %	20%
59-50-7	4-Chloro-3-methylphenol	50	38	76 %	50	35	70 %	8 %	30 - 130 %	20%
77-47-4	Hexachlorocyclopentadiene	50	19	39 %	50	20	41 %	5 %	40 - 140 %	20%
88-06-2	2,4,6-Trichlorophenol	50	46	91 %	50	44	88 %	4 %	30 - 130 %	20%
95-95-4	2,4,5-Trichlorophenol	50	46	93 %	50	45	91 %	2 %	30 - 130 %	20%
91-58-7	2-Chloronaphthalene	50	42	84 %	50	41	82 %	1 %	40 - 140 %	20%
88-74-4	2-Nitroaniline	50	46	92 %	50	43	87 %	6 %	40 - 140 %	20%
100-25-4	1,4-Dinitrobenzene	50	49	98 %	50	48	96 %	3 %	40 - 140 %	20%
131-11-3	Dimethyl phthalate	50	47	94 %	50	46	92 %	2 %	40 - 140 %	20%
99-65-0	1,3-Dinitrobenzene	50	48	96 %	50	47	94 %	1 %	40 - 140 %	20%
606-20-2	2,6-Dinitrotoluene	50	47	95 %	50	46	93 %	2 %	40 - 140 %	20%
528-29-0	1,2-Dinitrobenzene	50	47	94 %	50	46	92 %	2 %	40 - 140 %	20%
99-09-2	3-Nitroaniline	50	47	93 %	50	46	93 %	1 %	40 - 140 %	20%
51-28-5	2,4-Dinitrophenol	50	53	107 %	50	52	105 %	2 %	30 - 130 %	20%
100-02-7	4-Nitrophenol	50	29	58 %	50	29	59 %	1 %	30 - 130 %	20%
132-64-9	Dibenzofuran	50	46	91 %	50	44	89 %	3 %	40 - 140 %	20%
121-14-2	2,4-Dinitrotoluene	50	49	98 %	50	48	96 %	2 %	40 - 140 %	20%
84-66-2	Diethyl phthalate	50	48	96 %	50	50	100 %	4 %	40 - 140 %	20%
7005-72-3	4-Chlorophenyl phenyl ether	50	47	93 %	50	45	90 %	3 %	40 - 140 %	20%
100-01-6	4-Nitroaniline	50	46	92 %	50	46	92 %	0 %	40 - 140 %	20%
534-52-1	4,6-Dinitro-2-methylphenol	50	51	102 %	50	50	100 %	2 %	30 - 130 %	20%
86-30-6	N-Nitrosodiphenylamine	50	47	93 %	50	44	87 %	7 %	40 - 140 %	20%
122-66-7	1,2-Diphenylhydrazine	50	46	93 %	50	45	89 %	4 %	40 - 140 %	20%
101-55-3	4-Bromophenyl phenyl ether	50	48	96 %	50	47	93 %	2 %	40 - 140 %	20%

Quality Control Report Laboratory Control Samples

Category:	EPA 8270C (Part 1)	LCS	Instrument ID:	MS-3 HP 5890	LCSD	Instrument ID:	MS-3 HP 5890
QC Batch ID:	SV-2613-F	Extracted:	02-04-11 09:00	Extracted:	02-04-11 09:00	Analyzed:	02-08-11 11:08
Matrix:	Aqueous	Analyzed:	02-08-11 10:26	Analyzed:	02-08-11 11:08	Analyt:	MJB
Units:	ug/L	Analyt:	MJB	Analyt:	MJB		

