



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 1

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

CERTIFIED MAIL RETURN RECEIPT REQUESTED

APR 30 2013

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

Re: Authorization to discharge under the Remediation General Permit (RGP) –
MAG910000. Cumberland Farms Store # 2449 located at 502 Washington Street,
Auburn, MA 01702, Worcester County; Authorization # MAG910575

Dear Mr. Young:

Based on the review of a Notice of Intent (NOI) submitted on behalf of Cumberland Farms, Inc., by the firm Environmental Compliance Service (ECS), 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.

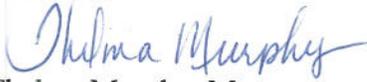
Also, please note that the metals included on the checklist are dilution dependent pollutants and subject to limitations based on a dilution factor range (DFR). With the absence of dilution to ponds, EPA determined that the DFR for each parameter is in the one and five (1-5) range. (See the RGP Appendix IV for Massachusetts facilities) Therefore, the limits for lead of 1.3 ug/L, and iron of 1,000 ug/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 August 30, 2013. 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,



Thelma Murphy, Manager
Storm Water and Construction
Permits Section

Enclosure

cc: Robert Kubit, MassDEP
William A. Coyle, Auburn DPW
Michael C. Bricher, ECS, Inc.

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

NPDES Authorization Number:		MAG910575
Authorization Issued:	April, 2013	
Facility/Site Name:	Cumberland Farms Store #4249	
Facility/Site Address:	502 Washington Street, Auburn, MA 01501, 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	
	Email: myoung@cumberlandgulf.com	
Estimated Date of Completion:	August 30, 2013	
Category and Sub-Category:	Category I-Petroleum Site Remediation. Sub-category A. Gasoline Only Sites.	
RGP Termination Date:	September 10, 2015	
Receiving Water:	Eddy Pond	

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
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l/Me#8260C/ML 10ug/L
✓	12.tert-Butyl Alcohol (TBA) (TertiaryButanol)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	13. tert-Amyl Methyl Ether (TAME)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
✓	14. Naphthalene ⁵	20 ug/L /Me#8260C/ML 2ug/L
	15. Carbon Tetrachloride	4.4 ug/L /Me#8260C/ ML 5ug/L
	16. 1,2 Dichlorobenzene (o-DCB)	600 ug/L /Me#8260C/ ML 5ug/L
	17. 1,3 Dichlorobenzene (m-DCB)	320 ug/L /Me#8260C/ ML 5ug/L
	18. 1,4 Dichlorobenzene (p-DCB)	5.0 ug/L /Me#8260C/ ML 5ug/L
	18a. Total dichlorobenzene	763 ug/L - NH only /Me#8260C/ ML 5ug/L
	19. 1,1 Dichloroethane (DCA)	70 ug/L /Me#8260C/ ML 5ug/L
	20. 1,2 Dichloroethane (DCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	21. 1,1 Dichloroethene (DCE)	3.2 ug/L/Me#8260C/ ML 5ug/L
	22. cis-1,2 Dichloroethene (DCE)	70 ug/L/Me#8260C/ ML 5ug/L
	23. Methylene Chloride	4.6 ug/L/Me#8260C/ ML 5ug/L
	24. Tetrachloroethene (PCE)	5.0 ug/L/Me#8260C/ ML 5ug/L
	25. 1,1,1 Trichloro-ethane (TCA)	200 ug/L/Me#8260C/ ML 5ug/L
	26. 1,1,2 Trichloro-ethane (TCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	27. Trichloroethene (TCE)	5.0 ug/L /Me#8260C/ ML 5ug/L
	28. Vinyl Chloride (Chloroethene)	2.0 ug/L /Me#8260C/ ML 5ug/L
	29. Acetone	Monitor Only(ug/L)/Me#8260C/ML 50ug/L
	30. 1,4 Dioxane	Monitor Only /Me#1624C/ML 50ug/L
	31. Total Phenols	300 ug/L Me#420.1&420.2/ML 2 ug/L/ Me# 420.4 /ML 50ug/L
	32. Pentachlorophenol (PCP)	1.0 ug/L /Me#8270D/ML 5ug/L,Me#604 &625/ML 10ug/L
	33. Total Phthalates (Phthalate esters) ⁶	3.0 ug/L ** /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L& Me#625/ML 5ug/L
	34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	6.0 ug/L /Me#8270D/ML 5ug/L,Me#606/ML 10ug/L & Me#625/ML 5ug/L
	35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/L
✓	a. Benzo(a) Anthracene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
✓	b. Benzo(a) Pyrene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L

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

	Metal parameter	Total Recoverable Metal Limit @ H ¹⁰ = 50 mg/l CaCO₃ for discharges in Massachusetts (ug/l) <small>11/12</small>		Minimum level=ML
		Freshwater	Saltwater	
	39. Antimony	5.6/ML 10		
	40. Arsenic **	10/ML20	36/ML 20	
	41. Cadmium **	0.2/ML10	8.9/ML 10	
	42. Chromium III (trivalent)	48.8/ML15	100/ML 15	

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

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

Footnotes:

¹ Although the maximum values for TRC are 11ug/l and 7.5 ug/l for freshwater, and saltwater respectively, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., Method 330.5, 20 ug/l).

² Limits for cyanide are based on EPA's water quality criteria expressed as micrograms per liter. There is currently no EPA approved test method for free cyanide. Therefore, total cyanide must be reported.

³ Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l).

⁴ BTEX = sum of Benzene, Toluene, Ethylbenzene, and total Xylenes.

⁵ Naphthalene can be reported as both a purgeable (VOC) and extractable (SVOC) organic compound. If both VOC and SVOC are analyzed, the highest value must be used unless the QC criteria for one of the analyses is not met. In such cases, the value from the analysis meeting the QC criteria must be used.

⁶ The sum of individual phthalate compounds (not including the #34, Bis (2-Ethylhexyl) Phthalate). The compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.

Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measurement of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.

⁷ Although the maximum value for the individual PAH compounds is 0.0038 ug/l, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.

⁸ In the November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as total PCBs is the sum of all homologue, all isomer, all congener, or all "Oroclor analyses." Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measure of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.

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

March 25, 2013
Project No. 03-209630

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

**RE: Notice of Intent for Remediation General Permit
Cumberland Farms Station #2449
502 Washington Street
Auburn, Massachusetts**

Dear Mr. Alvarez:

Environmental Compliance Services, Inc. (ECS) is pleased to provide supporting documentation for the Notice of Intent (NOI) for the Remediation General Permit (RGP) on behalf of the estate of Cumberland Farms, Inc. (CFI), for the above-referenced property. This NOI is being submitted in order to obtain a permit for the operation of a temporary groundwater recovery and treatment system (GWTS) at the Site. The GWTS is required to be operated at the Site in order to allow for the removal and replacement of petroleum underground storage tanks (USTs) during site redevelopment. A Site Locus is provided as Figure 1 and a Site Plan is provided as Figure 2. A Flow Schematic and Storm Water Discharge Drainage Path Plan are included as Figures 3 and 4, respectively. A copy of the NOI form is provided as Attachment I.

System Design

Groundwater treatment will occur prior to discharge to the Massachusetts Department of Transportation (MassDOT) storm water manhole located along the southeastern property boundary. A Site plan detailing the location of the UST system is depicted on Figure 2, and the proposed storm water manhole discharge location and drainage pathway is depicted on Figure 4, respectively.

The groundwater treatment system located on the Site will be composed of the following:

Submersible pneumatic pumps that collect groundwater from the UST excavation area, then recovered groundwater will be pumped into a 20,000 gallon frac tank (to settle out solids) and then processed through through particulate filters and two-1,000 lbs. liquid phase granular activated carbon (GAC) units for the treatment of recovered liquids. A line diagram of the groundwater treatment system is provided as Figure 3.

The storm water line discharges to Eddy Pond, approximately 2000 feet west of the Site. Based on communications with Massachusetts Department of Transportation, the storm drainage system runs parallel with Route 20 toward the outfall location at Eddy Pond. Please refer to Figure 1 for the estimated storm drain path running along Route 20 toward Eddy Pond.

Average flow rate of discharge of treated groundwater from the system to the storm water line is expected to be approximately 50 gallons per minute (gpm). The design capacity of the groundwater treatment system is 60 to 75 gpm based upon data collected from comparable systems installed at other remedial sites operated/designed by ECS.

Influent Sample Analysis

A groundwater sample was collected from a tank pad monitoring well on January 10, 2013. The samples were submitted to Spectrum Analytical, Inc. of Agawam, Massachusetts under standard chain of custody protocol for analysis of total petroleum hydrocarbons (TPH) by USEPA Method 8100, volatile organic compounds (VOCs) by USEPA Method 8260B, total metals (iron and lead) by USEPA Method 200.7, and total suspended solids by SM2540D. A copy of the laboratory reports and chains of custody record are provided as Attachment II.

Appendix III of the 2010 RGP under NPDES sets the effluent limitations for treatment system discharges. Petroleum constituents, total suspended solids, and iron were detected in the representative groundwater sample collected on January 10, 2013. Comparison of the concentrations of these target analytes to the Appendix III effluent limitations (http://www.epa.gov/region1/npdes/remediation/RGP2010_Permit) indicates that only total iron was detected concentrations were above the limits.

Receiving Waters Information

The receiving water for the treated groundwater discharge is the Eddy Pond, with eventual discharge to the Blackstone River, located approximately 4 miles east of the Site. ECS consulted the online United States Geological Survey (USGS) Streamstats program to determine the 7Q10 flow rate at the discharge location (<http://ma.water.usgs.gov/streamstats/>, accessed March 1, 2013). Data obtained from the online resource indicated that the 7Q10 flow rate for the nearby Dark Brook, approximately 1 mile north of the Site at the outfall location is 1.92 cubic feet per second (cfs). Based on data available, ECS calculated a 7Q10 for this area of 115.2 cubic feet per minute.

Based upon an estimated maximum flow rate of the discharge from the groundwater treatment system of 75 gpm, the dilution factor was calculated as:

$$\text{Equation 1: } DF = (Q_d + Q_s)/Q_d$$

Where: DF = DilutionFactor

Q_d = Maximum flow rate of the discharge in cfs

Q_s = Receiving water 7Q10 flow (cfs), where,

7Q10 = The minimum flow (cfs) for 7 consecutive days with a recurrence interval of 10 years

$$Qd = 75 \text{ gpm} \times 0.00223 \text{ cfs/gpm} = 0.16725 \text{ cfs}$$

$$DF = (0.16725 + 0.1.92)/(0.16725)$$

$$DF = 12.54$$

The concentration of iron reported present in the untreated sample (18,800 micrograms per liter ($\mu\text{g/L}$) was compared to the column corresponding to a dilution factor of 12.54 (between 10 and 50) in Appendix IV table. The discharge limit listed in the Appendix IV table is 5,000 $\mu\text{g/L}$; therefore, iron will be subject to permit limitations and monitoring requirements for this discharge.

Receiving Water Classification

ECS consulted the Massachusetts Department of Environmental Protection (MassDEP) Division of Water Pollution Control (<http://www.mass.gov/dep/water/laws/tblfig.pdf>) to determine the classification for the receiving waters. The Blackstone River is listed as Class B surface water.

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

According to Massachusetts Geographic Information Systems (MassGIS) online maps for the Natural Heritage Endangered Species Program (NHESP) (2008), no Priority Habitat of Rare Species or Estimated Habitats of Rare Wildlife are located within at the proposed discharge area. There are no Areas of Critical Environmental Concern or Endangered Species known to exist within and surrounding the proposed discharge area. A copy of the MassGIS Resource Priority and NHESP Maps of the Site area is included in Attachment III.

