



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 1

5 Post Office Square, Suite 100

BOSTON, MA 02109-3912

CERTIFIED MAIL RETURN RECEIPT REQUESTED

AUG 31 2011

Matthew Young
Senior Project Manager
Cumberland Farms Inc.
100 Crossing Boulevard
Framingham, MA 01702

Re: Authorization to discharge under the Remediation General Permit (RGP) –
MAG910000. Cumberland Farms site located at 186 West Main Street, Dudley,
Massachusetts 01571 Worcester County; Authorization # MAG910499

Dear Mr. Young:

Based on the review of a Notice of Intent (NOI) submitted on behalf of Cumberland Farms by the firm Environmental Compliance Services, Inc., for the site referenced above, the U.S. Environmental Protection Agency (EPA) hereby authorizes you, as the named Owner and 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 ter-Butyl Alcohol 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 included on the checklist are dilution dependent pollutants and subject to limitations based on a dilution factor range (DFR). With the absence of dilution to wetlands, EPA determined that the DFR for each parameter is in the one and five (1-5) range. (See the RGP Appendix IV for Massachusetts facilities)

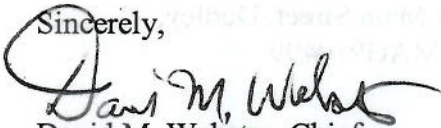
Therefore, the limits for zinc of 66.6ug/L and iron of 1,000ug/L, are required to achieve permit compliance at your site.

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

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on 10/12/11. If for any reason the discharge terminates sooner you are required to submit a Notice of Termination (NOT) to the attention of the contact person indicated below within 30 days of project completion.

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

Sincerely,



David M. Webster, Chief
Industrial Permits Branch

Enclosure

cc: Kathleen Keohane, MassDEP
Nicholas O. Murdock, ECS, Inc.

**2010 Remediation General Permit
Summary of Monitoring Parameters^[1]**

NPDES Authorization Number:	MAG910499 – New
Authorization Issued:	August, 2011
Facility/Site Name:	Cumberland Farms
Facility/Site Address:	186 West Main Street, Dudley, MA 01571, Worcester County
	Email address of owner: myoung@cumberlandgulf.com
Legal Name of Operator:	Cumberland Farms, Inc.
Operator contact name, title, and Address:	Matthew Young, Senior Project Manager 100 Crossing Boulevard, Framingham, MA 01702
	Email: Same as the owner.
Estimated Date of Completion:	10/12/11
Category and Sub-Category:	Category I- Petroleum Related Site Remediation. Sub-category A. Gasoline Only Sites.
Permit Termination Date:	September 10, 2015
Receiving Water:	Unnamed Wetland across from this site.

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 10ug/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

	<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)
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L
	11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l/Me#8260C/ML 10ug/L
✓	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

	<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)
	b. Benzo(a) Pyrene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	c. Benzo(b)Fluoranthene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	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>Total Recoverable Metal Limit @ H ¹⁰ = 50 mg/l CaCO3 for discharges in Massachusetts (ug/l)</u> _{11/12}		<u>Minimum level=ML</u>
	<u>Metal parameter</u>	<u>Freshwater</u>	<u>Saltwater</u>	
	39. Antimony	5.6/ML	10	
	40. Arsenic **	10/ML	20	36/ML 20

	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		
	41. Cadmium **	0.2/ML10	8.9/ML 10		
	42. Chromium III (trivalent) **	48.8/ML15	100/ML 15		
	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.

⁹ Although the maximum value for total PCBs is 0.000064 ug/l, the compliance limit is equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 0.5 ug/l for Method 608 or 0.00005 ug/l when Method 1668a is approved).

¹⁰ Hardness. Cadmium, Chromium III, Copper, Lead, Nickel, Silver, and Zinc are Hardness Dependent.

¹¹ For a Dilution Factor (DF) from 1 to 5, metals limits are calculated using DF times the base limit for the metal. See Appendix IV. For example, iron limits are calculated using $DF \times 1,000 \text{ ug/L}$ (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

August 19, 2011
Project No. 03-216082

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
Cumberland Farms
186 West Main Street
Dudley, Massachusetts 01571

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: Matthew Young, Cumberland Farms, Inc., 100 Crossing Blvd, Framingham, MA 01702
Robert Kubit, MassDEP, Division of Watershed Management, 627 Main Street,
Worcester, MA 01608
Daniel Gion, Highway Superintendent, Town of Dudley, Town Hall, 40 Schofield Ave.,
Box 11, Dudley, MA 01570
MassDOT Highway Division, District 3, 403 Belmont Street, Worcester, MA 01604

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

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

a) Name of facility/site : Cumberland Farms		Facility/site mailing address:	
Location of facility/site : longitude: 42 2' 28.04" latitude: -71 54' 40.56"		Facility SIC code(s): 5541	Street: 186 West Main Street
b) Name of facility/site owner : Cumberland Farms, Inc.		Town: Dudley	
Email address of facility/site owner : myoung@cumberlandgulf.com		State: Massachusetts	Zip: 01571 County: Worcester
Telephone no. of facility/site owner : 508-270-4477			
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 : Cumberland Farms, Inc.		Operator telephone no.: 508-270-4477	
		Operator fax no.: 781-459-0454	Operator email: myoung@cumberlandgulf.co
Operator contact name and title: Matthew Young, Senior Project Manager			
Address of operator (if different from owner):		Street:	
Town:	State:	Zip:	County:

d) Check Y for "yes" or N for "no" for the following:

1. Has a prior NPDES permit exclusion been granted for the discharge? Y ☐ N ☒, if Y, number:

2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge? Y ☐ N ☒, if Y, date and tracking #:

3. Is the discharge a "new discharge" as defined by 40 CFR 122.2? Y ☒ N ☐

4. For sites in Massachusetts, is the discharge covered under the Massachusetts Contingency Plan (MCP) and exempt from state permitting? Y ☒ N ☐

e) Is site/facility subject to any State permitting, license, or other action which is causing the generation of discharge? Y ☐ N ☒ If Y, please list: 1. site identification # assigned by the state of NH or MA: 2. permit or license # assigned: 3. state agency contact information: name, location, and telephone number:	f) Is the site/facility covered by any other EPA permit, including: 1. Multi-Sector General Permit? Y ☐ N ☒, if Y, number: 2. Final Dewatering General Permit? Y ☐ N ☒, if Y, number: 3. EPA Construction General Permit? Y ☐ N ☒, if Y, number: 4. Individual NPDES permit? Y ☐ N ☒, if Y, number: 5. any other water quality related individual or general permit? Y ☐ N ☒, if Y, number:
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g) Is the site/facility located within or does it discharge to an Area of Critical Environmental Concern (ACEC)? Y ☐ N ☒

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

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

IV - Miscellaneous Related Discharges	A. Aquifer Pump Testing to Evaluate Formerly Contaminated Sites ☐ B. Well Development/Rehabilitation at Contaminated/Formerly Contaminated Sites ☐ C. Hydrostatic Testing of Pipelines and Tanks ☐ D. Long-Term Remediation of Contaminated Sumps and Dikes ☐ E. Short-term Contaminated Dredging Drain Back Waters (if not covered by 401/404 permit) ☐
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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 dewatering will be necessary to perform the upgrades. The discharge will be associated 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, ft ³ /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:	
pt.1: lat. 42 2' 27.39 long. -71 54' 40.40	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. etc.
4) If hydrostatic testing, total volume of the discharge (gals)	5) Is the discharge intermittent ☒ or seasonal ☐ ? Is discharge ongoing? Y ☐ N ☒
c) Expected dates of discharge (mm/dd/yy): start 09/12/11 end 10/12/11	
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.