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CAS Number	Analyte	LCS			LCS Duplicate			RPD	QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery		Spike	RPD
86-74-8	Carbazole	50	50	99 %	50	48	97 %	2 %	40 - 140 %	20%
84-74-2	Di-n-butyl phthalate	50	50	101 %	50	50	99 %	1 %	40 - 140 %	20%
85-68-7	Butyl benzyl phthalate	50	51	102 %	50	50	100 %	2 %	40 - 140 %	20%
91-94-1	3,3'-Dichlorobenzidine	50	42	84 %	50	42	83 %	1 %	40 - 140 %	20%
117-81-7	Bis(2-ethylhexyl) phthalate	50	50	101 %	50	50	100 %	0 %	40 - 140 %	20%
117-84-0	Di-n-octyl phthalate	50	52	103 %	50	51	102 %	1 %	40 - 140 %	20%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	10	50 %	20	9.6	48 %	15 - 110 %
Phenol-d5	20	8.8	44 %	20	8.3	42 %	15 - 110 %
Nitrobenzene-d5	10	8.7	87 %	10	8.4	84 %	30 - 130 %
2-Fluorobiphenyl	10	9.1	91 %	10	8.7	87 %	30 - 130 %
2,4,6-Tribromophenol	20	20	101 %	20	20	99 %	15 - 110 %
Terphenyl-d14	10	11	110 %	10	11	108 %	30 - 130 %

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

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

- † Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.
- ◊ Analyzed as Azobenzene.
- q Recovery outside recommended limits.

Quality Control Report Method Blank

Category: EPA Method 8270C (Part 1)
QC Batch ID: SV-2613-F
Matrix: Aqueous

Instrument ID: MS-3 HP 5890
Extracted: 02-04-11 09:00
Analyzed: 02-08-11 11:49
Analyst: MJB

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

Quality Control Report Method Blank

Category: EPA Method 8270C (Part 1)
QC Batch ID: SV-2613-F
Matrix: Aqueous

Instrument ID: MS-3 HP 5890
Extracted: 02-04-11 09:00
Analyzed: 02-08-11 11:49
Analyst: MJB

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

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	9	46 %	15 - 110 %
Phenol-d5	20	8	42 %	15 - 110 %
Nitrobenzene-d5	10	6	62 %	30 - 130 %
2-Fluorobiphenyl	10	9	87 %	30 - 130 %
2,4,6-Tribromophenol	20	16	82 %	15 - 110 %
Terphenyl-d14	10	10	98 %	30 - 130 %

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

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

* Analyzed as 4-Methylphenol:

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

Quality Control Report Laboratory Control Samples

Category: EPA 8270C (Part 2)
QC Batch ID: SV-2613-F
Matrix: Aqueous
Units: ug/L

LCS
Instrument ID: MS-6 HP 6890
Extracted: 02-04-11 09:00
Analyzed: 02-09-11 16:38
Analyst: MJB

LCSD
Instrument ID: MS-6 HP 6890
Extracted: 02-04-11 09:00
Analyzed: 02-09-11 17:18
Analyst: MJB

CAS Number	Analyte	LCS			LCS Duplicate			RPD	QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery		Spike	RPD
91-20-3	Naphthalene	5.0	2.8	55 %	5.0	2.9	58 %	5 %	40 - 140 %	20%
91-57-6	2-Methylnaphthalene	5.0	3.2	64 %	5.0	3.2	65 %	1 %	40 - 140 %	20%
208-96-8	Acenaphthylene	5.0	3.7	74 %	5.0	3.8	75 %	1 %	40 - 140 %	20%
83-32-9	Acenaphthene	5.0	3.6	72 %	5.0	3.6	72 %	0 %	40 - 140 %	20%
86-73-7	Fluorene	5.0	3.8	77 %	5.0	3.8	77 %	0 %	40 - 140 %	20%
85-01-8	Phenanthrene	5.0	3.7	74 %	5.0	3.6	72 %	2 %	40 - 140 %	20%
120-12-7	Anthracene	5.0	4.2	85 %	5.0	4.1	82 %	3 %	40 - 140 %	20%
206-44-0	Fluoranthene	5.0	3.8	77 %	5.0	3.7	75 %	3 %	40 - 140 %	20%
129-00-0	Pyrene	5.0	3.9	78 %	5.0	3.9	78 %	0 %	40 - 140 %	20%
56-55-3	Benzo[a]anthracene	5.0	4.1	81 %	5.0	4.1	81 %	0 %	40 - 140 %	20%
218-01-9	Chrysene	5.0	3.8	76 %	5.0	3.8	76 %	0 %	40 - 140 %	20%
205-99-2	Benzo[b]fluoranthene	5.0	4.1	82 %	5.0	4.2	84 %	3 %	40 - 140 %	20%
207-08-9	Benzo[k]fluoranthene	5.0	4.0	79 %	5.0	4.0	81 %	2 %	40 - 140 %	20%
50-32-8	Benzo[a]pyrene	5.0	4.0	80 %	5.0	4.1	82 %	2 %	40 - 140 %	20%
193-39-5	Indeno[1,2,3-c,d]pyrene	5.0	4.0	80 %	5.0	4.1	82 %	3 %	40 - 140 %	20%
53-70-3	Dibenzo[a,h]anthracene	5.0	4.0	80 %	5.0	4.1	82 %	2 %	40 - 140 %	20%
191-24-2	Benzo[g,h,i]perylene	5.0	3.8	77 %	5.0	4.0	79 %	3 %	40 - 140 %	20%
87-68-3	Hexachlorobutadiene	5.0	2.8	57 %	5.0	2.9	57 %	1 %	40 - 140 %	20%
118-74-1	Hexachlorobenzene	5.0	4.0	79 %	5.0	3.8	77 %	4 %	40 - 140 %	20%
87-86-5	Pentachlorophenol	5.0	4.0	79 %	5.0	4.0	81 %	2 %	30 - 130 %	20%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	9.0	45 %	20	9.4	47 %	15 - 110 %
Phenol-d5	20	8.0	40 %	20	8.2	41 %	15 - 110 %
Nitrobenzene-d5	10	5.8	58 %	10	6.3	63 %	30 - 130 %
2-Fluorobiphenyl	10	6.5	65 %	10	6.6	66 %	30 - 130 %
2,4,6-Tribromophenol	20	17	87 %	20	17	83 %	15 - 110 %
Terphenyl-d14	10	7.3	73 %	10	7.5	75 %	30 - 130 %