Review of National Register of Historic Places

Listings of Historic Places within the Town of Auburn in the vicinity of the Site were obtained from the Massachusetts Cultural Resources Information System (MACRIS) online database at <http://mhc-macris.net/towns.aspx> (accessed February 1, 2013). Copies of the MACRIS report are provided as Attachment IV. The database indicated that there are no historic places located in close proximity to the Site and proposed discharge area. This project does not involve the demolition or rehabilitation of existing structures and historic properties.

Should you have any questions or concerns regarding the contents of this letter or the NOI for the RGP, please do not hesitate to contact the undersigned at (508) 756-0151.

Sincerely,
ENVIRONMENTAL COMPLIANCE SERVICES, INC.



Michael C. Bricher, P.G., LSP
Senior Project Manager

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
Kenneth Fairbanks, Highway Superintendent, Town of Auburn, 5 Millbury Street,
Auburn, MA 01501
William M. Clougherty, P.E., MassDOT Highway Division, District 3, 403 Belmont
Street, Worcester, MA 01604

LIST OF ATTACHMENTS

Figures

Figure 1: Site Locus

Figure 2: Site Plan

Figure 3: Flow Schematic

Figure 4: Storm Water Discharge Drainage Path Plan

Attachment I: NOI for the RGP

Attachment II: Laboratory Analytical Report and Chain of Custody Record

Attachment III: On-line MassGIS Resource Priority & NHESP Maps

Attachment IV: MACRIS Database Search Results

FIGURES



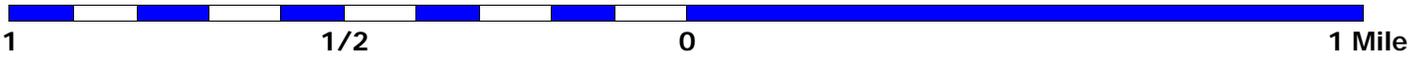
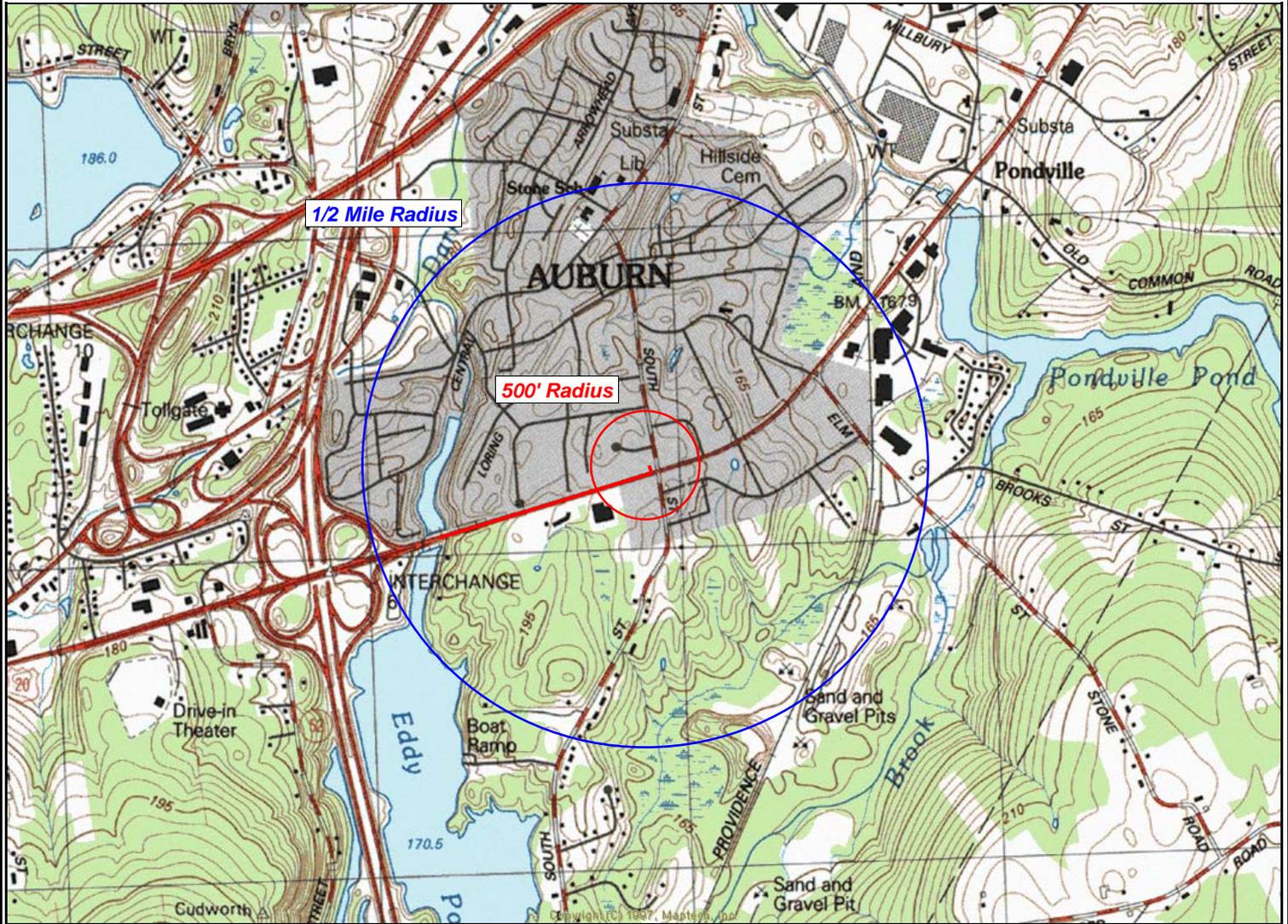
Environmental Compliance Services, Inc.
 997 Millbury Street, Unit G, Worcester, MA 01607
 Phone (508)-756-0151 Fax (508)-757-7063
 www.ecsconsult.com

SITE LOCUS

Figure: 1

Cumberland Farms, Inc.
 502 Washington Street
 Auburn, MA
 01501

Job Number: 03-209630.00



1 inch = 1500 feet

Contour Interval: 3 Meters

North

Storm Drainage Discharge Path

Base Map: U.S. Geological Survey; Quadrangle Location: Worcester South, MA

UTM Coordinates: 19 2065898 East / 46 74254 North



Map Edited: 1983

Map Revised: N/A

Generated By: JNS



Legend

- Approximate Property Line
- SS Sanitary Sewer Line
- SW Storm Sewer Line
- W Water Line
- NG Natural Gas Line
- OE Overhead Electric Line
- Manhole
- Catchbasin
- Water Gate
- Fire Hydrant
- Utility Pole
- Soil Boring
- Monitoring Well
- ECS-1 Well I.D.

General Notes:

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

Site Plan based on Assessor's parcels obtained from MassGIS and measurements collected by ECS.

ecs

607 North Avenue Suite 11 • Wakefield, MA 01880
Phone: 781-246-8897 Fax: 781-246-8950

PROJECT: **Cumberland Farms, Inc.**
502 Washington Street
Auburn, Massachusetts

TITLE: **Site Plan**

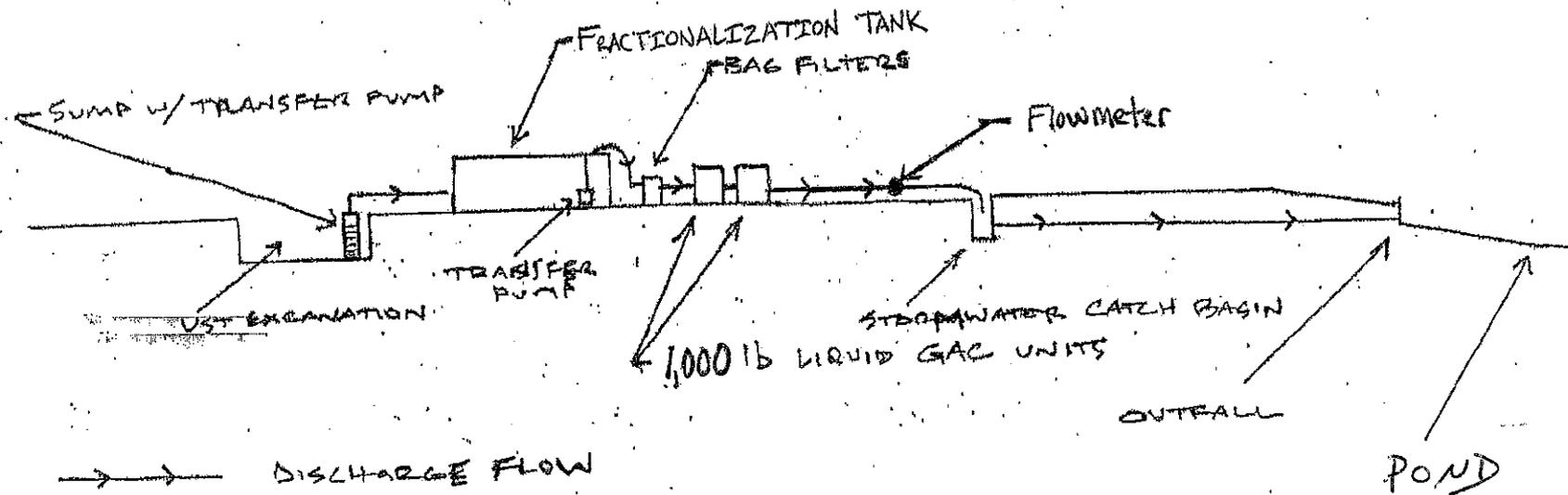
CLIENT: **Cumberland Farms, Inc.**

GRAPHIC SCALE:

COMPUTER CADFILE:

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
JNS		MJL	KS
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"= 40'	Dec 2007	03-209630	2

Flow Schematic - Figure 3



ATTACHMENT I

Remediation General Permit Appendix V

Notice of Intent (NOI) Suggested Forms & Instructions

I. Notice of Intent (NOI) Suggested Form and Instructions

In order to be covered by the remediation general permit (RGP), applicants must submit a completed Notice of Intent (NOI) to EPA Region I and the appropriate state agency. The owner or operator, as defined by 40 CFR § 122.2, means the owner or operator of any “facility or activity” subject to regulation under the NPDES program.

The following are three general “**operator**” scenarios (variations on any of these three are possible, especially as the number of owners and contractors increases):

- ▶ “*Owner*” as “*Operator*” - *sole permittee*. The property owner designs the structures and control systems for the site, develops and implements the BMPP, and serves as general contractor (or has an on-site representative with full authority to direct day-to-day operations). Under the definition of operator, in this case, the “Owner” would be considered the “operator” and therefore the only party that needs permit coverage. Everyone else working on the site may be considered subcontractors and do not need to apply for permit coverage.
- ▶ “*Contractor*” as “*Operator*” - *sole permittee*. The property owner hires a company (e.g., a contractor) to design the project and oversee all aspects, including preparation and implementation of the BMPP and compliance with the permit (e.g., a “turnkey” project). Here, the contractor would likely be the only party needing a permit. Similarly, EPA expects that property owners hiring a contractor or consultant to perform groundwater remediation work (e.g., due to a leaking fuel oil tank) would come under this type of scenario. EPA believes that the contractor, being a professional in the industry, should be the responsible entity rather than the individual. The contractor is better equipped to meet the requirements of both applying for permit coverage and developing and properly implementing the plans needed to comply with the permit. However, property owners would also meet the definition of “operator” and require permit coverage in instances where they perform any of the required tasks on their personal properties.
- ▶ “*Owner*” and “*Contractor*” as “*Operators*” - *co-permittees*. The owner retains control over any changes to site plans, BMPPs, or wastewater conveyance or control designs, but the contractor is responsible for conducting and overseeing the actual activities (e.g., excavation, installation and operation of treatment train, etc.) and daily implementation of BMPP and other permit conditions. In this case, both parties need to apply for coverage.