<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>
1. Total Suspended Solids (TSS)		☒	☐	1	grab	SM 2504D	5,000	<5,000	0	<5,000	0
2. Total Residual Chlorine (TRC)		☒	☐	1	grab	SM 4500	20	<20	0	<20	0
3. Total Petroleum Hydrocarbons (TPH)		☒	☐								
4. Cyanide (CN)	57125	☒	☐	1	grab	EPA 9012B	10	<10	0	<10	0
5. Benzene (B)	71432	☒	☐	1	grab	EPA 8260B	0.5	<0.5	0	<0.5	0
6. Toluene (T)	108883	☒	☐	1	grab	EPA 8260B	0.5	<0.5	0	<0.5	0
7. Ethylbenzene (E)	100414	☒	☐	1	grab	EPA 8260B	0.5	<0.5	0	<0.5	0
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐	1	grab	EPA 8260B	1	<1	0	<1	0
9. Total BTEX ²	n/a	☒	☐	1	grab	EPA 8260B	2.5	<2.5	0	<2.5	0
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) ³	106934	☒	☐	1	grab	EPA 8011	0.02	<0.02	0	<0.02	0
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☒	☐	1	grab	EPA 8260B	0.5	<0.5	0	<0.5	0
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐	1	grab	EPA 8260B	20	<20	0	<20	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	0.5	<0.5	0	<0.5	0
14. Naphthalene	91203	☒	☐	1	grab	EPA 8260B	2.5	<2.5	0	<2.5	0
15. Carbon Tetrachloride	56235	☒	☐	1	grab	EPA 8260B	0.5	<0.5	0	<0.5	0
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	1	grab	EPA 8260B	6	<6	0	6	0
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	1	grab	EPA 8260B	6	<6	0	<6	0
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐	1	grab	EPA 8260B	6	<6	0	<6	0
18a. Total dichlorobenzene		☒	☐	1	grab	EPA 8260B	18	<18	0	<18	0
19. 1,1 Dichloroethane (DCA)	75343	☒	☐	1	grab	EPA 8260B	0.5	<0.5	0	<0.5	0
20. 1,2 Dichloroethane (DCA)	107062	☒	☐	1	grab	EPA 8260B	0.5	<0.5	0	<0.5	0
21. 1,1 Dichloroethene (DCE)	75354	☒	☐	1	grab	EPA 8260B	0.5	<0.5	0	<0.5	0
22. cis-1,2 Dichloroethene (DCE)	156592	☒	☐	1	grab	EPA 8260B	0.5	<0.5	0	<0.5	0
23. Methylene Chloride	75092	☒	☐	1	grab	EPA 8260B	2.5	<2.5	0	<2.5	0
24. Tetrachloroethene (PCE)	127184	☒	☐	1	grab	EPA 8260B	0.5	<0.5	0	<0.5	0
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐	1	grab	EPA 8260B	0.5	<0.5	0	<0.5	0
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐	1	grab	EPA 8260B	0.5	<0.5	0	<0.5	0
27. Trichloroethene (TCE)	79016	☒	☐	1	grab	EPA 8260B	0.5	<0.5	0	<0.5	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	0.5	<0.5	0	<0.5	0
29. Acetone	67641	☒	☐	1	grab	EPA 8260B	10	<10	0	<10	0
30. 1,4 Dioxane	123911	☒	☐	1	grab	EPA 8260B	500	<500	0	<500	0
31. Total Phenols	108952	☒	☐	1	grab	EPA 8260B	84	<84	0	<84	0
32. Pentachlorophenol (PCP)	87865	☒	☐	1	grab	EPA 8270C	1.2	<1.2	0		
33. Total Phthalates (Phthalate esters) ⁴		☒	☐	1	grab	EPA 8270C	30	<30	0	<30	0
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐	1	grab	EPA 8270C	6	<6	0	<6	0
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	grab	EPA 8270C	0.6	<0.6	0	<0.6	0
a. Benzo(a) Anthracene	56553	☒	☐	1	grab	EPA 8270C	0.1	<0.1	0	<0.1	0
b. Benzo(a) Pyrene	50328	☒	☐	1	grab	EPA 8270C	0.1	<0.1	0	<0.1	0
c. Benzo(b)Fluoranthene	205992	☒	☐	1	grab	EPA 8270C	0.1	<0.1	0	<0.1	0
d. Benzo(k)Fluoranthene	207089	☒	☐	1	grab	EPA 8270C	0.1	<0.1	0	<0.1	0
e. Chrysene	21801	☒	☐	1	grab	EPA 8270C	0.1	<0.1	0	<0.1	0
f. Dibenzo(a,h)anthracene	53703	☒	☐	1	grab	EPA 8270C	0.1	<0.1	0	<0.1	0
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐	1	grab	EPA 8270C	0.1	<0.1	0	<0.1	0
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	grab	EPA 8270C	1.7	<1.7	0	<1.7	0

⁴The 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	0.2	<0.2	0	<0.2	0
i. Acenaphthylene	208968	☒	☐	1	grab	EPA 8270C	0.2	<0.2	0	<0.2	0
j. Anthracene	120127	☒	☐	1	grab	EPA 8270C	0.2	<0.2	0	<0.2	0
k. Benzo(ghi) Perylene	191242	☒	☐	1	grab	EPA 8270C	0.1	<0.1	0	<0.1	0
l. Fluoranthene	206440	☒	☐	1	grab	EPA 8270C	0.2	<0.2	0	<0.2	0
m. Fluorene	86737	☒	☐	1	grab	EPA 8270C	0.2	<0.2	0	<0.2	0
n. Naphthalene	91203	☒	☐	1	grab	EPA 8270C	0.2	<0.2	0	<0.2	0
o. Phenanthrene	85018	☒	☐	1	grab	EPA 8270C	0.2	<0.2	0	<0.2	0
p. Pyrene	129000	☒	☐	1	grab	EPA 8270C	0.2	<0.2	0	<0.2	0
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐	1	grab	EPA 8082	1.8	<1.8	0	<1.8	0
38. Chloride	16887006	☒	☐								
39. Antimony	7440360	☒	☐	1	grab	EPA 6020A	60	<60	0	<60	0
40. Arsenic	7440382	☒	☐	1	grab	EPA 6020A	10	<10	0	<10	0
41. Cadmium	7440439	☒	☐	1	grab	EPA 6010B	4	<4	0	<4	0
42. Chromium III (trivalent)	16065831	☒	☐	1	grab	EPA 6010B	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 6010B	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 6010B	40	<40	0	<40	0
48. Selenium	7782492	☒	☐	1	grab	EPA 6010B	50	<50	0	<50	0
49. Silver	7440224	☒	☐	1	grab	EPA 6010B	7	<7	0	<7	0
50. Zinc	7440666	☐	☒	1	grab	EPA 6010B	50	170	0.07	170	0.05
51. Iron	7439896	☐	☒	1	grab	EPA 6010B	100	200	0.08	200	0.05
Other (describe):		☐	☐								

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

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

<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 ☒	If yes, which metals?
<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: DF: Metal: DF: Metal: DF: Metal: DF: Etc.	Look up the limit calculated at the corresponding dilution factor in Appendix IV. Do any of the metals in the influent have the potential to exceed the corresponding effluent limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y ☐ N ☐ If Y, list which metals:

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) 1,000 lb liquid granular activated carbon vessels, 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 (West 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):			

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):

None

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 located across the street (West Main Street) from the Site .

c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water:

1. For multiple discharges, number the discharges sequentially.

2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water

The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.

d) Provide the state water quality classification of the receiving water

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 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.

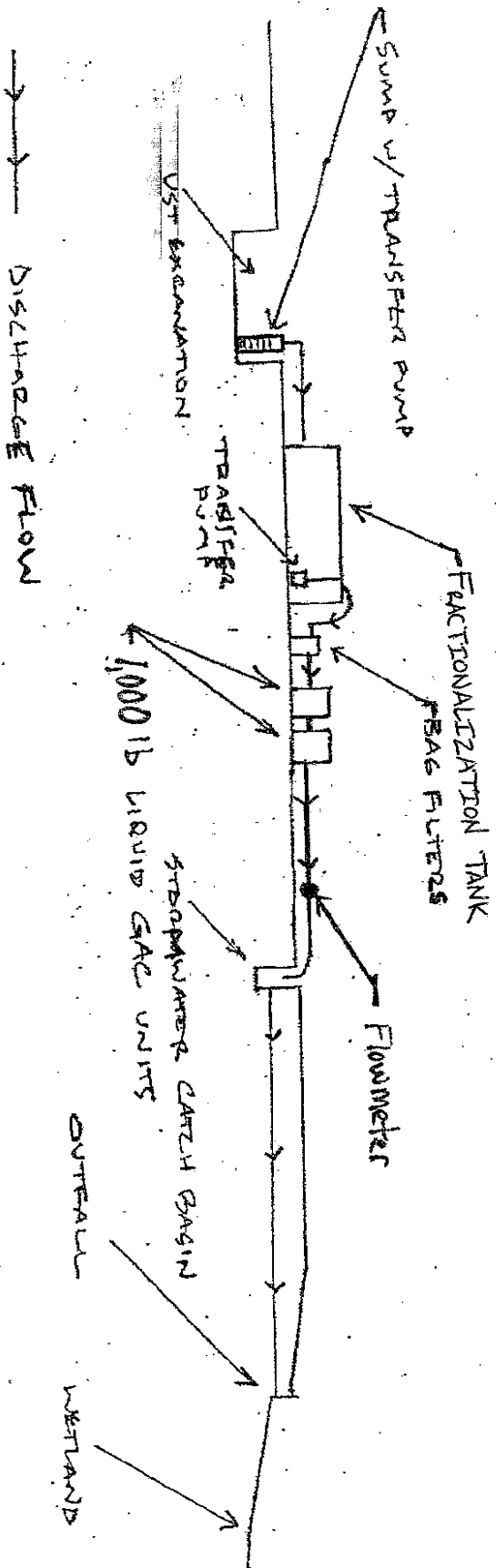
In regards to the ESA eligibility, when consulting the U.S. Fish and Wildlife Service website, two endangered species, the Dwarf Wedgemussel and Sandplain Gerardia, were listed as present within Worcester County. Upon review of the Massachusetts Division of Fisheries & Wildlife website, it was found that neither of these species are listed as being present in the town of Dudley. 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 Cumberland Farms property and unnamed wetlands associated with the proposed discharge. 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:

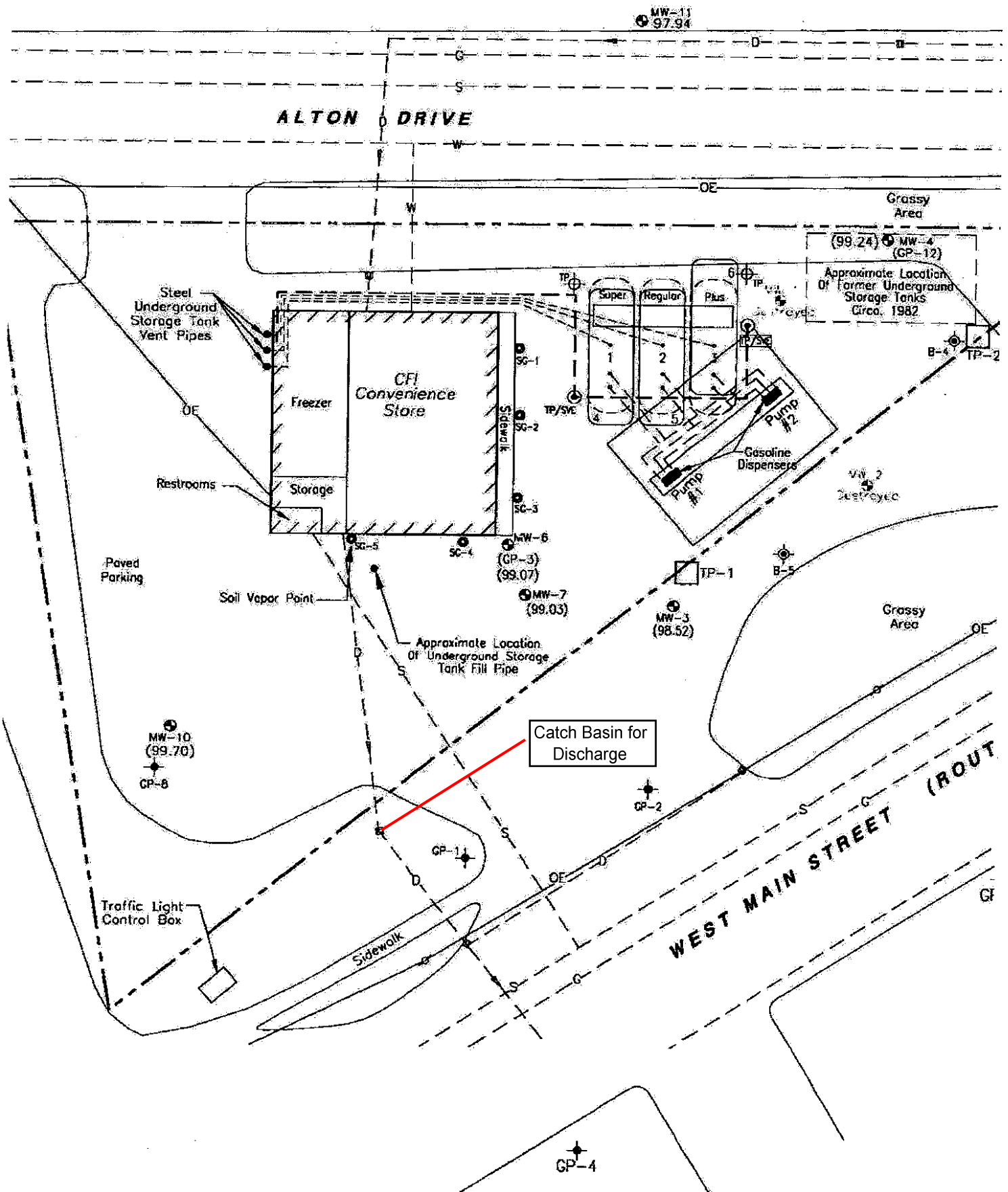
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage 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:	Cumberland Farms, Dudley, Massachusetts
Operator signature:	
Printed Name & Title:	Matthew Young, Senior Project Manager
Date:	8/18/11

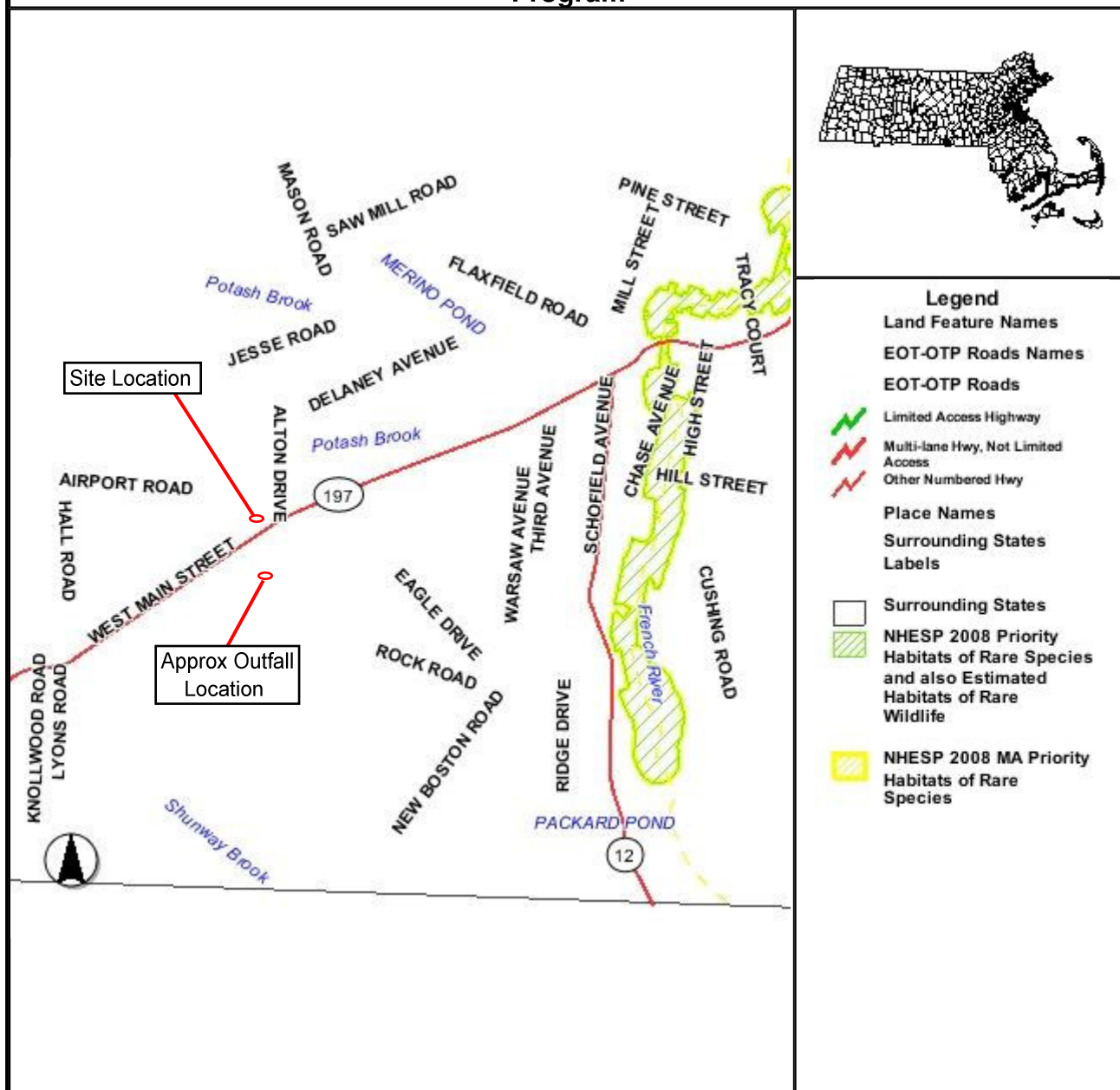
Flow Schematic



Residential



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



August 1, 2011

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

LABORATORY REPORT

Project: **CFI #2140 186 West Main/03-216082**
Lab ID: **143618**
Received: **07-22-11**

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,



Karyn E. Raymond
Project Manager

KER/saj

Sample Receipt Report

Project: **CFI #2140 186 West Main/03-216082**
 Client: **Environmental Compliance Services, Inc.**
 Lab ID: **143618**

Delivery: **GWA Courier**
 Airbill: **n/a**
 Lab Receipt: **07-22-11**

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

Lab ID	Field ID		Matrix	Sampled	Method				Notes
143618-1	TP-4		Aqueous	7/21/11 0:00	EPA 8260B Volatile Organics with Oxygenates				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1317153	40 mL VOA Vial	Proline	BX38153	HCL	R-5915D	12-09-10	n/a		
C1317152	40 mL VOA Vial	Proline	BX38153	HCL	R-5915D	12-09-10	n/a		
C1317115	40 mL VOA Vial	Proline	BX38153	HCL	R-5915D	12-09-10	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
143618-2	TP-4		Aqueous	7/21/11 0:00	EPA 8011 EDB and DBCP by GC/ECD				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1317114	40 mL VOA Vial	Proline	BX38153	HCL	R-5915D	12-09-10	n/a		
C1317111	40 mL VOA Vial	Proline	BX38153	HCL	R-5915D	12-09-10	n/a		
C1317110	40 mL VOA Vial	Proline	BX38153	HCL	R-5915D	12-09-10	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
143618-3	TP-4		Aqueous	7/21/11 0:00	EPA 6010B Ag Be Cd Cr Cu Ni Pb Se Zn Total EPA 6020A As Sb Se Tl Total EPA 7470A Mercury by CVAA Total				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C1323195	250 mL Plastic	Industrial	BX38459	HNO3	R-6283F	01-19-11	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
143618-5	TP-4		Aqueous	7/21/11 0:00	EPA 9012A Total Cyanide				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C2039645	500 mL Plastic	n/a	n/a	NaOH	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
143618-6	TP-4		Aqueous	7/21/11 0:00	EPA 1664 Hexane Extractable Material				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C2039644	1 L Amber Glass	n/a	n/a	H2SO4	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
143618-7	TP-4		Aqueous	7/21/11 0:00	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C2039648	1 L Amber Glass	n/a	n/a	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
143618-8	TP-4		Aqueous	7/21/11 0:00	SM 4500-Cl G Total Residual Chlorine EPA 7196A Hexavalent Chromium EPA SW-846,Chp.7 Reactivity SM 2540 D Total Suspended Solids				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C2039646	1 L Plastic	n/a	n/a	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
143618-9	TP-4		Aqueous	7/21/11 0:00	EPA 8270C Semivolatile Organics (Low Level)				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C2039643	1 L Amber Glass	n/a	n/a	None	n/a	n/a	n/a		

Data Certification

Project: CFI #2140 186 West Main/03-216082
Client: Environmental Compliance Services, Inc.