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

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

Quality Control Report Method Blank

Category: EPA Method 8270C (Part 2)
QC Batch ID: SV-2613-F
Matrix: Aqueous

Instrument ID: MS-6 HP 6890
Extracted: 02-04-11 09:00
Analyzed: 02-09-11 17:59
Analyst: MJB

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/L	0.2
91-57-6	2-Methylnaphthalene	BRL		ug/L	0.2
208-96-8	Acenaphthylene	BRL		ug/L	0.2
83-32-9	Acenaphthene	BRL		ug/L	0.2
86-73-7	Fluorene	BRL		ug/L	0.2
85-01-8	Phenanthrene	BRL		ug/L	0.2
120-12-7	Anthracene	BRL		ug/L	0.2
206-44-0	Fluoranthene	BRL		ug/L	0.2
129-00-0	Pyrene	BRL		ug/L	0.2
56-55-3	Benzo[a]anthracene	BRL		ug/L	0.1
218-01-9	Chrysene	BRL		ug/L	0.1
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	0.1
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	0.1
50-32-8	Benzo[a]pyrene	BRL		ug/L	0.1
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	0.1
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	0.1
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	0.1
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
118-74-1	Hexachlorobenzene	BRL		ug/L	0.5
87-86-5	Pentachlorophenol	BRL		ug/L	1.0

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	8.6	43 %	15 - 110 %
Phenol-d5	20	7.8	39 %	15 - 110 %
Nitrobenzene-d5	10	6.7	67 %	30 - 130 %
2-Fluorobiphenyl	10	6.4	64 %	30 - 130 %
2,4,6-Tribromophenol	20	14	71 %	15 - 110 %
Terphenyl-d14	10	7.6	76 %	30 - 130 %