Generally, a person would not be considered an “operator,” and subsequently would not need permit coverage, if: 1) that person is a subcontractor hired by, and under the supervision of, the owner or a general contractor (e.g., if the contractor directs the

subcontractor's activities on-site, it is probably not an operator); or 2) the person's activities would otherwise result in the need for coverage under the RGP but another operator has legally assumed responsibility for the impacts of project activities.

A. Instructions for the Suggested Notice of Intent (NOI) - At a minimum, the Notice of Intent must include the following for each individual facility or site. Additional information may be attached as needed.

1. General facility/site information.

- a) Provide the facility/site name, mailing address, and telephone and fax numbers. Provide the facility Standard Industrial Classification (SIC) code(s), which can be found online at http://www.osha.gov/pls/imis/sic_manual.html. Provide the site location, including longitude and latitude.
- b) Provide the facility/site owner's name, address, email address, telephone and fax numbers, if different from the site information. Indicate whether the owner is a Federal, State/Tribal, private, or other entity.
- c) Provide the site operator's (e.g., contractor's) name, mailing address, telephone and fax numbers, and email address if different from the owner's information.
- d) For the site for which the application is being submitted, indicate whether:
 - 1) a prior NPDES permit exclusion has been granted for the discharge (if so, provide the tracking number of the exclusion letter);
 - 2) a prior NPDES application (Form 1 & 2C – for reference, please visit http://www.epa.gov/region1/npdes/epa_attach.html) has ever been filed for the discharge (if so, provide the tracking number and date that the application was submitted to EPA);
 - 3) the discharge is a “new discharge” as defined by 40 CFR 122.2; and
 - 4) for sites in Massachusetts, is the discharge covered under the Massachusetts Contingency Plan (MCP) 310 CMR 40.0000 and exempt from state permitting.
- e) Indicate whether there is any ongoing state permitting, licensing, or other action regarding the facility or site which is generating the discharge. If “yes,” provide any site identification number assigned by the state of NH or MA, any permit or license number assigned, and the state agency contact information (e.g. name, location, telephone no.).
- f) Indicate whether or not the facility is covered by other EPA permits including:
 - 1) the Multi-Sector General Permit (MSGP)
<http://cfpub.epa.gov/npdes/stormwater/msgp.cfm>;
 - 2) the Final NPDES General Permit for Dewatering Activity Discharges in Massachusetts and New Hampshire
<http://www.epa.gov/region1/npdes/dewatering.html>;
 - 3) the EPA Construction General Permit
<http://cfpub.epa.gov/npdes/stormwater/cgp.cfm>;
 - 4) an individual NPDES permit; or
 - 5) any other water quality-related individual or general permit.If so, provide permit tracking number(s).
- g) Indicate if the site/facility discharge(s) to an Area of Critical Environmental Concern (ACEC), as shown on the tables and maps in Appendix I.

h) Based on the nature of the facility/site and any historical sampling data, the applicant must indicate which of the sub-categories within which the potential discharge falls.

2. Discharge information.

- a) Describe the discharge activities to be covered by the permit. Attach additional sheets as needed.
- b) Provide the following information about each discharge:
- 1) the number of discharge points;
 - 2) the maximum and average flow rate of the discharge in cubic feet per second. For the average flow magnitude, include the units and appropriate notation if this value is a calculated design value or estimate if technical/design information is not available;
 - 3) the latitude and longitude of each discharge with an accuracy of 100 feet (see EPA's siting tool at: http://www.epa.gov/tri/report/siting_tool);
 - 4) the total volume of potential discharge (gal), only if hydrostatic testing;
 - 5) whether the discharge(s) is intermittent or seasonal and if ongoing.
- c) Provide the expected start and end dates of discharge (month/day/year).
- d) Attach a line drawing or flow schematic showing water flow through the facility including:
- 1) sources of intake water;
 - 2) contributing flow from the operation;
 - 3) treatment units; and
 - 4) discharge points and receiving waters(s).

3. Contaminant information.

In order to complete the NOI, the applicant will need to take a minimum of one sample of the untreated water and have it analyzed for the parameters applicable to the sub-category into which the discharge falls, as listed in Appendix III of the permit and selected in Part 1 of the NOI form, except as noted below.

Permittees shall provide additional sampling results with the NOI if such sampling already exists, or if the permittee has reason to believe the site contains additional contaminants not listed in Appendix III for that sub-category or contains additional contaminants not included in Appendix III.

The applicant may use historical data as a substitute for the new sample if the data was collected no more than 2 years prior to the "Submittal of the NOI" and if collected pursuant to:

- i. for sites in Massachusetts, 310 CMR 40.0000, the Massachusetts Contingency Plan ("Chapter 21E");
- ii. for sites in New Hampshire, New Hampshire's Title 50 RSA 485-A: Water Pollution and Waste Disposal or Title 50 RSA 485-C: Groundwater Protection Act;

a) Based on the analysis of the untreated influent, the applicant must indicate whether each listed chemical is believed present or believed absent in the potential discharge.

Based on the required sampling and analysis, the applicant must fill in the table, or provide a narrative description, with the following additional information for each chemical that is believed present (chemical that violate EPA's criteria limitations):

- 1) the number of samples taken (minimum of one sample for applicable parameters per Appendix III);
- 2) the type of sample (e.g. grab, composite, etc.);
- 3) the analytical method used, including the method number;
- 4) the minimum level (ML) of the method used (based on Appendix VI);
- 5) the maximum daily amount (concentration (ug/l) and mass (kg)) of each pollutant, based on the sampling data
lb/day (pounds per day) equals flow (in million gallons per day, MGD) times concentration in milligrams per liter (mg/l) times 8.34.
Example: 2.5 MGD x 30 mg/l TSS x 8.34 = 625.5 lb TSS/day
MGD = gallons per minute (gpm) x 0.00144
1 kg = 2.2 lbs

And;

- 6) the average daily amount (concentration and mass) of each pollutant, based on the sampling data.

If the results of any sampling indicate that pollutants exist in addition to those listed in Appendix III of the RGP of the permit, the applicant must also describe those contaminants on the NOI in boxes in section I.3.c.) on the line marked "Other," or use additional sheets as needed. Subsequently, EPA may require monitoring for such parameters or will decide if an individual permit is necessary.

c) Determination of Reasonable Potential and Allowable Dilution for Discharges of Metals:

If any *metals* are believed present in the potential discharge to freshwater¹, the applicant must follow the procedures below to determine the dilution factor for each metal.

Step 1: Initial Evaluation

- 1) The applicant must evaluate all metals believed present in the discharge subject to this permit, including "naturally occurring" metals such as dissolved and/or total Iron. Applicants must enter the highest detected concentration of the metal at zero dilution in the "Maximum value" column of the NOI.
- 2) Based on the maximum concentration of each metal, the applicant must perform an initial evaluation assuming zero dilution in the receiving water. The applicant must compare the metals concentrations in the untreated (intake) waters to the effluent limits contained in Appendix III.

¹Dilution factors may be available for discharges to saline waters but only with approval of the flow modeling information from the State prior to the submission of the NOI.

- i. If potential discharges (untreated influent) with metals contain concentrations above the concentration limits listed in Appendix III, applicant must proceed to step 2.
- ii. If potential discharges (untreated influent) with metals contain concentrations below the concentrations listed in Appendix III, the applicant may skip step 2 and those metals will **not** be subject to permit limitations or monitoring requirements.

Step 2: Calculation of Dilution Factor

1) **For applicants in NH:** If a metal concentration in a potential discharge (untreated influent) to **freshwater** exceeds the limits in Appendix III with zero dilution, the applicant shall evaluate the potential concentration considering a dilution factor (DF) using the formula below. **For sites in New Hampshire, the applicant must contact NH DES to determine the 7Q10 and dilution factor.**

$$DF = [(Qd + Qs)/Qd] \times 0.9$$

Where:

DF	= Dilution Factor
Qd	= Maximum flow rate of the discharge in cubic feet per second (cfs) (1.0 gpm = .00223 cfs)
Qs	= Receiving water 7Q10 flow, in cfs, where 7Q10 is the annual minimum flow for 7 consecutive days with a recurrence interval of 10 years
0.9	= Allowance for reserving 10% of the assets in the receiving stream as per Chapter ENV-Wq 1700, Surface Water Quality Regulations

i. Using the DF calculated from the formula above, the applicant must refer to the corresponding dilution range column in Appendix IV. The applicant then compares the maximum concentration of the metal entered on the NOI to the corresponding total recoverable metals limits listed in Appendix IV. Please note that for this reissuance the applicant will be permitted to determine a limit using any fraction within the 1-5 dilution factor range times the metal limit (for all regulated metals). For example: if the DF is 1.5, the Iron limit is 1,500 ug/L; if the DF is 1.5, the antimony limit is 8.4, etc. All limits above a dilution factor of 5 are maintained.

1. If a metal concentration in the potential discharge (untreated influent) is less than the corresponding limit in Appendix IV, the metal will **not** be subject to permit limitations or monitoring requirements.
2. If a metal concentration in the potential discharge (untreated influent) is equal to or exceeds the corresponding limit in Appendix IV, the applicant must reduce it in the effluent to a concentration below the applicable total recoverable metals limit in Appendix IV prior to discharge.

ii. In either case, the applicant must submit the results of this calculation as part of the NOI. EPA and NH DES will review the proposed effluent limitations for each metal and approve or disapprove the limits in the notification of coverage letter to the applicant.

2) **For applicants in MA:** If a metal concentration in a potential discharge (untreated influent) to **freshwater** exceeds the limits in Appendix III with zero dilution, the applicant must evaluate the potential concentration considering a dilution factor (DF) using the formula below.

$$DF = (Qd + Qs)/Qd$$

Where: **DF** = **Dilution Factor**
Qd = **Maximum flow rate of the discharge in cubic feet per second (cfs) (1.0 gpm = .00223 cfs)**
Qs = **Receiving water 7Q10 flow (cfs) where 7Q10 is the minimum flow (cfs) for 7 consecutive days with a recurrence interval of 10 years**

i. The applicant may estimate the 7Q10 for receiving water by using available information such as nearby USGS stream gauging stations directly or by application of certain “flow factors,” using historic streamflow publication information, calculations based on drainage area, information from state water quality offices, or other means. In many cases Massachusetts has calculated 7Q10 information using “flow factors” for a number of streams in the state. The source of the low flow value(s) used by the applicant must be included on NOI application form. Flow data can also be obtained from web applications such as the one located at: <http://ma.water.usgs.gov/streamstats/>.

ii. Using the DF calculated from the formula above, the applicant must refer to the corresponding dilution range column in Appendix IV. The applicant then shall compare the maximum concentration of each metal entered on the NOI to the corresponding total recoverable metals limit listed in Appendix IV. Please note that for this reissuance the applicant will be permitted to determine a limit using any fraction of the 0-5 of DF times the metal limit (for all regulated metals). For example: if the DF is 1.5, the Iron limit is 1,500 ug/L; if the DF is 1.5, the antimony limit is 8.4, etc. Not to exceed DF of 5.

1. If a metal concentration in the potential discharge (untreated influent) is less than the corresponding limit in Appendix IV, the metal will **not** be subject to permit limitations or monitoring requirements.
2. If a metal concentration in a potential discharge (untreated influent) is equal to or exceeds the corresponding limit in Appendix IV, the applicant must reduce it in the effluent to a concentration below the applicable total recoverable metals limit in Appendix IV prior to discharge.

iii. The applicant must submit the results of this calculation as part of the NOI. EPA (and MassDEP where the discharge is not covered by 310 CMR 40.0000) will review the proposed effluent limitations for each metal and approve or disapprove the limits in the notification of coverage letter to the applicant.