Lab ID: 143618
Received: 07-22-11 19:00

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:	143618-1					
EPA 8270C:	143618-9					
EPA 8082:	143618-7					
EPA 6010B:	143618-3					
EPA 6020A:	143618-3					
EPA 9012A:	143618-5					
EPA 7196A:	143618-8					
Sample Matrices: Groundwater/Surface (X) Soil/Sediment () Drinking Water () Air () Other ()						
CAM Protocol (check all that apply below):						
8260 VOC CAM II A (X)	7470/7471 Hg CAM III B ()	Mass DEP VPH CAM IV A ()	8081 Pesticides CAM V B ()	7196 Hex Cr CAM VI B (X)	Mass DEP APH CAM IX A ()	
8270 SVOC CAM II B (X)	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 (X)	8082 PCB CAM V A (X)	9012 Cyanide/PAC CAM VI A (X)	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).					Yes
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?					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: <i>Karyn E. Raymond</i>		Position: Project Manager				
Printed Name: Karyn E. Raymond		Date: 08-01-11				

EPA Method 8260B Volatile Organics by GC/MS

Field ID: **TP-4**
Project: **CFI #2140 186 West Main/03-216082**
Client: **Environmental Compliance Services, Inc.**

Laboratory ID: **143618-1**
Sampled: **07-21-11 00:00**
Received: **07-22-11 19:00**
Analyzed: **07-26-11 15:12**
Analyst: **LMG**

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

QC Batch ID: **VM9-1061-W**
Instrument ID: **MS-9 HP 6890**
Sample Volume: **5 mL**
Dilution Factor: **1**

Page: 1 of 2

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	0.50
74-87-3	Chloromethane	BRL		ug/L	0.50
75-01-4	Vinyl Chloride	BRL		ug/L	0.50
74-83-9	Bromomethane	BRL		ug/L	0.50
75-00-3	Chloroethane	BRL		ug/L	0.50
75-69-4	Trichlorofluoromethane	BRL		ug/L	0.50
60-29-7	Diethyl Ether	BRL		ug/L	2.0
75-35-4	1,1-Dichloroethene	BRL		ug/L	0.50
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	5.0
67-64-1	Acetone	BRL		ug/L	10
75-15-0	Carbon Disulfide	BRL		ug/L	5.0
75-09-2	Methylene Chloride	BRL		ug/L	2.5
107-13-1	Acrylonitrile	BRL		ug/L	2.5
156-60-5	<i>trans</i> -1,2-Dichloroethene	BRL		ug/L	0.50
1634-04-4	Methyl <i>tert</i> -butyl Ether (MTBE)	BRL		ug/L	0.50
75-34-3	1,1-Dichloroethane	BRL		ug/L	0.50
594-20-7	2,2-Dichloropropane	BRL		ug/L	0.50
156-59-2	<i>cis</i> -1,2-Dichloroethene	BRL		ug/L	0.50
78-93-3	2-Butanone (MEK)	BRL		ug/L	5.0
74-97-5	Bromochloromethane	BRL		ug/L	0.50
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	5.0
67-66-3	Chloroform	BRL		ug/L	0.50
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	0.50
56-23-5	Carbon Tetrachloride	BRL		ug/L	0.50
563-58-6	1,1-Dichloropropene	BRL		ug/L	0.50
71-43-2	Benzene	BRL		ug/L	0.50
107-06-2	1,2-Dichloroethane	BRL		ug/L	0.50
79-01-6	Trichloroethene	BRL		ug/L	0.50
78-87-5	1,2-Dichloropropane	BRL		ug/L	0.50
74-95-3	Dibromomethane	BRL		ug/L	0.50
75-27-4	Bromodichloromethane	BRL		ug/L	0.50
123-91-1	1,4-Dioxane	BRL		ug/L	500
10061-01-5	<i>cis</i> -1,3-Dichloropropene	BRL		ug/L	0.40
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	5.0
108-88-3	Toluene	BRL		ug/L	0.50
10061-02-6	<i>trans</i> -1,3-Dichloropropene	BRL		ug/L	0.40
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	0.50
127-18-4	Tetrachloroethene	BRL		ug/L	0.50
142-28-9	1,3-Dichloropropane	BRL		ug/L	0.50
591-78-6	2-Hexanone	BRL		ug/L	5.0
124-48-1	Dibromochloromethane	BRL		ug/L	0.50
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.50
108-90-7	Chlorobenzene	BRL		ug/L	0.50
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	0.50
100-41-4	Ethylbenzene	BRL		ug/L	0.50
108-38-3/106-42-3	<i>meta</i> -Xylene and <i>para</i> -Xylene	BRL		ug/L	0.50

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

Field ID: **TP-4**
Project: **CFI #2140 186 West Main/03-216082**
Client: **Environmental Compliance Services, Inc.**

Laboratory ID: **143618-1**
Sampled: **07-21-11 00:00**
Received: **07-22-11 19:00**
Analyzed: **07-26-11 15:12**
Analyst: **LMG**

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

QC Batch ID: **VM9-1061-W**
Instrument ID: **MS-9 HP 6890**
Sample Volume: **5 mL**
Dilution Factor: **1**

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CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
95-47-6	<i>ortho</i> -Xylene	BRL		ug/L	0.50
100-42-5	Styrene	BRL		ug/L	0.50
75-25-2	Bromoform	BRL		ug/L	0.50
98-82-8	Isopropylbenzene	BRL		ug/L	0.50
108-86-1	Bromobenzene	BRL		ug/L	0.50
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	0.50
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	0.50
110-57-6	<i>trans</i> -1,4-Dichloro-2-butene	BRL		ug/L	25
103-65-1	<i>n</i> -Propylbenzene	BRL		ug/L	0.50
95-49-8	2-Chlorotoluene	BRL		ug/L	0.50
108-67-8	1,3,5-Trimethylbenzene	BRL		ug/L	0.50
106-43-4	4-Chlorotoluene	BRL		ug/L	0.50
98-06-6	<i>tert</i> -Butylbenzene	BRL		ug/L	0.50
95-63-6	1,2,4-Trimethylbenzene	BRL		ug/L	0.50
135-98-8	<i>sec</i> -Butylbenzene	BRL		ug/L	0.50
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	0.50
99-87-6	4-Isopropyltoluene	BRL		ug/L	0.50
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	0.50
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	0.50
104-51-8	<i>n</i> -Butylbenzene	BRL		ug/L	0.50
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	0.50
108-70-3	1,3,5-Trichlorobenzene	BRL		ug/L	0.50
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	0.50
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.50
91-20-3	Naphthalene	BRL		ug/L	2.5
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	0.50
75-65-0	<i>tert</i> -Butyl Alcohol (TBA)	BRL		ug/L	20
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	0.50
637-92-3	Ethyl <i>tert</i> -butyl Ether (ETBE)	BRL		ug/L	0.50
994-05-8	<i>tert</i> -Amyl Methyl Ether (TAME)	BRL		ug/L	0.50

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	13	127 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	13	129 %	70 - 130 %
Toluene-d ₈	10	11	106 %	70 - 130 %
4-Bromofluorobenzene	10	9.6	96 %	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: **TP-4**
Project: **CFI #2140 186 West Main/03-216082**
Client: **Environmental Compliance Services, Inc.**

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

Laboratory ID: **143618-02**
Sampled: **07-21-11 00:00**
Received: **07-22-11 19:00**
Extracted: **07-27-11 14:30**
Analyzed: **07-27-11 15:24**
Analyst: **CRL**

QC Batch ID: **PV-1028-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)	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.

Trace Metals

Field ID: **TP-4**
Project: **CFI #2140 186 West Main/03-216082**
Client: **Environmental Compliance Services, Inc.**

Matrix: **Aqueous**
Container: **250 mL Plastic**
Preservation: **HNO₃ / Cool**
Preserved: **07-21-11 00:00**

Laboratory ID: **143618-3**
Sampled: **07-21-11 00:00**
Received: **07-22-11 19:00**

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6020A ¹	MB-4492-W	EPA 3010A	07-26-11 00:00	50 mL	ICP-1 PE 3000	LMS
EPA 6010B ²	MB-4492-W	EPA 3010A	07-26-11 00:00	50 mL	ICP-1 PE 3000	LMS
EPA 7470A ³	MP-2414-W	EPA 7470A	07-26-11 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	07-26-11 19:06	EPA 6020A ¹
7440-38-2	Arsenic, Total	BRL		mg/L	0.01	1	07-26-11 19:06	EPA 6020A ¹
7440-41-7	Beryllium, Total	BRL		mg/L	0.004	1	07-26-11 19:06	EPA 6010B ²
7440-43-9	Cadmium, Total	BRL		mg/L	0.004	1	07-26-11 19:06	EPA 6010B ²
7440-47-3	Chromium, Total	BRL		mg/L	0.01	1	07-26-11 19:06	EPA 6010B ²
7440-50-8	Copper, Total	BRL		mg/L	0.025	1	07-26-11 19:06	EPA 6010B ²
7439-89-6	Iron, Total	0.2		mg/L	0.1	1	07-26-11 19:06	EPA 6010B ²
7439-92-1	Lead, Total	BRL		mg/L	0.005	1	07-26-11 19:06	EPA 6010B ²
7439-97-6	Mercury, Total	BRL		mg/L	0.0002	1	07-26-11 16:01	EPA 7470A ³
7440-02-0	Nickel, Total	BRL		mg/L	0.04	1	07-26-11 19:06	EPA 6010B ²
7782-49-2	Selenium, Total	BRL		mg/L	0.05	1	07-26-11 19:06	EPA 6010B ²
7440-22-4	Silver, Total	BRL		mg/L	0.007	1	07-26-11 19:06	EPA 6010B ²
7440-28-0	Thallium, Total	BRL		mg/L	0.02	1	07-26-11 19:06	EPA 6020A ¹
7440-66-6	Zinc, Total	0.17		mg/L	0.05	1	07-26-11 19:06	EPA 6010B ²

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.