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

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

Certifications and Approvals

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

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

CONNECTICUT

Department of Health Services, PH-0586

http://www.ct.gov/dph/iib/dph/environmental_laboratories/pdf/Out_State.pdf

Potable Water, Wastewater, Solid Waste and Soil

MASSACHUSETTS

Department of Environmental Protection, M-MA-103

http://public.dep.state.ma.us/labcert/labcert.aspx

Potable Water and Non-Potable Water

Department of Labor,

Division of Occupational Safety, AA000195

http://www.mass.gov/dos/forms/la-rpt_list_aa.pdf

Asbestos Analytical Services, Class A

NEW HAMPSHIRE

Department of Environmental Services, 202708

http://www4.egov.nh.gov/DES/NHELAP

Potable Water, Non-Potable Water, Solid and Chemical Materials

NEW YORK

Department of Health, 11754

http://www.wadsworth.org/labcert/elap/comm.html

Potable Water, Non-Potable Water, Solid and Hazardous Waste

RHODE ISLAND

Department of Health,

Division of Laboratories, LAO00054

http://www.health.ri.gov/labs/outofstatelabs.pdf

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

U.S. DEPARTMENT OF AGRICULTURE

USDA, Soil Permit, S-53921

Foreign soil import permit

VERMONT

Department of Health, VT-87643

http://healthvermont.gov/enviro/ph_lab/water_test.aspx#cert

Potable Water

Certifications and Approvals

MASSACHUSETTS

Department of Environmental Protection, M-MA-103

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

Potable Water (Drinking Water)		Non-Potable Water (Wastewater)	
Analyte	Method	Analyte	Method
1,2-Dibromo-3-Chloropropane	EPA 504.1	Aluminum	EPA 200.8
1,2-Dibromoethane	EPA 504.1	Ammonia-N	Lachat 10-107-06-1-B
Alkalinity, Total	SM 2320-B	Antimony	EPA 200.7
Antimony	EPA 200.8	Antimony	EPA 200.8
Arsenic	EPA 200.8	Arsenic	EPA 200.7
Barium	EPA 200.7	Arsenic	EPA 200.8
Barium	EPA 200.8	Beryllium	EPA 200.7
Beryllium	EPA 200.7	Beryllium	EPA 200.8
Beryllium	EPA 200.8	Beta-BHC	EPA 608
Cadmium	EPA 200.7	Biochemical Oxygen Demand	SM 5210-B
Cadmium	EPA 200.8	Cadmium	EPA 200.7
Calcium	EPA 200.7	Cadmium	EPA 200.8
Chlorine, Residual Free	SM 4500-CL-G	Calcium	EPA 200.7
Chromium	EPA 200.7	Chemical Oxygen Demand	SM 5220-D
Copper	EPA 200.7	Chlordane	EPA 608
Copper	EPA 200.8	Chloride	EPA 300.0
Cyanide, Total	Lachat 10-204-00-1-A	Chlorine, Total Residual	SM 4500-CL-G
E. Coli (Treatment and Distribution)	Enz. Sub. SM 9223	Chromium	EPA 200.7
E. Coli (Treatment and Distribution)	NA-MUG SM 9222-G	Chromium	EPA 200.8
Fecal Coliform (Source Water)	MF SM 9222-D	Cobalt	EPA 200.7
Fluoride	EPA 300.0	Cobalt	EPA 200.8
Fluoride	SM 4500-F-C	Copper	EPA 200.7
Haloacetic Acids	EPA 552.2	Copper	EPA 200.8
Heterotrophic Plate Count	SM 9215-B	Cyanide, Total	Lachat 10-204-00-1-A
Lead	EPA 200.8	DDD	EPA 608
Mercury	EPA 245.1	DDE	EPA 608
Nickel	EPA 200.7	DDT	EPA 608
Nickel	EPA 200.8	Delta-BHC	EPA 608
Nitrate-N	EPA 300.0	Dieldrin	EPA 608
Nitrate-N	Lachat 10-107-04-1-C	Endosulfan I	EPA 608
Nitrite-N	EPA 300.0	Endosulfan II	EPA 608
Nitrite-N	Lachat 10-107-04-1-C	Endosulfan Sulfate	EPA 608
pH	SM 4500-H-B	Endrin	EPA 608
Selenium	EPA 200.8	Endrin Aldehyde	EPA 608
Silver	EPA 200.7	Gamma-BHC	EPA 608
Silver	EPA 200.8	Hardness (CaCO ₃), Total	EPA 200.7
Sodium	EPA 200.7	Hardness (CaCO ₃), Total	SM 2340-B
Sulfate	EPA 300.0	Heptachlor	EPA 608
Thallium	EPA 200.8	Heptachlor Epoxide	EPA 608
Total Coliform (Treatment and Distribution)	Enz. Sub. SM 9223	Iron	EPA 200.7
Total Coliform (Treatment and Distribution)	MF SM 9222-B	Kjeldahl-N	Lachat 10-107-06-02-D
Total Dissolved Solids	SM 2540-C	Lead	EPA 200.7
Trihalomethanes	EPA 524.2	Magnesium	EPA 200.7
Turbidity	SM 2130-B	Manganese	EPA 200.7
Volatile Organic Compounds	EPA 524.2	Manganese	EPA 200.8
		Mercury	EPA 245.1
		Molybdenum	EPA 200.7
		Molybdenum	EPA 200.8
		Nickel	EPA 200.7
		Nickel	EPA 200.8
		Nitrate-N	EPA 300.0
		Nitrate-N	Lachat 10-107-04-1-C
		Non-Filterable Residue	SM 2540-D
		Oil and Grease	EPA 1664
Non-Potable Water (Wastewater)			
Analyte	Method		
Aldrin	EPA 608		
Alkalinity, Total	SM 2320-B		
Alpha-BHC	EPA 608		
Aluminum	EPA 200.7		