4. Treatment system information.

- a) Provide a written description of the treatment train and how the system will be set up for each discharge and attach a schematic of the proposed or existing treatment system(s).
- b) Identify each major treatment unit (e.g. frac tanks, filters, air stripper, liquid phase/vapor phase activated carbon, oil/water separators, etc.) by checking all that apply and describing any additional equipment not listed. Attach additional sheets as needed.
- c) Provide the proposed average and maximum flow rates (in gallons per minute, gpm) for the discharge and the design flow rates (in gpm) of the treatment system. Clearly identify the component of the treatment with the most limited flow, i.e., the part of the treatment train that establishes the design flow.
- d) Describe any chemical additives being used, or planned to be used, and attach MSDS sheets for each. EPA may request further information regarding the chemical composition of the additive, potential toxic effects, or other information to insure that approval of the use of the additive will not cause or contribute to a violation of State water quality standards. Approval of coverage under the RGP will constitute approval of the use of the chemical additive(s). If coverage of the discharge under the RGP has already been granted and the use of a chemical additive becomes necessary, the permittee must submit a Notice of Change (NOC).

5. Receiving surface water(s) information.

- a) Identify the discharge pathway by checking whether it is discharged: directly to the receiving water (river, stream, or brook), within the facility (e.g., through a sewer drain), to a storm drain, to a wetland, or other receiving body.
- b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters into which discharge will occur.
- c) Provide a detailed map(s) indicating the location of the site and outfall(s) to the receiving water(s):
 - 1) For multiple discharges, the discharges should be numbered sequentially.
 - 2) In the case of indirect dischargers (to municipal storm sewer, etc) the map(s) must be sufficient to indicate the location of the discharge to the indirect conveyance and the discharge to the state classified 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 and the basin (for Massachusetts, the Surface Water Quality Standards (314 CMR 4.00) are available at <http://www.mass.gov/dep/water/laws/regulati.htm#wqual>) (for New Hampshire, contact the NH DES at (603) 271-2984).
- e) Specify the reported seven day-ten year low flow (7Q10) of the receiving water (see Section I.A.3) c. above). In New Hampshire, the 7Q10 must be provided by to the applicant by the New Hampshire Department of Environmental Services.

f) Indicate whether the receiving water is a listed 303(d) water quality impaired or limited water and if so, for which pollutants (see Section IX of the Fact Sheet for additional information).

For MA, the most updated integrated list of waters (CWA 303(d) and 305(b)) is available at <http://www.mass.gov/dep/water/resources/tmdls.htm#info>.

For NH, the most updated integrated list of waters (CWA 303(d) and 305(b)) is available at <http://des.nh.gov/organization/divisions/water/wmb/swqa/index.htm>.

Also, indicate if there is a final TMDL for any of the listed pollutants. For MA, final TMDLs can be found at: <http://www.mass.gov/dep/water/resources/tmdls.htm> and for NH, final TMDLs can be found at

<http://des.nh.gov/organization/divisions/water/wmb/tmdl/index.htm>. For more information, contact the states at: New Hampshire Department of Environmental Services, Watershed Management Bureau at 603-271-3503 or the Massachusetts Department of Environmental Protection at 508-767-2796 or 508-767-2873.

6. ESA and NHPA Eligibility.

As required in Parts I.A.4 and Appendix VII the operator of a site/facility must ensure that the potential discharge will not adversely affect endangered species, designated critical habitat, or national historic places that are in proximity to the potential discharge. If the potential discharge is to certain water bodies, the applicant must also submit a formal certification with the NOI that indicates the consultation, with the U.S. Fish and Wildlife Service and National Marine Fisheries Service (the Services), resulted in either a no jeopardy opinion or a written concurrence on a finding that the discharge is not likely to adversely affect any endangered species or critical habitat. Facilities should begin the consultation as early in the process as possible.

- a) Using the instructions in Appendix VII and information in Appendix II, indicate under which criterion listed you are eligible for coverage under this general permit.
- b) If you selected criterion D or F, indicate if consultation with the federal services has been completed or if it is underway.
- c) If consultation with the U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, indicate if a written concurrence finding that the discharge is “not likely to adversely affect” listed species or critical habitat was received.
- d) Attach documentation of ESA eligibility as described below and required in Appendix VII, Part I.C, Step 4.

Criterion A - No federally-listed threatened or endangered species or federally-designated critical habitat are present: A copy of the most current county species list pages for the county(ies) where your site or facility and discharges are located. You must also include a statement on how you determined that no listed species or critical habitat are in proximity to your site or facility or discharge locations.

Criterion B – Section 7 consultation completed with the Service(s) on a prior project: A copy of the USFWS and/or NOAA Fisheries, as appropriate, biological opinion or concurrence on a finding of “unlikely to adversely effect” regarding the ESA Section 7 consultation.

Criterion C – Activities are covered by a Section 10 Permit: A copy of the USFWS and/or the NOAA Fisheries, as appropriate, letter transmitting the ESA Section 10 authorization.

Criterion D - Concurrence from the Service(s) that the discharge is “not likely to adversely affect” federally-listed species or federally-designated critical habitat (not including the four species of concern identified in Section I of Appendix I): A copy of the USFWS and/or the NOAA Fisheries, as appropriate, letter or memorandum concluding that the discharge is consistent with the general permit’s “not likely to adversely affect” determination.

Criterion E – Activities are covered by certification of eligibility: A copy of the documents originally used by the other operator of your site or facility (or area including your site) to satisfy the documentation requirement of Criteria A, B, C or D.

Criterion F - Concurrence from the Service(s) that the discharge is “not likely to adversely affect” species of concern, as identified in Section I of Appendix I: A copy of the USFWS and/or the NOAA Fisheries, as appropriate, concurrence with the applicant’s determination that the discharge is “not likely to adversely affect” listed species.

- e) Using the instructions in Appendix VII, identify which criterion listed in Part C makes you eligible for coverage under this general permit.
- 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. Applicants should provide any supplemental information needed to meet the requirements of the permit, including any analytical data used to support the application, and any certification(s) required.

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.

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 :		Facility/site mailing address:	
Location of facility/site : longitude: _____ latitude: _____	Facility SIC code(s):	Street:	
b) Name of facility/site owner :		Town:	
Email address of facility/site owner:	State:	Zip:	County:
Telephone no. of facility/site owner :			
Fax no. of facility/site owner :	Owner is (check one): 1. Federal____ 2. State/Tribal____ 3. Private____ 4. Other ____ if so, describe:		
Address of owner (if different from site):			
Street:			
Town:	State:	Zip:	County:
c) Legal name of operator :	Operator telephone no:		
	Operator fax no.:	Operator email:	
Operator contact name and title:			
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: _____

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.

<u>Activity Category</u>	<u>Activity Sub-Category</u>
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 <input type="checkbox"/> B. Well Development/Rehabilitation at Contaminated/Formerly Contaminated Sites <input type="checkbox"/> C. Hydrostatic Testing of Pipelines and Tanks <input type="checkbox"/> D. Long-Term Remediation of Contaminated Sumps and Dikes <input type="checkbox"/> E. Short-term Contaminated Dredging Drain Back Waters (if not covered by 401/404 permit) <input type="checkbox"/>
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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 fuel storage tanks and dewatering will be necessary to perform these upgrades. The discharge will be associated with the dewatering activities.	
b) Provide the following information about each discharge:	
1) Number of discharge points: 1	2) What is the maximum and average flow rate of discharge (in cubic feet per second, ft ³ /s)? Max. flow 0.168 Is maximum flow a design value? Y <input type="radio"/> N <input checked="" type="radio"/> Average flow (include units) 0.0117 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 42.111426 long 71.50546 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 <input checked="" type="radio"/> or seasonal <input type="radio"/> ? Is discharge ongoing? Y <input type="radio"/> N <input checked="" type="radio"/>
c) Expected dates of discharge (mm/dd/yy): start 5/8/2013 end 8/30/2013	
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)											
2. Total Residual Chlorine (TRC)											
3. Total Petroleum Hydrocarbons (TPH)											
4. Cyanide (CN)	57125										
5. Benzene (B)	71432										
6. Toluene (T)	108883										
7. Ethylbenzene (E)	100414										
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207										
9. Total BTEX ²	n/a										
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) ³	106934										
11. Methyl-tert-Butyl Ether (MtBE)	1634044										
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650										

* 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										
14. Naphthalene	91203										
15. Carbon Tetrachloride	56235										
16. 1,2 Dichlorobenzene (o-DCB)	95501										
17. 1,3 Dichlorobenzene (m-DCB)	541731										
18. 1,4 Dichlorobenzene (p-DCB)	106467										
18a. Total dichlorobenzene											
19. 1,1 Dichloroethane (DCA)	75343										
20. 1,2 Dichloroethane (DCA)	107062										
21. 1,1 Dichloroethene (DCE)	75354										
22. cis-1,2 Dichloroethene (DCE)	156592										
23. Methylene Chloride	75092										
24. Tetrachloroethene (PCE)	127184										
25. 1,1,1 Trichloro-ethane (TCA)	71556										
26. 1,1,2 Trichloro-ethane (TCA)	79005										
27. Trichloroethene (TCE)	79016										

<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>
28. Vinyl Chloride (Chloroethene)	75014										
29. Acetone	67641										
30. 1,4 Dioxane	123911										
31. Total Phenols	108952										
32. Pentachlorophenol (PCP)	87865										
33. Total Phthalates (Phthalate esters) ⁴											
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817										
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)											
a. Benzo(a) Anthracene	56553										
b. Benzo(a) Pyrene	50328										
c. Benzo(b)Fluoranthene	205992										
d. Benzo(k)Fluoranthene	207089										
e. Chrysene	21801										
f. Dibenzo(a,h)anthracene	53703										
g. Indeno(1,2,3-cd) Pyrene	193395										
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)											

⁴The sum of individual phthalate compounds.

<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>
h. Acenaphthene	83329										
i. Acenaphthylene	208968										
j. Anthracene	120127										
k. Benzo(ghi) Perylene	191242										
l. Fluoranthene	206440										
m. Fluorene	86737										
n. Naphthalene	91203										
o. Phenanthrene	85018										
p. Pyrene	129000										
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.										
38. Chloride	16887006										
39. Antimony	7440360										
40. Arsenic	7440382										
41. Cadmium	7440439										
42. Chromium III (trivalent)	16065831										
43. Chromium VI (hexavalent)	18540299										
44. Copper	7440508										
45. Lead	7439921										
46. Mercury	7439976										
47. Nickel	7440020										
48. Selenium	7782492										
49. Silver	7440224										
50. Zinc	7440666										
51. Iron	7439896										
Other (describe):											

<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>

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

<p><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___</p>	<p>If yes, which metals?</p>
<p><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?</p> <p>Metal: _____ DF: _____</p> <p>Metal: _____ DF: _____</p> <p>Metal: _____ DF: _____</p> <p>Metal: _____ DF: _____</p> <p>Etc.</p>	<p>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)?</p> <p>Y___ N___ If Y, list which metals:</p>

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

<p>a) A description of the treatment system, including a schematic of the proposed or existing treatment system:</p>						
<p>b) Identify each applicable treatment unit (check all that apply):</p>	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):

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:					
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.