Inorganic Chemistry

Field ID: **TP-4**
 Project: **CFI #2140 186 West Main/03-216082**
 Client: **Environmental Compliance Services, Inc.**

Matrix: **Aqueous**
 Received: **07-22-11 19:00**

Lab ID: **143618-05** Sampled: **07-21-11 00:00** 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	07-25-11 18:30	TCN-1641-W	EPA 9012B	1	LD

Lab ID: **143618-06** Sampled: **07-21-11 00:00** Container: **1 L Amber Glass** Preservation: **H2SO4/Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Oil and Grease, Total	BRL	mg/L	5	1	1000 mL	07-25-11 11:00	HO-0596-W	EPA 1664	3	CG

Lab ID: **143618-08** Sampled: **07-21-11 00:00** Container: **1 L Plastic** Preservation: **Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	BRL	mg/L	5	3	200 mL	07-25-11 11:03	TSS-1954-W	SM 2540 D	3	BSH
Chlorine, Total Residual	BRL	mg/L	0.02	1	5 mL	07-23-11 14:30	TRC-0934-W	SM 4500-Cl G	2	LD
Chromium, Hexavalent	BRL	mg/L	0.01	1	5 mL	07-25-11 09:00	HC-0224-W	EPA 7196A	2	DEB
Reactive Cyanide	BRL	mg/Kg	50	1	10 g	07-27-11 11:00	RC-0965-W	SW-846 Chp. 7.3.3	4	DEB
Reactive Sulfide	BRL	mg/Kg	100	1	10 g	07-27-11 11:00	RS-0965-W	SW-846 Chp. 7.3.4	n/a	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
- 4 Instrument ID: Milton Roy Spectronic 401

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

Field ID: **TP-4**
 Project: **CFI #2140 186 West Main/03-216082**
 Client: **Environmental Compliance Services, Inc.**
 Laboratory ID: **143618-07**
 Sampled: **07-21-11 00:00**
 Received: **07-22-11 19:00**
 Extracted: **07-22-11 21:30**
 Cleaned Up: **07-27-11 22:30**
 Analyzed: **07-28-11 22:06**
 Analyst: **CRL**

Matrix: **Aqueous**
 Container: **1 L Amber Glass**
 Preservation: **Cool**
 QC Batch ID: **PB-2709-F**
 Instrument ID: **GC-13 Agilent 6890**
 Sample Weight: **900 mL**
 Final Volume: **10 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	0.22	0.23	104 %
Column	Decachlorobiphenyl	0.22	0.10	45 %
Second	Tetrachloro- <i>m</i> -xylene	0.22	0.22	100 %
Column	Decachlorobiphenyl	0.22	0.11	50 %

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.

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

Field ID: **TP-4**
Project: **CFI #2140 186 West Main/03-216082**
Client: **Environmental Compliance Services, Inc.**

Laboratory ID: **143618-09**
Sampled: **07-21-11 00:00**
Received: **07-22-11 19:00**
Extracted: **07-28-11 09:30**
Analyzed: **07-28-11 16:43**
Analyst: **MJB**

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

QC Batch ID: **SV-2686-F**
Instrument ID: **MS-3 HP 5890**
Sample Volume: **840 mL**
Final Volume: **1 mL**
Dilution Factor: **1**

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CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
62-75-9	N-Nitrosodimethylamine	BRL		ug/L	6
110-86-1	Pyridine	BRL		ug/L	6
108-95-2	Phenol	BRL		ug/L	6
62-53-3	Aniline	BRL		ug/L	6
111-44-4	Bis(2-chloroethyl) ether	BRL		ug/L	6
95-57-8	2-Chlorophenol	BRL		ug/L	6
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	6
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	6
100-51-6	Benzyl Alcohol	BRL		ug/L	6
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	6
95-48-7	2-Methylphenol	BRL		ug/L	6
108-60-1	Bis(2-chloroisopropyl) ether	BRL		ug/L	6
108-39-4/106-44-5	3 and 4-Methylphenol *	BRL		ug/L	6
621-64-7	N-Nitrosodi-n-propylamine	BRL		ug/L	6
98-86-2	Acetophenone	BRL		ug/L	6
67-72-1	Hexachloroethane	BRL		ug/L	6
98-95-3	Nitrobenzene	BRL		ug/L	6
78-59-1	Isophorone	BRL		ug/L	6
88-75-5	2-Nitrophenol	BRL		ug/L	6
105-67-9	2,4-Dimethylphenol	BRL		ug/L	6
111-91-1	Bis(2-chloroethoxy) methane	BRL		ug/L	6
120-83-2	2,4-Dichlorophenol	BRL		ug/L	6
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	6
106-47-8	4-Chloroaniline	BRL		ug/L	6
87-68-3	Hexachlorobutadiene	BRL		ug/L	6
59-50-7	4-Chloro-3-methylphenol	BRL		ug/L	6
77-47-4	Hexachlorocyclopentadiene	BRL		ug/L	12
88-06-2	2,4,6-Trichlorophenol	BRL		ug/L	6
95-95-4	2,4,5-Trichlorophenol	BRL		ug/L	6
91-58-7	2-Chloronaphthalene	BRL		ug/L	6
88-74-4	2-Nitroaniline	BRL		ug/L	6
100-25-4	1,4-Dinitrobenzene	BRL		ug/L	6
131-11-3	Dimethyl phthalate	BRL		ug/L	6
99-65-0	1,3-Dinitrobenzene	BRL		ug/L	6
606-20-2	2,6-Dinitrotoluene	BRL		ug/L	6
528-29-0	1,2-Dinitrobenzene	BRL		ug/L	6
99-09-2	3-Nitroaniline	BRL		ug/L	6
51-28-5	2,4-Dinitrophenol	BRL		ug/L	12
100-02-7	4-Nitrophenol	BRL		ug/L	6
132-64-9	Dibenzofuran	BRL		ug/L	6
121-14-2	2,4-Dinitrotoluene	BRL		ug/L	6
84-66-2	Diethyl phthalate	BRL		ug/L	6
7005-72-3	4-Chlorophenyl phenyl ether	BRL		ug/L	6
100-01-6	4-Nitroaniline	BRL		ug/L	6
534-52-1	4,6-Dinitro-2-methylphenol	BRL		ug/L	6

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

Field ID: **TP-4**
Project: **CFI #2140 186 West Main/03-216082**
Client: **Environmental Compliance Services, Inc.**

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

Laboratory ID: **143618-09**
Sampled: **07-21-11 00:00**
Received: **07-22-11 19:00**
Extracted: **07-28-11 09:30**
Analyzed: **07-28-11 16:43**
Analyst: **MJB**

QC Batch ID: **SV-2686-F**
Instrument ID: **MS-3 HP 5890**
Sample Volume: **840 mL**
Final Volume: **1 mL**
Dilution Factor: **1**

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

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	24	11	45 %	15 - 110 %
Phenol-d5	24	10	43 %	15 - 110 %
Nitrobenzene-d5	12	8	68 %	30 - 130 %
2-Fluorobiphenyl	12	7	62 %	30 - 130 %
2,4,6-Tribromophenol	24	19	79 %	15 - 110 %
Terphenyl-d14	12	8	71 %	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.

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

Field ID: **TP-4**
Project: **CFI #2140 186 West Main/03-216082**
Client: **Environmental Compliance Services, Inc.**

Laboratory ID: **143618-09**
Sampled: **07-21-11 00:00**
Received: **07-22-11 19:00**
Extracted: **07-28-11 09:30**
Analyzed: **07-28-11 17:18**
Analyst: **MJB**

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

QC Batch ID: **SV-2686-F**
Instrument ID: **MS-6 HP 6890**
Sample Volume: **840 mL**
Final Volume: **1 mL**
Dilution Factor: **1**

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	0.6
118-74-1	Hexachlorobenzene	BRL		ug/L	0.6
87-86-5	Pentachlorophenol	BRL		ug/L	1.2

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	24	11	47 %	15 - 110 %
Phenol-d5	24	11	45 %	15 - 110 %
Nitrobenzene-d5	12	9.8	83 %	30 - 130 %
2-Fluorobiphenyl	12	7.2	61 %	30 - 130 %
2,4,6-Tribromophenol	24	17	70 %	15 - 110 %
Terphenyl-d14	12	8.2	69 %	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.

Project Narrative

Project: CFI #2140 186 West Main/03-216082
Client: Environmental Compliance Services, Inc.

Lab ID: 143618
Received: 07-22-11 19:00

A. Documentation and Client Communication

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

1. EPA method 8270 was logged in for sample "TP-4", as indicated on the container label per Matt Lyne, 7/25/11.

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 143618-3. Samples were analyzed for selected target analytes, as requested by client.
2. EPA 8260B Note: Sample 143618-1. The relative percent deviations for analytes Dichlorodifluoromethane, Trichlorofluoromethane, Carbon Disulfide, tert-amyl Methyl Ether, trans-1,4-dichloro-2-butene, 1,3,5-Trichlorobenzene were above the recommended limits in the CCV.
3. EPA 8260B Note: Sample 143618-1. Naphthalene did not meet the 70 - 130% recovery criteria for the low calibration standard. The RL was raised to the next highest acceptable calibration standard.
4. EPA 8270C Modification: Samples 143618-9. 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.
5. EPA 8270C Note: Sample 143618-09. A quadratic equation was used in the calculation for analyte Hexachlorocyclopentadiene for QC batch SV-2686-F.
6. EPA 8270C Note: Sample 143618-09. 2,4-Dinitrophenol did not meet the minimum response factor criteria for the low calibration standard. The RL was raised to the next highest acceptable calibration standard.
7. EPA 8270C Note: Sample 143618-09. Hexachlorocyclopentadiene, 2,4- Dinitrophenol did not meet the 70 - 130% recovery criteria for the low calibration standard. The RL was raised to the next highest acceptable calibration standard.
8. EPA 8270C Note: Sample 143618-09. Quadratic equations were used in the calculation for analytes 2-Fluorophenol, 2,4,6-Tribromophenol, Benzo(a)pyrene, Dibenzo(a,h)anthracene, Ideno(1,2,3-c,d)pyrene for QC batch SV-2686-P.
9. EPA 8270C Non-conformance: Sample 143618-09. Laboratory control sample (LCS) analyte Pyridine was below the recommended recovery limit. Laboratory control sample duplicate (LCSD) analyte Pyridine was below the recommended recovery limit. Analyte Pyridine had a RPD recovery outside recommended limit for QC batch SV-2686-F.