Certifications and Approvals**MASSACHUSETTS****Department of Environmental Protection, M-MA-103**

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

Non-Potable Water (Wastewater)

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

GROUNDWATER ANALYTICAL

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Buzzards Bay, MA 02532

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

March 7, 2011

Mr. Matt Lyne
Environmental Compliance Services, Inc.
997 Milbury St
Worcester, MA 01607

LABORATORY REPORT

Project: **Acton CFI 289 Main St Acton MA/93-200000.00**
Lab ID: **140110**
Received: **03-03-11**

Dear Matt:

Enclosed are the analytical results for the above referenced project. The project was processed for Rush 48 Hour turnaround.

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

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

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

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

Sincerely,



Karyn E. Raymond
Project Manager

KER/nfm
Enclosures

Sample Receipt Report

Project: Acton CFI 289 Main St Acton MA/93-200000.0
 Client: Environmental Compliance Services, Inc.
 Lab ID: 140110

Delivery: GWA Courier
 Airbill: n/a
 Lab Receipt: 03-03-11

Temperature: 2.0°C
 Chain of Custody: Present
 Custody Seal(s): n/a

Lab ID	Field ID		Matrix	Sampled	Method				Notes
140110-1	TP-1		Aqueous	3/2/11 9:50	EPA 6010B Fe Pb Total				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1207841	250 mL Plastic	Scientific Specialist Service	BX36134	HNO3	R-6113E	04-16-10	n/a		
C1207915	250 mL Plastic	Scientific Specialist Service	BX36134	HNO3	R-6113E	04-16-10	n/a		

Data Certification

Project: Acton CFI 289 Main St Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.

Lab ID: 140110
Received: 03-03-11 18:25

Mass DEP Analytical Protocol Certification Form					
Project Location: n/a			MA DEP RTN: n/a		
This Form provides certifications for the following data set:					
EPA 6010B: 140110-1					
Sample Matrices: Groundwater/Surface (X) Soil/Sediment () Drinking Water () Air () Other ()					
CAM Protocol (check all that apply below):					
8260 VOC CAM II A ()	7470/7471 Hg CAM III B ()	Mass DEP VPH CAM IV A ()	8081 Pesticides CAM V B ()	7196 Hex Cr CAM VI B ()	Mass DEP APH CAM IX A ()
8270 SVOC CAM II B ()	7010 Metals CAM III C ()	Mass DEP 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 (X)	6020 Metals CAM III D ()	8082 PCB CAM V A ()	9012 Cyanide/PAC CAM VI A ()	6860 Perchlorate CAM VIII B ()	
An affirmative response 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
B.	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?				Yes
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
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
E.	VPH, EPH and APH methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).				n/a
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
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
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
I.	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?				No
All negative responses must be addressed in an attached laboratory narrative.					
I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.					
Signature:		Position: Project Manager			
Printed Name: Karyn E. Raymond		Date: 03-07-11			

Karyn E. Raymond

Trace Metals

Field ID: TP-1
Project: Acton CFI 289 Main St Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.