<p>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 ____</p> <p>b) If you selected Criterion D or F, has consultation with the federal services been completed? Y ____ N ____ Underway ____</p> <p>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 ____</p> <p>d) Attach documentation of ESA eligibility as described in the NOI instructions and required by Appendix VII, Part I.C, Step 4.</p>
<p>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 ____</p> <p>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.</p>

7. Supplemental information.

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

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 # 2449
Operator signature:	
Printed Name & Title:	Matthew D Young Senior Project Manager
Date:	3/12/13

B. Submission of NOI to EPA - All operators applying for coverage under this General Permit must submit a completed Notice of Intent (NOI) to EPA. Signed and completed NOI forms and attachments must be submitted to EPA-NE at:

U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Mail Code OEP06-4
Boston, MA 02109-3912
ATTN: Remediation General Permit NOI Processing

or electronically mailed to NPDES.Generalpermits@epa.gov

or faxed to the EPA Office at 617-918-0505

If filling out the suggested NOI form electronically on EPA's website, the signature page must be signed and faxed or mailed to EPA at the fax number and/or address listed above.

1. Filing with the states - A copy of any NOI form filed with EPA-NE must also be filed with state agencies. The state agency may elect to develop a state specific form or other information requirements.

a) Discharges in Massachusetts - In addition to the NOI, permit applicants must submit copies of the State Application Form BRPWM 12, Request for General Permit coverage for the RGP. The application form and the Transmittal Form for Permit Application and Payment may be obtained from the Massachusetts Department of Environmental Protection (MassDEP) website at www.state.ma.us/dep. Municipalities are fee-exempt, but should send a copy of the transmittal form to that address for project tracking purposes. All applicants should keep a copy of the transmittal form and a copy of the application package for their records.

1) A copy of the NOI, the transmittal form, a copy of the check, and Form BRPWM 12 should be sent to:

Massachusetts Department of Environmental Protection
Division of Watershed Management
627 Main Street, 2nd floor
Worcester, MA 01608

2) A copy of the transmittal form and the appropriate fee should be sent to:

Massachusetts Department of Environmental Protection
P.O. Box 4062
Boston, MA 02111

Please note: Applicants for discharges in Massachusetts should note that under 310 CMR 40.000, *as a matter of state law*, the general permit only applies to discharges that are **not** subject to the

Massachusetts Contingency Plan (MCP) and 310 CMR 40.000. Therefore, discharges subject to the MCP are **not** required to fill out and submit the State Application Form BRPWM 12 or pay the state fees. However, they must submit a NOI to EPA.

b) Discharges in New Hampshire - applicants must provide a copy of the Notice of Intent to:

New Hampshire Department of Environmental Services
Water Division
Wastewater Engineering Bureau
P.O. Box 95
Concord, New Hampshire 03302-0095.

2. Filing with Municipalities - A copy of the NOI must be submitted to the municipality in which the proposed discharge would be located.

ATTACHMENT II

Report Date:
18-Jan-13 15:03



- Final Report
- Re-Issued Report
- Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY
Laboratory Report

Environmental Compliance Services
997 Millbury Street, Unit G
Worcester, MA 01607
Attn: Matt Lyne

Project: CFI #2449 - 502 Washington St-Auburn, MA
Project #: 03-209630

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SB63009-01	TP-1	Ground Water	10-Jan-13 15:15	11-Jan-13 16:20

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

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



Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.

Please note that this report contains 17 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, FL-E87936 and NJ-MA012).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

MassDEP Analytical Protocol Certification Form

Laboratory Name: Spectrum Analytical, Inc.			Project #: 03-209630			
Project Location: CFI #2449 - 502 Washington St-Auburn, MA			RTN:			
This form provides certifications for the following data set:			SB63009-01			
Matrices: Ground Water						
CAM Protocol						
✓	8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
	8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
✓	6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9012 Total Cyanide/PAC CAM VI A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B
Affirmative responses to questions A through F are required for "Presumptive Certainty" status						
A	Were all samples received in a condition consistent with those described on the Chain of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?				✓	Yes No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?				✓	Yes No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?				✓	Yes No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?				✓	Yes No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?				Yes	No No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)?				✓	Yes No
Responses to questions G, H and I below are required for "Presumptive Certainty" status						
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?				✓	Yes No
Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.						
H	Were all QC performance standards specified in the CAM protocol(s) achieved?				Yes	✓ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?				Yes	✓ No
All negative responses are addressed in a case narrative on the cover page of this report.						
I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.						
 Nicole Leja Laboratory Director Date: 1/18/2013						

This laboratory report is not valid without an authorized signature on the cover page.

CASE NARRATIVE:

The samples were received 1.8 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

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

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

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

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

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

SW846 6010C

Duplicates:

1301188-DUP1 *Source: SB63009-01*

Analyses are not controlled on RPD values from sample concentrations that are less than 5 times the reporting level. The batch is accepted based upon the difference between the sample and duplicate is less than or equal to the reporting limit.

Lead

SW846 8260C

Calibration:

1301013

Analyte quantified by quadratic equation type calibration.

2,2-Dichloropropane
Naphthalene

This affected the following samples:

1301407-BLK1
1301407-BS1
1301407-BSD1
S300181-ICV1
S300603-CCV1
TP-1

S300181-ICV1

Analyte percent recovery is outside individual acceptance criteria.

Dichlorodifluoromethane (Freon12) (68%)

SW846 8260C

Calibration:

S300181-ICV1

This affected the following samples:

1301407-BLK1
1301407-BS1
1301407-BSD1
S300603-CCV1
TP-1

Laboratory Control Samples:

1301407 BS/BSD

2,2-Dichloropropane percent recoveries (134/128) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

TP-1

2-Hexanone (MBK) percent recoveries (77/61) are outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

TP-1

1301407 BSD

2-Hexanone (MBK) RPD 23% (20%) is outside individual acceptance criteria.

Samples:

S300603-CCV1

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

Dichlorodifluoromethane (Freon12) (-21.0%)
Tert-Butanol / butyl alcohol (-22.8%)

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

2,2-Dichloropropane (33.2%)
Naphthalene (-32.6%)

This affected the following samples:

1301407-BLK1
1301407-BS1
1301407-BSD1
TP-1

Sample Identification

TP-1

SB63009-01

Client Project #

03-209630

Matrix

Ground Water

Collection Date/Time

10-Jan-13 15:15

Received

11-Jan-13

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
Volatile Organic Compounds													
Prepared by method SW846 5030 Water MS													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00	0.65	1	SW846 8260C	17-Jan-13	17-Jan-13	JEG	1301407	
67-64-1	Acetone	< 10.0		µg/l	10.0	2.56	1	"	"	"	"	"	"
107-13-1	Acrylonitrile	< 0.50		µg/l	0.50	0.46	1	"	"	"	"	"	"
71-43-2	Benzene	4.90		µg/l	1.00	0.67	1	"	"	"	"	"	"
108-86-1	Bromobenzene	< 1.00		µg/l	1.00	0.72	1	"	"	"	"	"	"
74-97-5	Bromochloromethane	< 1.00		µg/l	1.00	0.71	1	"	"	"	"	"	"
75-27-4	Bromodichloromethane	< 0.50		µg/l	0.50	0.48	1	"	"	"	"	"	"
75-25-2	Bromoform	< 1.00		µg/l	1.00	0.60	1	"	"	"	"	"	"
74-83-9	Bromomethane	< 2.00		µg/l	2.00	1.14	1	"	"	"	"	"	"
78-93-3	2-Butanone (MEK)	< 10.0		µg/l	10.0	1.73	1	"	"	"	"	"	"
104-51-8	n-Butylbenzene	< 1.00		µg/l	1.00	0.56	1	"	"	"	"	"	"
135-98-8	sec-Butylbenzene	< 1.00		µg/l	1.00	0.82	1	"	"	"	"	"	"
98-06-6	tert-Butylbenzene	< 1.00		µg/l	1.00	0.74	1	"	"	"	"	"	"
75-15-0	Carbon disulfide	< 2.00		µg/l	2.00	0.63	1	"	"	"	"	"	"
56-23-5	Carbon tetrachloride	< 1.00		µg/l	1.00	0.55	1	"	"	"	"	"	"
108-90-7	Chlorobenzene	< 1.00		µg/l	1.00	0.65	1	"	"	"	"	"	"
75-00-3	Chloroethane	< 2.00		µg/l	2.00	1.03	1	"	"	"	"	"	"
67-66-3	Chloroform	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	"
74-87-3	Chloromethane	< 2.00		µg/l	2.00	1.47	1	"	"	"	"	"	"
95-49-8	2-Chlorotoluene	< 1.00		µg/l	1.00	0.79	1	"	"	"	"	"	"
106-43-4	4-Chlorotoluene	< 1.00		µg/l	1.00	0.73	1	"	"	"	"	"	"
96-12-8	1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00	0.93	1	"	"	"	"	"	"
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.29	1	"	"	"	"	"	"
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.33	1	"	"	"	"	"	"
74-95-3	Dibromomethane	< 1.00		µg/l	1.00	0.67	1	"	"	"	"	"	"
95-50-1	1,2-Dichlorobenzene	< 1.00		µg/l	1.00	0.67	1	"	"	"	"	"	"
541-73-1	1,3-Dichlorobenzene	< 1.00		µg/l	1.00	0.71	1	"	"	"	"	"	"
106-46-7	1,4-Dichlorobenzene	< 1.00		µg/l	1.00	0.62	1	"	"	"	"	"	"
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00	0.45	1	"	"	"	"	"	"
75-34-3	1,1-Dichloroethane	< 1.00		µg/l	1.00	0.68	1	"	"	"	"	"	"
107-06-2	1,2-Dichloroethane	< 1.00		µg/l	1.00	0.78	1	"	"	"	"	"	"
75-35-4	1,1-Dichloroethene	< 1.00		µg/l	1.00	0.49	1	"	"	"	"	"	"
156-59-2	cis-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.72	1	"	"	"	"	"	"
156-60-5	trans-1,2-Dichloroethene	< 1.00		µg/l	1.00	0.68	1	"	"	"	"	"	"
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.71	1	"	"	"	"	"	"
142-28-9	1,3-Dichloropropane	< 1.00		µg/l	1.00	0.81	1	"	"	"	"	"	"
594-20-7	2,2-Dichloropropane	< 1.00		µg/l	1.00	0.60	1	"	"	"	"	"	"
563-58-6	1,1-Dichloropropene	< 1.00		µg/l	1.00	0.64	1	"	"	"	"	"	"
10061-01-5	cis-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.25	1	"	"	"	"	"	"
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.50	1	"	"	"	"	"	"
100-41-4	Ethylbenzene	15.0		µg/l	1.00	0.73	1	"	"	"	"	"	"
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.45	1	"	"	"	"	"	"
591-78-6	2-Hexanone (MBK)	< 10.0		µg/l	10.0	0.54	1	"	"	"	"	"	"

This laboratory report is not valid without an authorized signature on the cover page.