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: **EPA Method 8260B**
QC Batch ID: **VM9-1061-W**
Matrix: **Aqueous**
Units: **ug/L**

LCS
Instrument ID: **MS-9 HP 6890**
Analyzed: **07-26-11 06:44**
Analyst: **LMG**

LCSD
Instrument ID: **MS-9 HP 6890**
Analyzed: **07-26-11 07:08**
Analyst: **LMG**

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CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
75-71-8	Dichlorodifluoromethane	10	7.6	76 %	10	7.0	70 %	7 %	70 - 130 %	20%
74-87-3	Chloromethane	10	8.5	85 %	10	8.4	84 %	2 %	70 - 130 %	20%
75-01-4	Vinyl Chloride	10	8.7	87 %	10	8.3	83 %	4 %	70 - 130 %	20%
74-83-9	Bromomethane	10	9.1	91 %	10	8.8	88 %	4 %	70 - 130 %	20%
75-00-3	Chloroethane	10	9.4	94 %	10	9.1	91 %	3 %	70 - 130 %	20%
75-69-4	Trichlorofluoromethane	10	7.8	78 %	10	7.8	78 %	0 %	70 - 130 %	20%
60-29-7	Diethyl Ether	20	18	88 %	20	18	90 %	2 %	70 - 130 %	20%
75-35-4	1,1-Dichloroethene	10	8.8	88 %	10	8.4	84 %	5 %	70 - 130 %	20%
76-13-1	1,1,2-Trichlorotrifluoroethane	20	16	82 %	20	15	77 %	7 %	70 - 130 %	20%
67-64-1	Acetone	20	17	87 %	20	17	83 %	5 %	70 - 130 %	20%
75-15-0	Carbon Disulfide	20	15	76 %	20	15	73 %	4 %	70 - 130 %	20%
75-09-2	Methylene Chloride	10	9.8	98 %	10	9.1	91 %	8 %	70 - 130 %	20%
107-13-1	Acrylonitrile	10	10	101 %	10	10	103 %	2 %	70 - 130 %	20%
156-60-5	trans-1,2-Dichloroethene	10	8.9	89 %	10	9.0	90 %	1 %	70 - 130 %	20%
1634-04-4	Methyl tert-butyl Ether (MTBE)	10	8.3	83 %	10	8.4	84 %	1 %	70 - 130 %	20%
75-34-3	1,1-Dichloroethane	10	9.5	95 %	10	9.1	91 %	4 %	70 - 130 %	20%
594-20-7	2,2-Dichloropropane	10	9.2	92 %	10	9.1	91 %	1 %	70 - 130 %	20%
156-59-2	cis-1,2-Dichloroethene	10	10	102 %	10	9.7	97 %	6 %	70 - 130 %	20%
78-93-3	2-Butanone (MEK)	20	16	82 %	20	18	89 %	8 %	70 - 130 %	20%
74-97-5	Bromochloromethane	10	10	103 %	10	10	102 %	1 %	70 - 130 %	20%
109-99-9	Tetrahydrofuran (THF)	20	17	86 %	20	17	86 %	0 %	70 - 130 %	20%
67-66-3	Chloroform	10	9.2	92 %	10	9.1	91 %	1 %	70 - 130 %	20%
71-55-6	1,1,1-Trichloroethane	10	8.6	86 %	10	8.3	83 %	4 %	70 - 130 %	20%
56-23-5	Carbon Tetrachloride	10	8.7	87 %	10	8.4	84 %	4 %	70 - 130 %	20%
563-58-6	1,1-Dichloropropene	10	8.4	84 %	10	8.0	80 %	4 %	70 - 130 %	20%
71-43-2	Benzene	10	9.7	97 %	10	9.5	95 %	1 %	70 - 130 %	20%
107-06-2	1,2-Dichloroethane	10	8.5	85 %	10	8.5	85 %	0 %	70 - 130 %	20%
79-01-6	Trichloroethene	10	8.9	89 %	10	8.8	88 %	1 %	70 - 130 %	20%
78-87-5	1,2-Dichloropropane	10	10	101 %	10	9.7	97 %	4 %	70 - 130 %	20%
74-95-3	Dibromomethane	10	9.1	91 %	10	9.1	91 %	0 %	70 - 130 %	20%
75-27-4	Bromodichloromethane	10	9.0	90 %	10	9.0	90 %	0 %	70 - 130 %	20%
123-91-1	1,4-Dioxane	200	170	84 %	200	160	78 %	7 %	70 - 130 %	20%
10061-01-5	cis-1,3-Dichloropropene	10	8.3	83 %	10	8.4	84 %	1 %	70 - 130 %	20%
108-10-1	4-Methyl-2-Pentanone (MIBK)	20	18	91 %	20	18	89 %	2 %	70 - 130 %	20%
108-88-3	Toluene	10	9.4	94 %	10	9.1	91 %	3 %	70 - 130 %	20%
10061-02-6	trans-1,3-Dichloropropene	10	9.1	91 %	10	9.5	95 %	4 %	70 - 130 %	20%
79-00-5	1,1,2-Trichloroethane	10	11	108 %	10	11	108 %	0 %	70 - 130 %	20%
127-18-4	Tetrachloroethene	10	10	103 %	10	10	101 %	2 %	70 - 130 %	20%
142-28-9	1,3-Dichloropropane	10	11	112 %	10	11	112 %	0 %	70 - 130 %	20%
591-78-6	2-Hexanone	20	21	106 %	20	22	109 %	3 %	70 - 130 %	20%
124-48-1	Dibromochloromethane	10	10	103 %	10	10	100 %	3 %	70 - 130 %	20%
106-93-4	1,2-Dibromoethane (EDB)	10	11	109 %	10	11	111 %	2 %	70 - 130 %	20%
108-90-7	Chlorobenzene	10	10	104 %	10	10	103 %	1 %	70 - 130 %	20%
630-20-6	1,1,1,2-Tetrachloroethane	10	11	108 %	10	10	105 %	3 %	70 - 130 %	20%
100-41-4	Ethylbenzene	10	9.7	97 %	10	9.8	98 %	1 %	70 - 130 %	20%
108-38-3/106-42-3	meta-Xylene and para-Xylene	20	22	112 %	20	22	108 %	3 %	70 - 130 %	20%
95-47-6	ortho-Xylene	10	11	112 %	10	11	111 %	1 %	70 - 130 %	20%
100-42-5	Styrene	10	10	102 %	10	11	106 %	4 %	70 - 130 %	20%
75-25-2	Bromoform	10	10	104 %	10	10	101 %	3 %	70 - 130 %	20%

Quality Control Report Laboratory Control Samples

Category: EPA Method 8260B	LCS Instrument ID: MS-9 HP 6890	LCSD Instrument ID: MS-9 HP 6890
QC Batch ID: VM9-1061-W	Analyzed: 07-26-11 06:44	Analyzed: 07-26-11 07:08
Matrix: Aqueous	Analyst: LMG	Analyst: LMG
Units: ug/L		

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CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
98-82-8	Isopropylbenzene	10	9.5	95 %	10	9.3	93 %	2 %	70 - 130 %	20%
108-86-1	Bromobenzene	10	10	102 %	10	9.9	99 %	3 %	70 - 130 %	20%
79-34-5	1,1,2,2-Tetrachloroethane	10	11	107 %	10	10	102 %	5 %	70 - 130 %	20%
96-18-4	1,2,3-Trichloropropane	10	8.9	89 %	10	9.0	90 %	1 %	70 - 130 %	20%
110-57-6	trans-1,4-Dichloro-2-butene	200	250	127 %	200	250	126 %	1 %	70 - 130 %	20%
103-65-1	n-Propylbenzene	10	9.0	90 %	10	8.7	87 %	3 %	70 - 130 %	20%
95-49-8	2-Chlorotoluene	10	10	101 %	10	10	101 %	0 %	70 - 130 %	20%
108-67-8	1,3,5-Trimethylbenzene	10	8.8	88 %	10	8.7	87 %	1 %	70 - 130 %	20%
106-43-4	4-Chlorotoluene	10	10	102 %	10	10	100 %	1 %	70 - 130 %	20%
98-06-6	tert-Butylbenzene	10	9.1	91 %	10	9.0	90 %	1 %	70 - 130 %	20%
95-63-6	1,2,4-Trimethylbenzene	10	8.8	88 %	10	8.8	88 %	0 %	70 - 130 %	20%
135-98-8	sec-Butylbenzene	10	9.5	95 %	10	9.3	93 %	1 %	70 - 130 %	20%
541-73-1	1,3-Dichlorobenzene	10	10	101 %	10	10	101 %	1 %	70 - 130 %	20%
99-87-6	4-Isopropyltoluene	10	9.2	92 %	10	8.9	89 %	4 %	70 - 130 %	20%
106-46-7	1,4-Dichlorobenzene	10	9.9	99 %	10	9.8	98 %	1 %	70 - 130 %	20%
95-50-1	1,2-Dichlorobenzene	10	10	100 %	10	10	100 %	1 %	70 - 130 %	20%
104-51-8	n-Butylbenzene	10	9.0	90 %	10	8.6	86 %	4 %	70 - 130 %	20%
96-12-8	1,2-Dibromo-3-chloropropane	10	9.1	91 %	10	9.3	93 %	2 %	70 - 130 %	20%
108-70-3	1,3,5-Trichlorobenzene	10	8.0	80 %	10	8.1	81 %	1 %	70 - 130 %	20%
120-82-1	1,2,4-Trichlorobenzene	10	8.4	84 %	10	8.6	86 %	2 %	70 - 130 %	20%
87-68-3	Hexachlorobutadiene	10	9.7	97 %	10	9.2	92 %	4 %	70 - 130 %	20%
91-20-3	Naphthalene	10	8.2	82 %	10	8.4	84 %	3 %	70 - 130 %	20%
87-61-6	1,2,3-Trichlorobenzene	10	9.9	99 %	10	10	101 %	2 %	70 - 130 %	20%
75-65-0	tert-Butyl Alcohol (TBA)	200	160	81 %	200	160	82 %	2 %	70 - 130 %	20%
108-20-3	Di-isopropyl Ether (DIPE)	10	8.7	87 %	10	8.7	87 %	0 %	70 - 130 %	20%
637-92-3	Ethyl tert-butyl Ether (ETBE)	10	8.1	81 %	10	8.2	82 %	2 %	70 - 130 %	20%
994-05-8	tert-Amyl Methyl Ether (TAME)	10	7.9	79 %	10	7.7	77 %	2 %	70 - 130 %	20%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	10	102 %	10	10	99 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	10	102 %	10	10	101 %	70 - 130 %
Toluene-d ₈	10	10	98 %	10	10	97 %	70 - 130 %
4-Bromofluorobenzene	10	10	102 %	10	10	102 %	70 - 130 %