Matrix: Aqueous
Container: 250 mL Plastic
Preservation: HNO3 / Cool
Preserved: 03-02-11 09:50

Laboratory ID: 140110-1
Sampled: 03-02-11 09:50
Received: 03-03-11 18:25

<u>Analysis Method</u>	<u>QC Batch ID</u>	<u>Prep Method</u>	<u>Prepared</u>	<u>Sample Volume</u>	<u>Instrument ID</u>	<u>Analyst</u>
EPA 6010B ¹	MB-4335-W	EPA 3010A	03-04-11 00:00	50 mL	ICP-1 PE 3000	PD

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-89-6	Iron, Total	22		mg/L	0.1	1	03-04-11 17:17	EPA 6010B ¹
7439-92-1	Lead, Total	BRL		mg/L	0.005	1	03-04-11 17:17	EPA 6010B ¹

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

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

DF Dilution Factor.

Project Narrative

Project: Acton CFI 289 Main St Acton MA/93-200000.00
Client: Environmental Compliance Services, Inc.

Lab ID: 140110
Received: 03-03-11 18:25

A. Documentation and Client Communication

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

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

B. Method Modifications, Non-Conformances and Observations

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

1. EPA 6010B Note: Samples 140110-1. Samples were analyzed for selected target analytes, as requested by client.

Quality Assurance/Quality Control

A. Program Overview

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

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

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

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

B. Definitions

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

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

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

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

Quality Control Report Laboratory Control Samples

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

Sample Type	Method	QC Batch ID	Prep Method	Prepared	Analyzed	Instrument ID	Analyst
LCS	EPA 6010B	MB-4335-WL	EPA 3010A	03-04-11 00:00	03-04-11 16:39	ICP-1 PE 3000	PD
LCSD	EPA 6010B	MB-4335-WL	EPA 3010A	03-04-11 00:00	03-04-11 16:44	ICP-1 PE 3000	PD

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits		Method
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
7439-89-6	Iron	5.0	5.1	102%	5.0	5.1	102%	0 %	80-120 %	20 %	EPA 6010B
7439-92-1	Lead	5.0	5.3	106%	5.0	5.4	107%	0 %	80-120 %	20 %	EPA 6010B

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

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

**Quality Control Report
Method Blank**

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

<u>Analysis Method</u>	<u>QC Batch ID</u>	<u>Prep Method</u>	<u>Prepared</u>	<u>Sample Volume</u>	<u>Instrument ID</u>	<u>Analyst</u>
EPA 6010B	MB-4335-WB	EPA 3010A	03-04-11 00:00	50 mL	ICP-1 PE 3000	PD

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-89-6	Iron		BRL	mg/L	0.1	1	03-04-11 16:35	EPA 6010B
7439-92-1	Lead		BRL	mg/L	0.005	1	03-04-11 16:35	EPA 6010B

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

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

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states.

Copies of our current certificates may be obtained from our website:

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

CONNECTICUT

Department of Health Services, PH-0586

Potable Water, Wastewater, Solid Waste and Soil

http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/Out_State.pdf

MASSACHUSETTS

Department of Environmental Protection, M-MA-103

Potable Water and Non-Potable Water

<http://public.dep.state.ma.us/labcert/labcert.aspx>

Department of Labor,

Asbestos Analytical Services, Class A

Division of Occupational Safety, AA000195

http://www.mass.gov/dos/forms/la-rpt_list_aa.pdf

NEW HAMPSHIRE

Department of Environmental Services, 202708

Potable Water, Non-Potable Water, Solid and Chemical Materials

<http://www4.egov.nh.gov/DES/NHELAP>

NEW YORK

Department of Health, 11754

Potable Water, Non-Potable Water, Solid and Hazardous Waste

<http://www.wadsworth.org/labcert/elap/comm.html>

RHODE ISLAND

Department of Health,

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

Division of Laboratories, LAO00054

<http://www.health.ri.gov/labs/outofstatelabs.pdf>

U.S. DEPARTMENT OF AGRICULTURE

USDA, Soil Permit, S-53921

Foreign soil import permit

VERMONT

Department of Health, VT-87643

Potable Water

http://healthvermont.gov/enviro/ph_lab/water_test.aspx#cert

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Department of Environmental Protection, M-MA-103