Sample Identification

TP-1

SB63009-01

Client Project #

03-209630

Matrix

Ground Water

Collection Date/Time

10-Jan-13 15:15

Received

11-Jan-13

<u>CAS No.</u>	<u>Analyte(s)</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>*RDL</u>	<u>MDL</u>	<u>Dilution</u>	<u>Method Ref.</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>	<u>Batch</u>	<u>Cert.</u>
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Volatile Organic Compounds

Volatile Organic Compounds

Prepared by method SW846 5030 Water MS

98-82-8	Isopropylbenzene	2.24		µg/l	1.00	0.62	1	SW846 8260C	17-Jan-13	17-Jan-13	JEG	1301407	
99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.61	1	"	"	"	"	"	"
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.65	1	"	"	"	"	"	"
108-10-1	4-Methyl-2-pentanone (MIBK)	< 10.0		µg/l	10.0	0.93	1	"	"	"	"	"	"
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.69	1	"	"	"	"	"	"
91-20-3	Naphthalene	3.42		µg/l	1.00	0.33	1	"	"	"	"	"	"
103-65-1	n-Propylbenzene	2.86		µg/l	1.00	0.76	1	"	"	"	"	"	"
100-42-5	Styrene	< 1.00		µg/l	1.00	0.62	1	"	"	"	"	"	"
630-20-6	1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00	0.63	1	"	"	"	"	"	"
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.35	1	"	"	"	"	"	"
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.74	1	"	"	"	"	"	"
108-88-3	Toluene	6.23		µg/l	1.00	0.81	1	"	"	"	"	"	"
87-61-6	1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00	0.38	1	"	"	"	"	"	"
120-82-1	1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00	0.36	1	"	"	"	"	"	"
108-70-3	1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00	0.78	1	"	"	"	"	"	"
71-55-6	1,1,1-Trichloroethane	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	"
79-00-5	1,1,2-Trichloroethane	< 1.00		µg/l	1.00	0.64	1	"	"	"	"	"	"
79-01-6	Trichloroethene	< 1.00		µg/l	1.00	0.76	1	"	"	"	"	"	"
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00	0.63	1	"	"	"	"	"	"
96-18-4	1,2,3-Trichloropropane	< 1.00		µg/l	1.00	0.74	1	"	"	"	"	"	"
95-63-6	1,2,4-Trimethylbenzene	20.1		µg/l	1.00	0.76	1	"	"	"	"	"	"
108-67-8	1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00	0.74	1	"	"	"	"	"	"
75-01-4	Vinyl chloride	< 1.00		µg/l	1.00	0.81	1	"	"	"	"	"	"
179601-23-1	m,p-Xylene	< 2.00		µg/l	2.00	1.64	1	"	"	"	"	"	"
95-47-6	o-Xylene	12.3		µg/l	1.00	0.88	1	"	"	"	"	"	"
109-99-9	Tetrahydrofuran	< 2.00		µg/l	2.00	1.44	1	"	"	"	"	"	"
60-29-7	Ethyl ether	< 1.00		µg/l	1.00	0.69	1	"	"	"	"	"	"
994-05-8	Tert-amyl methyl ether	< 1.00		µg/l	1.00	0.72	1	"	"	"	"	"	"
637-92-3	Ethyl tert-butyl ether	< 1.00		µg/l	1.00	0.78	1	"	"	"	"	"	"
108-20-3	Di-isopropyl ether	< 1.00		µg/l	1.00	0.73	1	"	"	"	"	"	"
75-65-0	Tert-Butanol / butyl alcohol	56.3		µg/l	10.0	8.64	1	"	"	"	"	"	"
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	14.0	1	"	"	"	"	"	"
110-57-6	trans-1,4-Dichloro-2-butene	< 5.00		µg/l	5.00	0.77	1	"	"	"	"	"	"
64-17-5	Ethanol	< 400		µg/l	400	35.7	1	"	"	"	"	"	"

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	102			70-130 %			"	"	"	"	"	"
2037-26-5	Toluene-d8	101			70-130 %			"	"	"	"	"	"
17060-07-0	1,2-Dichloroethane-d4	106			70-130 %			"	"	"	"	"	"
1868-53-7	Dibromofluoromethane	104			70-130 %			"	"	"	"	"	"

Extractable Petroleum Hydrocarbons

Fingerprinting by GC

Prepared by method SW846 3510C

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Sample Identification

TP-1 Client Project # 03-209630 Matrix Ground Water Collection Date/Time 10-Jan-13 15:15 Received 11-Jan-13
 SB63009-01

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
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Extractable Petroleum Hydrocarbons

Fingerprinting by GC

Prepared by method SW846 3510C

8006-61-9	Gasoline	0.5		mg/l	0.2	0.2	1	SW846 8100Mod.	15-Jan-13	15-Jan-13	SEP	1301131	
68476-30-2	Fuel Oil #2	< 0.2		mg/l	0.2	0.2	1	"	"	"	"	"	
68476-31-3	Fuel Oil #4	< 0.2		mg/l	0.2	0.02	1	"	"	"	"	"	
68553-00-4	Fuel Oil #6	< 0.2		mg/l	0.2	0.2	1	"	"	"	"	"	
M09800000	Motor Oil	< 0.2		mg/l	0.2	0.2	1	"	"	"	"	"	
8032-32-4	Ligroin	< 0.2		mg/l	0.2	0.06	1	"	"	"	"	"	
J00100000	Aviation Fuel	< 0.2		mg/l	0.2	0.06	1	"	"	"	"	"	
	Hydraulic Oil	< 0.2		mg/l	0.2	0.02	1	"	"	"	"	"	
	Dielectric Fluid	< 0.2		mg/l	0.2	0.06	1	"	"	"	"	"	
	Unidentified	< 0.2		mg/l	0.2	0.06	1	"	"	"	"	"	
	Other Oil	< 0.2		mg/l	0.2	0.02	1	"	"	"	"	"	
	Total Petroleum Hydrocarbons	0.5		mg/l	0.2	0.02	1	"	"	"	"	"	

Surrogate recoveries:

3386-33-2	1-Chlorooctadecane	110			40-140 %			"	"	"	"	"	
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Total Metals by EPA 200/6000 Series Methods

Preservation	Field Preserved			N/A			1	EPA 200/6000 methods			BJW	1301186	
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Total Metals by EPA 6000/7000 Series Methods

7439-89-6	Iron	18.8		mg/l	0.0150	0.0100	1	SW846 6010C	15-Jan-13	17-Jan-13	EDT	1301188	
7439-92-1	Lead	< 0.0075		mg/l	0.0075	0.0016	1	"	"	"	"	"	

General Chemistry Parameters

Total Suspended Solids	21			mg/l	5	2	1	SM2540D	15-Jan-13	16-Jan-13	BD	1301153	X
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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1301407 - SW846 5030 Water MS										
Blank (1301407-BLK1)										<u>Prepared & Analyzed: 17-Jan-13</u>
1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.00		µg/l	1.00						
Acetone	< 10.0		µg/l	10.0						
Acrylonitrile	< 0.50		µg/l	0.50						
Benzene	< 1.00		µg/l	1.00						
Bromobenzene	< 1.00		µg/l	1.00						
Bromochloromethane	< 1.00		µg/l	1.00						
Bromodichloromethane	< 0.50		µg/l	0.50						
Bromoform	< 1.00		µg/l	1.00						
Bromomethane	< 2.00		µg/l	2.00						
2-Butanone (MEK)	< 10.0		µg/l	10.0						
n-Butylbenzene	< 1.00		µg/l	1.00						
sec-Butylbenzene	< 1.00		µg/l	1.00						
tert-Butylbenzene	< 1.00		µg/l	1.00						
Carbon disulfide	< 2.00		µg/l	2.00						
Carbon tetrachloride	< 1.00		µg/l	1.00						
Chlorobenzene	< 1.00		µg/l	1.00						
Chloroethane	< 2.00		µg/l	2.00						
Chloroform	< 1.00		µg/l	1.00						
Chloromethane	< 2.00		µg/l	2.00						
2-Chlorotoluene	< 1.00		µg/l	1.00						
4-Chlorotoluene	< 1.00		µg/l	1.00						
1,2-Dibromo-3-chloropropane	< 2.00		µg/l	2.00						
Dibromochloromethane	< 0.50		µg/l	0.50						
1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50						
Dibromomethane	< 1.00		µg/l	1.00						
1,2-Dichlorobenzene	< 1.00		µg/l	1.00						
1,3-Dichlorobenzene	< 1.00		µg/l	1.00						
1,4-Dichlorobenzene	< 1.00		µg/l	1.00						
Dichlorodifluoromethane (Freon12)	< 2.00		µg/l	2.00						
1,1-Dichloroethane	< 1.00		µg/l	1.00						
1,2-Dichloroethane	< 1.00		µg/l	1.00						
1,1-Dichloroethene	< 1.00		µg/l	1.00						
cis-1,2-Dichloroethene	< 1.00		µg/l	1.00						
trans-1,2-Dichloroethene	< 1.00		µg/l	1.00						
1,2-Dichloropropane	< 1.00		µg/l	1.00						
1,3-Dichloropropane	< 1.00		µg/l	1.00						
2,2-Dichloropropane	< 1.00		µg/l	1.00						
1,1-Dichloropropene	< 1.00		µg/l	1.00						
cis-1,3-Dichloropropene	< 0.50		µg/l	0.50						
trans-1,3-Dichloropropene	< 0.50		µg/l	0.50						
Ethylbenzene	< 1.00		µg/l	1.00						
Hexachlorobutadiene	< 0.50		µg/l	0.50						
2-Hexanone (MBK)	< 10.0		µg/l	10.0						
Isopropylbenzene	< 1.00		µg/l	1.00						
4-Isopropyltoluene	< 1.00		µg/l	1.00						
Methyl tert-butyl ether	< 1.00		µg/l	1.00						
4-Methyl-2-pentanone (MIBK)	< 10.0		µg/l	10.0						
Methylene chloride	< 2.00		µg/l	2.00						
Naphthalene	< 1.00		µg/l	1.00						
n-Propylbenzene	< 1.00		µg/l	1.00						
Styrene	< 1.00		µg/l	1.00						
1,1,1,2-Tetrachloroethane	< 1.00		µg/l	1.00						

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1301407 - SW846 5030 Water MS										
Blank (1301407-BLK1)					<u>Prepared & Analyzed: 17-Jan-13</u>					
1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50						
Tetrachloroethene	< 1.00		µg/l	1.00						
Toluene	< 1.00		µg/l	1.00						
1,2,3-Trichlorobenzene	< 1.00		µg/l	1.00						
1,2,4-Trichlorobenzene	< 1.00		µg/l	1.00						
1,3,5-Trichlorobenzene	< 1.00		µg/l	1.00						
1,1,1-Trichloroethane	< 1.00		µg/l	1.00						
1,1,2-Trichloroethane	< 1.00		µg/l	1.00						
Trichloroethene	< 1.00		µg/l	1.00						
Trichlorofluoromethane (Freon 11)	< 1.00		µg/l	1.00						
1,2,3-Trichloropropane	< 1.00		µg/l	1.00						
1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00						
1,3,5-Trimethylbenzene	< 1.00		µg/l	1.00						
Vinyl chloride	< 1.00		µg/l	1.00						
m,p-Xylene	< 2.00		µg/l	2.00						
o-Xylene	< 1.00		µg/l	1.00						
Tetrahydrofuran	< 2.00		µg/l	2.00						
Ethyl ether	< 1.00		µg/l	1.00						
Tert-amyl methyl ether	< 1.00		µg/l	1.00						
Ethyl tert-butyl ether	< 1.00		µg/l	1.00						
Di-isopropyl ether	< 1.00		µg/l	1.00						
Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0						
1,4-Dioxane	< 20.0		µg/l	20.0						
trans-1,4-Dichloro-2-butene	< 5.00		µg/l	5.00						
Ethanol	< 400		µg/l	400						
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Surrogate: 4-Bromofluorobenzene	47.8		µg/l		50.0		96	70-130		
Surrogate: Toluene-d8	48.7		µg/l		50.0		97	70-130		
Surrogate: 1,2-Dichloroethane-d4	51.5		µg/l		50.0		103	70-130		
Surrogate: Dibromofluoromethane	52.7		µg/l		50.0		105	70-130		
LCS (1301407-BS1)					<u>Prepared & Analyzed: 17-Jan-13</u>					
1,1,2-Trichlorotrifluoroethane (Freon 113)	21.8		µg/l		20.0		109	70-130		
Acetone	18.9		µg/l		20.0		94	70-130		
Acrylonitrile	18.6		µg/l		20.0		93	70-130		
Benzene	20.1		µg/l		20.0		100	70-130		
Bromobenzene	19.8		µg/l		20.0		99	70-130		
Bromochloromethane	20.4		µg/l		20.0		102	70-130		
Bromodichloromethane	20.0		µg/l		20.0		100	70-130		
Bromoform	20.1		µg/l		20.0		100	70-130		
Bromomethane	23.5		µg/l		20.0		117	70-130		
2-Butanone (MEK)	18.0		µg/l		20.0		90	70-130		
n-Butylbenzene	22.4		µg/l		20.0		112	70-130		
sec-Butylbenzene	23.4		µg/l		20.0		117	70-130		
tert-Butylbenzene	23.2		µg/l		20.0		116	70-130		
Carbon disulfide	19.6		µg/l		20.0		98	70-130		
Carbon tetrachloride	21.7		µg/l		20.0		109	70-130		
Chlorobenzene	19.2		µg/l		20.0		96	70-130		
Chloroethane	19.0		µg/l		20.0		95	70-130		
Chloroform	22.2		µg/l		20.0		111	70-130		
Chloromethane	21.5		µg/l		20.0		108	70-130		
2-Chlorotoluene	21.4		µg/l		20.0		107	70-130		
4-Chlorotoluene	22.4		µg/l		20.0		112	70-130		