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

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

Quality Control Report Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM9-1061-W**
Matrix: **Aqueous**

Instrument ID: **MS-9 HP 6890**
Analyzed: **07-26-11 07:33**
Analyst: **LMG**

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CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	0.50
74-87-3	Chloromethane	BRL		ug/L	0.50
75-01-4	Vinyl Chloride	BRL		ug/L	0.50
74-83-9	Bromomethane	BRL		ug/L	0.50
75-00-3	Chloroethane	BRL		ug/L	0.50
75-69-4	Trichlorofluoromethane	BRL		ug/L	0.50
60-29-7	Diethyl Ether	BRL		ug/L	2.0
75-35-4	1,1-Dichloroethene	BRL		ug/L	0.50
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	5.0
67-64-1	Acetone	BRL		ug/L	10
75-15-0	Carbon Disulfide	BRL		ug/L	5.0
75-09-2	Methylene Chloride	BRL		ug/L	2.5
107-13-1	Acrylonitrile	BRL		ug/L	2.5
156-60-5	<i>trans</i> -1,2-Dichloroethene	BRL		ug/L	0.50
1634-04-4	Methyl <i>tert</i> -butyl Ether (MTBE)	BRL		ug/L	0.50
75-34-3	1,1-Dichloroethane	BRL		ug/L	0.50
594-20-7	2,2-Dichloropropane	BRL		ug/L	0.50
156-59-2	<i>cis</i> -1,2-Dichloroethene	BRL		ug/L	0.50
78-93-3	2-Butanone (MEK)	BRL		ug/L	5.0
74-97-5	Bromochloromethane	BRL		ug/L	0.50
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	5.0
67-66-3	Chloroform	BRL		ug/L	0.50
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	0.50
56-23-5	Carbon Tetrachloride	BRL		ug/L	0.50
563-58-6	1,1-Dichloropropene	BRL		ug/L	0.50
71-43-2	Benzene	BRL		ug/L	0.50
107-06-2	1,2-Dichloroethane	BRL		ug/L	0.50
79-01-6	Trichloroethene	BRL		ug/L	0.50
78-87-5	1,2-Dichloropropane	BRL		ug/L	0.50
74-95-3	Dibromomethane	BRL		ug/L	0.50
75-27-4	Bromodichloromethane	BRL		ug/L	0.50
123-91-1	1,4-Dioxane	BRL		ug/L	500
10061-01-5	<i>cis</i> -1,3-Dichloropropene	BRL		ug/L	0.40
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	5.0
108-88-3	Toluene	BRL		ug/L	0.50
10061-02-6	<i>trans</i> -1,3-Dichloropropene	BRL		ug/L	0.40
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	0.50
127-18-4	Tetrachloroethene	BRL		ug/L	0.50
142-28-9	1,3-Dichloropropane	BRL		ug/L	0.50
591-78-6	2-Hexanone	BRL		ug/L	5.0
124-48-1	Dibromochloromethane	BRL		ug/L	0.50
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.50
108-90-7	Chlorobenzene	BRL		ug/L	0.50
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	0.50
100-41-4	Ethylbenzene	BRL		ug/L	0.50
108-38-3/106-42-3	<i>meta</i> -Xylene and <i>para</i> -Xylene	BRL		ug/L	0.50
95-47-6	<i>ortho</i> -Xylene	BRL		ug/L	0.50
100-42-5	Styrene	BRL		ug/L	0.50
75-25-2	Bromoform	BRL		ug/L	0.50

Quality Control Report Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM9-1061-W**
Matrix: **Aqueous**

Instrument ID: **MS-9 HP 6890**
Analyzed: **07-26-11 07:33**
Analyst: **LMG**

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CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
98-82-8	Isopropylbenzene	BRL		ug/L	0.50
108-86-1	Bromobenzene	BRL		ug/L	0.50
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	0.50
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	0.50
110-57-6	<i>trans</i> -1,4-Dichloro-2-butene	BRL		ug/L	25
103-65-1	<i>n</i> -Propylbenzene	BRL		ug/L	0.50
95-49-8	2-Chlorotoluene	BRL		ug/L	0.50
108-67-8	1,3,5-Trimethylbenzene	BRL		ug/L	0.50
106-43-4	4-Chlorotoluene	BRL		ug/L	0.50
98-06-6	<i>tert</i> -Butylbenzene	BRL		ug/L	0.50
95-63-6	1,2,4-Trimethylbenzene	BRL		ug/L	0.50
135-98-8	<i>sec</i> -Butylbenzene	BRL		ug/L	0.50
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	0.50
99-87-6	4-Isopropyltoluene	BRL		ug/L	0.50
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	0.50
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	0.50
104-51-8	<i>n</i> -Butylbenzene	BRL		ug/L	0.50
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	0.50
108-70-3	1,3,5-Trichlorobenzene	BRL		ug/L	0.50
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	0.50
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.50
91-20-3	Naphthalene	BRL		ug/L	2.5
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	0.50
75-65-0	<i>tert</i> -Butyl Alcohol (TBA)	BRL		ug/L	20
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	0.50
637-92-3	Ethyl <i>tert</i> -butyl Ether (ETBE)	BRL		ug/L	0.50
994-05-8	<i>tert</i> -Amyl Methyl Ether (TAME)	BRL		ug/L	0.50

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	12	118 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	12	120 %	70 - 130 %
Toluene-d ₈	10	10	102 %	70 - 130 %
4-Bromofluorobenzene	10	9.6	96 %	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 8082	LCS	Instrument ID:	GC-13 Agilent 6890	LCSD	Instrument ID:	GC-13 Agilent 6890
QC Batch ID:	PB-2709-F		Extracted:	07-22-11 21:30		Extracted:	07-22-11 21:30
Matrix:	Aqueous		Cleaned Up:	07-27-11 22:30		Cleaned Up:	07-27-11 22:30
Units:	ug/L		Analyzed:	07-28-11 19:20		Analyzed:	07-28-11 19:43
			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	1st Col	2nd Col	Spike	RPD
12674-11-2	Aroclor 1016	5.0	5.5	5.4	110%	108%	5.0	5.1	5.0	101%	101%	8 %	7 %	40 - 140%	20 %
11096-82-5	Aroclor 1260	5.0	4.3	4.7	86%	93%	5.0	3.6	4.0	72%	80%	18 %	15 %	40 - 140%	20 %

QC Surrogate Compound	Surrogate Recovery												QC Limits	
Tetrachloro- <i>m</i> -xylene	0.20	0.21	0.20	104%	100%	0.20	0.18	0.18	91%	88%			30 - 150 %	
Decachlorobiphenyl	0.20	0.09	0.09	44%	46%	0.20	0.08	0.09	42%	43%			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-2709-F**
Matrix: **Aqueous**

Instrument ID: **GC-13 Agilent 6890**
Extracted: **07-22-11 21:30**
Cleaned Up: **07-27-11 22:30**
Analyzed: **07-28-11 18:56**
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 Column	Tetrachloro- <i>m</i> -xylene	0.20	0.21	103 %	30 - 150 %
	Decachlorobiphenyl	0.20	0.10	48 %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	0.20	0.20	100 %	30 - 150 %
	Decachlorobiphenyl	0.20	0.10	51 %	30 - 150 %

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

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

Quality Control Report Laboratory Control Samples

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

Sample Type	Method	QC Batch ID	Prep Method	Prepared	Analyzed	Instrument ID	Analyst
LCS	EPA 6010B	MB-4492-WL	EPA 3010A	07-26-11 00:00	07-26-11 18:54	ICP-1 PE 3000	PD
LCS	EPA 7470A	MP-2414-WL	EPA 7470A	07-26-11 00:00	07-26-11 15:35	CVAA-1 PE FIMS	LMS
LCSD	EPA 6010B	MB-4492-WL	EPA 3010A	07-26-11 00:00	07-26-11 19:00	ICP-1 PE 3000	PD
LCSD	EPA 7470A	MP-2414-WL	EPA 7470A	07-26-11 00:00	07-26-11 15:38	CVAA-1 PE FIMS	LMS