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Potable Water (Drinking Water)		Non-Potable Water (Wastewater)	
Analyte	Method	Analyte	Method
1,2-Dibromo-3-Chloropropane	EPA 504.1	Aluminum	EPA 200.8
1,2-Dibromoethane	EPA 504.1	Ammonia-N	Lachat 10-107-06-1-B
Alkalinity, Total	SM 2320-B	Antimony	EPA 200.7
Antimony	EPA 200.8	Antimony	EPA 200.8
Arsenic	EPA 200.8	Arsenic	EPA 200.7
Barium	EPA 200.7	Arsenic	EPA 200.8
Barium	EPA 200.8	Beryllium	EPA 200.7
Beryllium	EPA 200.7	Beryllium	EPA 200.8
Beryllium	EPA 200.8	Beta-BHC	EPA 608
Cadmium	EPA 200.7	Biochemical Oxygen Demand	SM 5210-B
Cadmium	EPA 200.8	Cadmium	EPA 200.7
Calcium	EPA 200.7	Cadmium	EPA 200.8
Chlorine, Residual Free	SM 4500-CL-G	Calcium	EPA 200.7
Chromium	EPA 200.7	Chemical Oxygen Demand	SM 5220-D
Copper	EPA 200.7	Chlordane	EPA 608
Copper	EPA 200.8	Chloride	EPA 300.0
Cyanide, Total	Lachat 10-204-00-1-A	Chlorine, Total Residual	SM 4500-CL-G
E. Coli (Treatment and Distribution)	Enz. Sub. SM 9223	Chromium	EPA 200.7
E. Coli (Treatment and Distribution)	NA-MUG SM 9222-G	Chromium	EPA 200.8
Fecal Coliform (Source Water)	MF SM 9222-D	Cobalt	EPA 200.7
Fluoride	EPA 300.0	Cobalt	EPA 200.8
Fluoride	SM 4500-F-C	Copper	EPA 200.7
Haloacetic Acids	EPA 552.2	Copper	EPA 200.8
Heterotrophic Plate Count	SM 9215-B	Cyanide, Total	Lachat 10-204-00-1-A
Lead	EPA 200.8	DDD	EPA 608
Mercury	EPA 245.1	DDE	EPA 608
Nickel	EPA 200.7	DDT	EPA 608
Nickel	EPA 200.8	Delta-BHC	EPA 608
Nitrate-N	EPA 300.0	Dieldrin	EPA 608
Nitrate-N	Lachat 10-107-04-1-C	Endosulfan I	EPA 608
Nitrite-N	EPA 300.0	Endosulfan II	EPA 608
Nitrite-N	Lachat 10-107-04-1-C	Endosulfan Sulfate	EPA 608
pH	SM 4500-H-B	Endrin	EPA 608
Selenium	EPA 200.8	Endrin Aldehyde	EPA 608
Silver	EPA 200.7	Gamma-BHC	EPA 608
Silver	EPA 200.8	Hardness (CaCO ₃), Total	EPA 200.7
Sodium	EPA 200.7	Hardness (CaCO ₃), Total	SM 2340-B
Sulfate	EPA 300.0	Heptachlor	EPA 608
Thallium	EPA 200.8	Heptachlor Epoxide	EPA 608
Total Coliform (Treatment and Distribution)	Enz. Sub. SM 9223	Iron	EPA 200.7
Total Coliform (Treatment and Distribution)	MF SM 9222-B	Kjeldahl-N	Lachat 10-107-06-02-D
Total Dissolved Solids	SM 2540-C	Lead	EPA 200.7
Trihalomethanes	EPA 524.2	Magnesium	EPA 200.7
Turbidity	SM 2130-B	Manganese	EPA 200.7
Volatile Organic Compounds	EPA 524.2	Manganese	EPA 200.8
		Mercury	EPA 245.1
		Molybdenum	EPA 200.7
		Molybdenum	EPA 200.8
		Nickel	EPA 200.7
		Nickel	EPA 200.8
		Nitrate-N	EPA 300.0
		Nitrate-N	Lachat 10-107-04-1-C
		Non-Filterable Residue	SM 2540-D
		Oil and Grease	EPA 1664
Non-Potable Water (Wastewater)			
Analyte	Method		
Aldrin	EPA 608		
Alkalinity, Total	SM 2320-B		
Alpha-BHC	EPA 608		
Aluminum	EPA 200.7		

Certifications and Approvals**MASSACHUSETTS****Department of Environmental Protection, M-MA-103**

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

**Non-Potable Water (Wastewater)
Analyte****Method**

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