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1301407 - SW846 5030 Water MS										
LCS (1301407-BS1)	Prepared & Analyzed: 17-Jan-13									
1,2-Dibromo-3-chloropropane	18.4		µg/l		20.0		92	70-130		
Dibromochloromethane	19.9		µg/l		20.0		100	70-130		
1,2-Dibromoethane (EDB)	19.7		µg/l		20.0		99	70-130		
Dibromomethane	19.1		µg/l		20.0		96	70-130		
1,2-Dichlorobenzene	19.5		µg/l		20.0		97	70-130		
1,3-Dichlorobenzene	20.5		µg/l		20.0		102	70-130		
1,4-Dichlorobenzene	18.4		µg/l		20.0		92	70-130		
Dichlorodifluoromethane (Freon12)	18.8		µg/l		20.0		94	70-130		
1,1-Dichloroethane	19.1		µg/l		20.0		96	70-130		
1,2-Dichloroethane	18.3		µg/l		20.0		92	70-130		
1,1-Dichloroethene	20.0		µg/l		20.0		100	70-130		
cis-1,2-Dichloroethene	20.4		µg/l		20.0		102	70-130		
trans-1,2-Dichloroethene	18.7		µg/l		20.0		94	70-130		
1,2-Dichloropropane	19.6		µg/l		20.0		98	70-130		
1,3-Dichloropropane	18.9		µg/l		20.0		95	70-130		
2,2-Dichloropropane	26.8	QM9	µg/l		20.0		134	70-130		
1,1-Dichloropropene	21.2		µg/l		20.0		106	70-130		
cis-1,3-Dichloropropene	20.8		µg/l		20.0		104	70-130		
trans-1,3-Dichloropropene	21.8		µg/l		20.0		109	70-130		
Ethylbenzene	21.2		µg/l		20.0		106	70-130		
Hexachlorobutadiene	20.1		µg/l		20.0		101	70-130		
2-Hexanone (MBK)	15.5		µg/l		20.0		77	70-130		
Isopropylbenzene	21.6		µg/l		20.0		108	70-130		
4-Isopropyltoluene	21.5		µg/l		20.0		107	70-130		
Methyl tert-butyl ether	19.1		µg/l		20.0		96	70-130		
4-Methyl-2-pentanone (MIBK)	16.1		µg/l		20.0		80	70-130		
Methylene chloride	19.2		µg/l		20.0		96	70-130		
Naphthalene	14.6		µg/l		20.0		73	70-130		
n-Propylbenzene	21.9		µg/l		20.0		110	70-130		
Styrene	22.9		µg/l		20.0		115	70-130		
1,1,1,2-Tetrachloroethane	20.3		µg/l		20.0		101	70-130		
1,1,1,2,2-Tetrachloroethane	20.5		µg/l		20.0		102	70-130		
Tetrachloroethene	20.8		µg/l		20.0		104	70-130		
Toluene	19.7		µg/l		20.0		98	70-130		
1,2,3-Trichlorobenzene	20.6		µg/l		20.0		103	70-130		
1,2,4-Trichlorobenzene	19.7		µg/l		20.0		98	70-130		
1,3,5-Trichlorobenzene	20.1		µg/l		20.0		101	70-130		
1,1,1-Trichloroethane	21.1		µg/l		20.0		105	70-130		
1,1,2-Trichloroethane	19.6		µg/l		20.0		98	70-130		
Trichloroethene	18.3		µg/l		20.0		92	70-130		
Trichlorofluoromethane (Freon 11)	20.9		µg/l		20.0		104	70-130		
1,2,3-Trichloropropane	18.5		µg/l		20.0		93	70-130		
1,2,4-Trimethylbenzene	23.8		µg/l		20.0		119	70-130		
1,3,5-Trimethylbenzene	23.0		µg/l		20.0		115	70-130		
Vinyl chloride	21.0		µg/l		20.0		105	70-130		
m,p-Xylene	45.4		µg/l		40.0		114	70-130		
o-Xylene	23.2		µg/l		20.0		116	70-130		
Tetrahydrofuran	18.8		µg/l		20.0		94	70-130		
Ethyl ether	19.6		µg/l		20.0		98	70-130		
Tert-amyl methyl ether	23.4		µg/l		20.0		117	70-130		
Ethyl tert-butyl ether	23.1		µg/l		20.0		115	70-130		
Di-isopropyl ether	20.4		µg/l		20.0		102	70-130		

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1301407 - SW846 5030 Water MS										
LCS (1301407-BS1)					<u>Prepared & Analyzed: 17-Jan-13</u>					
Tert-Butanol / butyl alcohol	155		µg/l		200		77	70-130		
1,4-Dioxane	173		µg/l		200		87	70-130		
trans-1,4-Dichloro-2-butene	17.6		µg/l		20.0		88	70-130		
Ethanol	346		µg/l		400		86	70-130		
Surrogate: 4-Bromofluorobenzene	52.5		µg/l		50.0		105	70-130		
Surrogate: Toluene-d8	50.2		µg/l		50.0		100	70-130		
Surrogate: 1,2-Dichloroethane-d4	51.8		µg/l		50.0		104	70-130		
Surrogate: Dibromofluoromethane	51.2		µg/l		50.0		102	70-130		
LCS Dup (1301407-BSD1)					<u>Prepared & Analyzed: 17-Jan-13</u>					
1,1,2-Trichlorotrifluoroethane (Freon 113)	20.9		µg/l		20.0		104	70-130	4	20
Acetone	18.7		µg/l		20.0		94	70-130	1	20
Acrylonitrile	17.7		µg/l		20.0		89	70-130	4	20
Benzene	19.3		µg/l		20.0		96	70-130	4	20
Bromobenzene	20.1		µg/l		20.0		100	70-130	1	20
Bromochloromethane	20.2		µg/l		20.0		101	70-130	0.7	20
Bromodichloromethane	19.5		µg/l		20.0		97	70-130	3	20
Bromoform	20.5		µg/l		20.0		102	70-130	2	20
Bromomethane	22.8		µg/l		20.0		114	70-130	3	20
2-Butanone (MEK)	18.3		µg/l		20.0		92	70-130	2	20
n-Butylbenzene	21.4		µg/l		20.0		107	70-130	5	20
sec-Butylbenzene	23.3		µg/l		20.0		116	70-130	0.5	20
tert-Butylbenzene	23.2		µg/l		20.0		116	70-130	0.1	20
Carbon disulfide	18.5		µg/l		20.0		93	70-130	6	20
Carbon tetrachloride	20.9		µg/l		20.0		105	70-130	4	20
Chlorobenzene	18.9		µg/l		20.0		94	70-130	1	20
Chloroethane	17.9		µg/l		20.0		90	70-130	6	20
Chloroform	20.9		µg/l		20.0		104	70-130	6	20
Chloromethane	20.5		µg/l		20.0		103	70-130	5	20
2-Chlorotoluene	21.0		µg/l		20.0		105	70-130	2	20
4-Chlorotoluene	22.0		µg/l		20.0		110	70-130	1	20
1,2-Dibromo-3-chloropropane	17.6		µg/l		20.0		88	70-130	4	20
Dibromochloromethane	19.9		µg/l		20.0		100	70-130	0	20
1,2-Dibromoethane (EDB)	19.7		µg/l		20.0		99	70-130	0	20
Dibromomethane	18.8		µg/l		20.0		94	70-130	2	20
1,2-Dichlorobenzene	19.1		µg/l		20.0		95	70-130	2	20
1,3-Dichlorobenzene	20.5		µg/l		20.0		103	70-130	0.4	20
1,4-Dichlorobenzene	18.1		µg/l		20.0		91	70-130	2	20
Dichlorodifluoromethane (Freon12)	18.0		µg/l		20.0		90	70-130	5	20
1,1-Dichloroethane	18.4		µg/l		20.0		92	70-130	4	20
1,2-Dichloroethane	18.0		µg/l		20.0		90	70-130	2	20
1,1-Dichloroethene	19.4		µg/l		20.0		97	70-130	3	20
cis-1,2-Dichloroethene	19.7		µg/l		20.0		98	70-130	3	20
trans-1,2-Dichloroethene	18.0		µg/l		20.0		90	70-130	4	20
1,2-Dichloropropane	18.9		µg/l		20.0		95	70-130	4	20
1,3-Dichloropropane	18.7		µg/l		20.0		94	70-130	1	20
2,2-Dichloropropane	25.5		µg/l		20.0		128	70-130	5	20
1,1-Dichloropropene	20.3		µg/l		20.0		102	70-130	4	20
cis-1,3-Dichloropropene	20.7		µg/l		20.0		104	70-130	0.6	20
trans-1,3-Dichloropropene	21.7		µg/l		20.0		109	70-130	0.6	20
Ethylbenzene	20.9		µg/l		20.0		105	70-130	1	20
Hexachlorobutadiene	20.2		µg/l		20.0		101	70-130	0.4	20