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits		Method
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
7440-36-0	Antimony	5.0	5.0	100%	5.0	5.0	100%	0 %	80-120 %	20 %	EPA 6010B
7440-38-2	Arsenic	5.0	5.1	102%	5.0	5.1	103%	0 %	80-120 %	20 %	EPA 6010B
7440-41-7	Beryllium	1.0	0.99	99%	1.0	1.00	100%	1 %	80-120 %	20 %	EPA 6010B
7440-43-9	Cadmium	1.0	1.0	103%	1.0	1.0	104%	0 %	80-120 %	20 %	EPA 6010B
7440-47-3	Chromium	1.0	1.0	103%	1.0	1.0	103%	0 %	80-120 %	20 %	EPA 6010B
7440-50-8	Copper	1.0	1.0	100%	1.0	1.0	100%	0 %	80-120 %	20 %	EPA 6010B
7439-89-6	Iron	5.0	5.1	101%	5.0	5.1	102%	0 %	80-120 %	20 %	EPA 6010B
7439-92-1	Lead	5.0	5.4	107%	5.0	5.2	103%	2 %	80-120 %	20 %	EPA 6010B
7439-97-6	Mercury	0.0010	0.0010	103%	0.0010	0.0010	104%	0 %	80-120 %	20 %	EPA 7470A
7440-02-0	Nickel	1.0	1.1	108%	1.0	1.1	108%	0 %	80-120 %	20 %	EPA 6010B
7782-49-2	Selenium	5.0	4.9	98%	5.0	4.9	98%	0 %	80-120 %	20 %	EPA 6010B
7440-22-4	Silver	1.0	1.0	104%	1.0	1.1	105%	0 %	80-120 %	20 %	EPA 6010B
7440-28-0	Thallium	5.0	5.0	101%	5.0	5.1	102%	0 %	80-120 %	20 %	EPA 6010B
7440-66-6	Zinc	1.0	1.0	99%	1.0	1.0	99%	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-4492-WB	EPA 3010A	07-26-11 00:00	50 mL	ICP-1 PE 3000	PD
EPA 7470A	MP-2414-WB	EPA 7470A	07-26-11 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	0.06	1	07-26-11 18:50	EPA 6010B
7440-38-2	Arsenic	BRL		mg/L	0.01	1	07-26-11 18:50	EPA 6010B
7440-41-7	Beryllium	BRL		mg/L	0.004	1	07-26-11 18:49	EPA 6010B
7440-43-9	Cadmium	BRL		mg/L	0.004	1	07-26-11 18:50	EPA 6010B
7440-47-3	Chromium	BRL		mg/L	0.01	1	07-26-11 18:49	EPA 6010B
7440-50-8	Copper	BRL		mg/L	0.025	1	07-26-11 18:49	EPA 6010B
7439-89-6	Iron	BRL		mg/L	0.1	1	07-26-11 18:50	EPA 6010B
7439-92-1	Lead	BRL		mg/L	0.005	1	07-26-11 18:50	EPA 6010B
7439-97-6	Mercury	BRL		mg/L	0.0002	1	07-26-11 15:35	EPA 7470A
7440-02-0	Nickel	BRL		mg/L	0.04	1	07-26-11 18:50	EPA 6010B
7782-49-2	Selenium	BRL		mg/L	0.05	1	07-26-11 18:50	EPA 6010B
7440-22-4	Silver	BRL		mg/L	0.007	1	07-26-11 18:49	EPA 6010B
7440-28-0	Thallium	BRL		mg/L	0.02	1	07-26-11 18:50	EPA 6010B
7440-66-6	Zinc	BRL		mg/L	0.05	1	07-26-11 18:50	EPA 6010B

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

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

DF Dilution Factor.

**Quality Control Report
Laboratory Control Sample**

Category: **EPA Method 8011**
QC Batch ID: **PV-1028-E**
Matrix: **Aqueous**
Units: **ug/L**

Instrument ID: **GC-6 HP 5890**
Extracted: **07-27-11 10:30**
Analyzed: **07-27-11 13:35**
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	92 %	92 %	70 - 130 %
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.20	0.19	0.19	95 %	96 %	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-1028-E**
Matrix: **Aqueous**

Instrument ID: **GC-6 HP 5890**
Extracted: **07-27-11 10:30**
Analyzed: **07-27-11 14:48**
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.

Laboratory Control Samples

Category: **Inorganics**

Matrix: **Aqueous**

Units: **mg/L**

<u>Sample Type</u>	<u>Method</u>	<u>QC Batch ID</u>	<u>Prep Method</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Instrument ID</u>	<u>Analyst</u>
LCS	EPA 9012B	TCN-1641-W	EPA 9012B	7/24/2011 16:00	7/25/2011 18:14	Lachat 8000 Autoanalyzer	LD
LCSD	EPA 9012B	TCN-1641-W	EPA 9012B	7/24/2011 16:00	7/25/2011 18:15	Lachat 8000 Autoanalyzer	LD

Analyte	LCS			LCS Duplicate				QC Limits		Method
	Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
Cyanide, Total	0.45	0.46	102%	0.45	0.41	92%	10 %	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	68	76	112 %	80 - 120 %	07-25-11 11:03	TSS-1954-W	SM 2540 D	2	BH
Chlorine, Total Residual	mg/L	0.05	0.05	102 %	80 - 120 %	07-23-11 14:30	TRC-0934-W	SM 4500-Cl G	1	LD
Chromium, Hexavalent	mg/L	0.10	0.09	94 %	80 - 120 %	07-25-11 09:00	HC-0224-W	EPA 7196A	1	DEB
Oil and Grease, Total	mg/L	40	37	93 %	78 - 114 %	07-25-11 11:00	HO-0596-W	EPA 1664	2	CG

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

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

- 1 Instrument ID: Thermo Electron Genesys 20
- 2 Instrument ID: Mettler AT 200 Balance

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

Analyte	Result	Units	RL	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	BRL	mg/L	2	07-25-11 11:03	TSS-1954-W	SM 2540 D	3	BH
Chlorine, Total Residual	BRL	mg/L	0.02	07-23-11 14:30	TRC-0934-W	SM 4500-Cl G	2	LD
Chromium, Hexavalent	BRL	mg/L	0.01	07-25-11 09:00	HC-0224-W	EPA 7196A	2	DEB
Oil and Grease, Total	BRL	mg/L	5	07-25-11 11:00	HO-0596-W	EPA 1664	3	CG
Cyanide, Total	BRL	mg/L	0.01	07-25-11 18:14	TCN-1641-W	EPA 9012B	1	LD

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

Report Notations: 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

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

Certifications and Approvals

MASSACHUSETTS
Department of Environmental Protection, M-MA-103

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

Potable Water (Drinking Water)

Analyte	Method
1,2-Dibromo-3-Chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1
Alkalinity, Total	SM 2320-B
Antimony	EPA 200.8
Arsenic	EPA 200.8
Barium	EPA 200.7
Barium	EPA 200.8
Beryllium	EPA 200.7
Beryllium	EPA 200.8
Cadmium	EPA 200.7
Cadmium	EPA 200.8
Calcium	EPA 200.7
Chlorine, Residual Free	SM 4500-CL-G
Chromium	EPA 200.7
Copper	EPA 200.7
Copper	EPA 200.8
Cyanide, Total	Lachat 10-204-00-1-A
E. Coli (Treatment and Distribution)	Enz. Sub. SM 9223
E. Coli (Treatment and Distribution)	NA-MUG SM 9222-G
Fecal Coliform (Source Water)	MF SM 9222-D
Fluoride	EPA 300.0
Fluoride	SM 4500-F-C
Haloacetic Acids	EPA 552.2
Heterotrophic Plate Count	SM 9215-B
Lead	EPA 200.8
Mercury	EPA 245.1
Nickel	EPA 200.7
Nickel	EPA 200.8
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Nitrite-N	EPA 300.0
Nitrite-N	Lachat 10-107-04-1-C
pH	SM 4500-H-B
Selenium	EPA 200.8
Silver	EPA 200.7
Silver	EPA 200.8
Sodium	EPA 200.7
Sulfate	EPA 300.0
Thallium	EPA 200.8
Total Coliform (Treatment and Distribution)	Enz. Sub. SM 9223
Total Coliform (Treatment and Distribution)	MF SM 9222-B
Total Dissolved Solids	SM 2540-C
Trihalomethanes	EPA 524.2
Turbidity	SM 2130-B
Volatile Organic Compounds	EPA 524.2

Non-Potable Water (Wastewater)

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

Non-Potable Water (Wastewater)

Analyte	Method
Aluminum	EPA 200.8
Ammonia-N	Lachat 10-107-06-1-B
Antimony	EPA 200.7
Antimony	EPA 200.8
Arsenic	EPA 200.7
Arsenic	EPA 200.8
Beryllium	EPA 200.7
Beryllium	EPA 200.8
Beta-BHC	EPA 608
Biochemical Oxygen Demand	SM 5210-B
Cadmium	EPA 200.7
Cadmium	EPA 200.8
Calcium	EPA 200.7
Chemical Oxygen Demand	SM 5220-D
Chlordane	EPA 608
Chloride	EPA 300.0
Chlorine, Total Residual	SM 4500-CL-G
Chromium	EPA 200.7
Chromium	EPA 200.8
Cobalt	EPA 200.7
Cobalt	EPA 200.8
Copper	EPA 200.7
Copper	EPA 200.8
Cyanide, Total	Lachat 10-204-00-1-A
DDD	EPA 608
DDE	EPA 608
DDT	EPA 608
Delta-BHC	EPA 608
Dieldrin	EPA 608
Endosulfan I	EPA 608
Endosulfan II	EPA 608
Endosulfan Sulfate	EPA 608
Endrin	EPA 608
Endrin Aldehyde	EPA 608
Gamma-BHC	EPA 608
Hardness (CaCO ₃), Total	EPA 200.7
Hardness (CaCO ₃), Total	SM 2340-B
Heptachlor	EPA 608
Heptachlor Epoxide	EPA 608
Iron	EPA 200.7
Kjeldahl-N	Lachat 10-107-06-02-D
Lead	EPA 200.7
Magnesium	EPA 200.7
Manganese	EPA 200.7
Manganese	EPA 200.8
Mercury	EPA 245.1
Molybdenum	EPA 200.7
Molybdenum	EPA 200.8
Nickel	EPA 200.7
Nickel	EPA 200.8
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Non-Filterable Residue	SM 2540-D
Oil and Grease	EPA 1664

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