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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1301407 - SW846 5030 Water MS										
LCS Dup (1301407-BSD1)								<u>Prepared & Analyzed: 17-Jan-13</u>		
2-Hexanone (MBK)	12.3	QR2	µg/l		20.0		61	70-130	23	20
Isopropylbenzene	21.2		µg/l		20.0		106	70-130	2	20
4-Isopropyltoluene	20.6		µg/l		20.0		103	70-130	4	20
Methyl tert-butyl ether	18.9		µg/l		20.0		95	70-130	0.9	20
4-Methyl-2-pentanone (MIBK)	16.7		µg/l		20.0		83	70-130	4	20
Methylene chloride	19.0		µg/l		20.0		95	70-130	1	20
Naphthalene	15.0		µg/l		20.0		75	70-130	3	20
n-Propylbenzene	21.7		µg/l		20.0		109	70-130	0.8	20
Styrene	22.4		µg/l		20.0		112	70-130	2	20
1,1,1,2-Tetrachloroethane	20.2		µg/l		20.0		101	70-130	0.4	20
1,1,2,2-Tetrachloroethane	20.4		µg/l		20.0		102	70-130	0.7	20
Tetrachloroethene	20.5		µg/l		20.0		103	70-130	1	20
Toluene	19.3		µg/l		20.0		96	70-130	2	20
1,2,3-Trichlorobenzene	20.7		µg/l		20.0		104	70-130	0.9	20
1,2,4-Trichlorobenzene	19.8		µg/l		20.0		99	70-130	0.7	20
1,3,5-Trichlorobenzene	19.7		µg/l		20.0		98	70-130	2	20
1,1,1-Trichloroethane	19.9		µg/l		20.0		99	70-130	6	20
1,1,2-Trichloroethane	19.4		µg/l		20.0		97	70-130	0.9	20
Trichloroethene	18.0		µg/l		20.0		90	70-130	2	20
Trichlorofluoromethane (Freon 11)	20.0		µg/l		20.0		100	70-130	4	20
1,2,3-Trichloropropane	18.4		µg/l		20.0		92	70-130	0.8	20
1,2,4-Trimethylbenzene	23.6		µg/l		20.0		118	70-130	0.9	20
1,3,5-Trimethylbenzene	22.8		µg/l		20.0		114	70-130	1	20
Vinyl chloride	20.0		µg/l		20.0		100	70-130	5	20
m,p-Xylene	45.0		µg/l		40.0		112	70-130	1	20
o-Xylene	22.6		µg/l		20.0		113	70-130	2	20
Tetrahydrofuran	18.7		µg/l		20.0		94	70-130	0.4	20
Ethyl ether	18.9		µg/l		20.0		94	70-130	4	20
Tert-amyl methyl ether	22.6		µg/l		20.0		113	70-130	4	20
Ethyl tert-butyl ether	22.6		µg/l		20.0		113	70-130	2	20
Di-isopropyl ether	19.6		µg/l		20.0		98	70-130	4	20
Tert-Butanol / butyl alcohol	152		µg/l		200		76	70-130	2	20
1,4-Dioxane	161		µg/l		200		81	70-130	7	20
trans-1,4-Dichloro-2-butene	17.7		µg/l		20.0		88	70-130	0.5	20
Ethanol	386		µg/l		400		97	70-130	11	20
Surrogate: 4-Bromofluorobenzene	52.6		µg/l		50.0		105	70-130		
Surrogate: Toluene-d8	50.6		µg/l		50.0		101	70-130		
Surrogate: 1,2-Dichloroethane-d4	48.0		µg/l		50.0		96	70-130		
Surrogate: Dibromofluoromethane	50.8		µg/l		50.0		102	70-130		

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Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1301131 - SW846 3510C										
Blank (1301131-BLK1)					<u>Prepared & Analyzed: 15-Jan-13</u>					
Gasoline	< 0.2		mg/l	0.2						
Fuel Oil #2	< 0.2		mg/l	0.2						
Fuel Oil #4	< 0.2		mg/l	0.2						
Fuel Oil #6	< 0.2		mg/l	0.2						
Motor Oil	< 0.2		mg/l	0.2						
Ligroin	< 0.2		mg/l	0.2						
Aviation Fuel	< 0.2		mg/l	0.2						
Hydraulic Oil	< 0.2		mg/l	0.2						
Dielectric Fluid	< 0.2		mg/l	0.2						
Unidentified	< 0.2		mg/l	0.2						
Other Oil	< 0.2		mg/l	0.2						
Total Petroleum Hydrocarbons	< 0.2		mg/l	0.2						
<hr/>										
Surrogate: 1-Chlorooctadecane	0.0559		mg/l		0.0500		112	40-140		
LCS (1301131-BS2)					<u>Prepared & Analyzed: 15-Jan-13</u>					
Fuel Oil #2	10.0		mg/l	0.2	10.0		100	40-140		
<hr/>										
Surrogate: 1-Chlorooctadecane	0.0459		mg/l		0.0500		92	40-140		

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Total Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1301188 - SW846 3005A										
<u>Blank (1301188-BLK1)</u>					Prepared: 15-Jan-13 Analyzed: 17-Jan-13					
Iron	< 0.0150		mg/l	0.0150						
Lead	< 0.0075		mg/l	0.0075						
<u>LCS (1301188-BS1)</u>					Prepared: 15-Jan-13 Analyzed: 17-Jan-13					
Iron	1.33		mg/l	0.0150	1.25		107	85-115		
Lead	1.25		mg/l	0.0075	1.25		100	85-115		
<u>LCS Dup (1301188-BSD1)</u>					Prepared: 15-Jan-13 Analyzed: 17-Jan-13					
Iron	1.36		mg/l	0.0150	1.25		109	85-115	2	20
Lead	1.26		mg/l	0.0075	1.25		101	85-115	0.8	20
<u>Duplicate (1301188-DUP1)</u>					Source: SB63009-01 Prepared: 15-Jan-13 Analyzed: 17-Jan-13					
Iron	19.4		mg/l	0.0150		18.8			3	20
Lead	0.0030	J,QR8	mg/l	0.0075		0.0017			55	20
<u>Matrix Spike (1301188-MS1)</u>					Source: SB63009-01 Prepared: 15-Jan-13 Analyzed: 17-Jan-13					
Iron	20.2		mg/l	0.0150	1.25	18.8	114	75-125		
Lead	1.21		mg/l	0.0075	1.25	0.0017	97	75-125		
<u>Matrix Spike Dup (1301188-MSD1)</u>					Source: SB63009-01 Prepared: 15-Jan-13 Analyzed: 17-Jan-13					
Iron	19.9		mg/l	0.0150	1.25	18.8	92	75-125	1	20
Lead	1.22		mg/l	0.0075	1.25	0.0017	97	75-125	0.08	20
<u>Post Spike (1301188-PS1)</u>					Source: SB63009-01 Prepared: 15-Jan-13 Analyzed: 17-Jan-13					
Iron	19.8		mg/l	0.0150	1.25	18.8	80	80-120		
Lead	1.20		mg/l	0.0075	1.25	0.0017	96	80-120		

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General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1301153 - General Preparation										
<u>Blank (1301153-BLK1)</u>					Prepared: 15-Jan-13 Analyzed: 16-Jan-13					
Total Suspended Solids	< 5		mg/l	5						
<u>LCS (1301153-BS1)</u>					Prepared: 15-Jan-13 Analyzed: 16-Jan-13					
Total Suspended Solids	96		mg/l	10	100		96	90-110		

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Notes and Definitions

QM9	The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits.
QR2	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QR8	Analyses are not controlled on RPD values from sample concentrations that are less than 5 times the reporting level. The batch is accepted based upon the difference between the sample and duplicate is less than or equal to the reporting limit.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

Interpretation of Total Petroleum Hydrocarbon Report

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

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

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

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

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

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

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

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

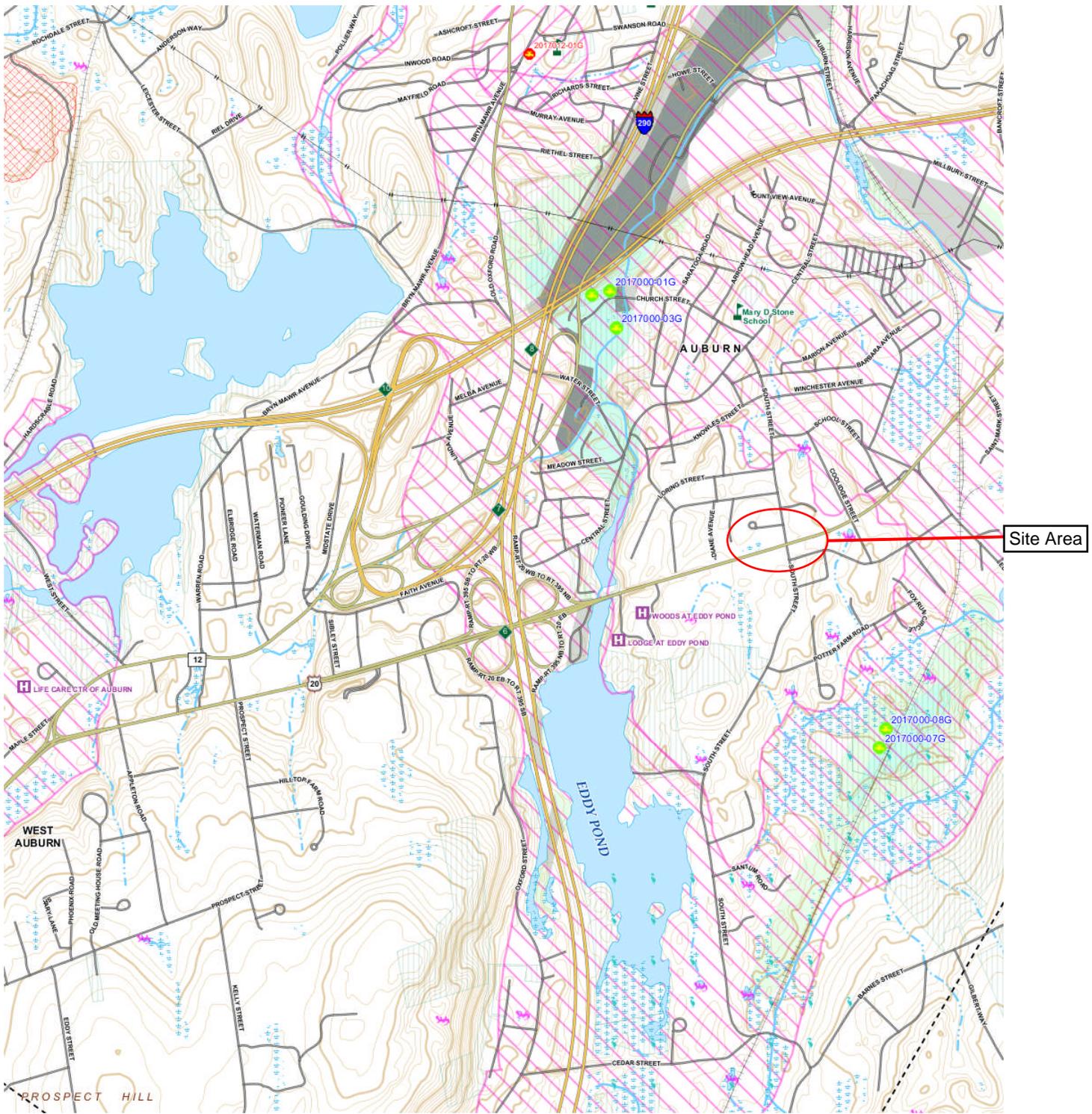
Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve.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

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

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

Validated by:
Rebecca Merz

ATTACHMENT III



oliver OLIVER: MassGIS's Online Mapping Tool

Available Data Layers

Search data layers

Tiled Layers
Layers for Query
State Facilities
MassGIS Default Map
Census 1990
Census 2000
Census 2010
Coastal and Marine Features
Conservation / Recreation
Cultural Resources
Environmental Monitoring (testing/monitoring sites)

Active Data Layers

Check all Uncheck all Remove all

- NavTeq MA Other Streets Names
- Major MassDOT Routes
- Massachusetts Towns
- NHESP Estimated Habitats of Rare Wildlife
- NHESP Priority Habitats of Rare Species

Legend

- NavTeq MA Other Streets Names
- Major MassDOT Routes
 - Interstate Highways
 - US Roads
 - State
- Massachusetts Towns
- NHESP Estimated Habitats of Rare Wildlife
- NHESP Priority Habitats of Rare Species

ATTACHMENT IV

Massachusetts Cultural Resource Information

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results

[Get Results in Report Format](#)

PDF Spreadsheet

Below are the results of your search, using the following search criteria:

Town(s): Auburn

Street No: 502

Street Name: washington

Resource Type(s): Area, Building, Burial Ground, Object, Structure

For more information about this page and how to use it, [click here](#)

No Results Found.

[New Search](#) [New Search — Same Town\(s\)](#) [Previous](#)

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