



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

CERTIFIED MAIL RETURN RECEIPT REQUESTED

MAY 15 2014

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

Re: Authorization to discharge under the Remediation General Permit (RGP) –
MAG910000. Cumberland Farms Inc., site located at 217 Worcester St., Grafton, MA
01519, Worcester South County; Authorization # MAG910619

Dear Mr. Young:

Based on the review of a Notice of Intent (NOI) submitted by Mr. Michael C. Bricher from Environmental Compliance Services, Inc., on behalf of Cumberland Farms, 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 have exceeded Appendix III limits. The checklist also includes other parameters for which your laboratory reports indicated there was insufficient sensitivity to detect these parameters at the minimum levels established in Appendix VI of the RGP

Also, please note that the metals included on the checklist are dilution dependent pollutants and subject to limitations based on selected dilution ranges and technology-based ceiling limitations. For each parameter the dilution factor 47.42 for this site is within a dilution range greater than ten to fifty (>10 to 50), established in the RGP. (See

the RGP Appendix IV for Massachusetts facilities). Therefore, the limits for lead of 13 ug/L, and iron of 5,000ug/L, are required to achieve permit compliance at your site.

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

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on 09/30/2014. 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, Chief
Storm Water and Construction
Permits Section

Enclosure

cc: Robert Kubit, MassDEP
Peter Sellers, Framingham DPW
Michael C. Bricher, ECS, Inc.

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

NPDES Authorization Number:		MAG910619
Authorization Issued:	May, 2014	
Facility/Site Name:	Cumberland Farms Inc.	
Facility/Site Address:	217 Worcester Street, Framingham, MA 01519	
	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 The Project Completion:	September 30, 2014	
Category and Sub-Category:	Category I – Petroleum Related Site Remediation. Subcategory C. Petroleum Sites with Additional Contamination.	
RGP Termination Date:	September 2015	
Receiving Water:	Culvert Stream to Quinsigamond River	

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#160.2/ML5ug/L
	2. Total Residual Chlorine (TRC) ¹	Freshwater = 11 ug/L ** Saltwater = 7.5 ug/L **/ Me#330.5/ML 20ug/L
✓	3. Total Petroleum Hydrocarbons (TPH)	5.0 mg/L/ Me# 1664A/ML 5.0mg/L
	4. Cyanide (CN) ^{2, 3}	Freshwater = 5.2 ug/l ** Saltwater = 1.0 ug/L **/ Me#335.4/ML 10ug/L
	5. Benzene (B)	5ug/L /50.0 ug/L for hydrostatic testing only/ Me#8260C/ML 2 ug/L
	6. Toluene (T)	(limited as ug/L total BTEX)/ Me#8260C/ ML 2ug/L
	7. Ethylbenzene (E)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
	8. (m,p,o) Xylenes (X)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
✓	9. Total Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX) ⁴	100 ug/L/ Me#8260C/ ML 2ug/L

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L
✓	11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l/Me#8260C/ML 10ug/L
	12.tert-Butyl Alcohol (TBA) (TertiaryButanol)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	13. tert-Amyl Methyl Ether (TAME)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	14. Naphthalene ⁵	20 ug/L /Me#8260C/ML 2ug/L
	15. Carbon Tetrachloride	4.4 ug/L /Me#8260C/ ML 5ug/L
	16. 1,2 Dichlorobenzene (o-DCB)	600 ug/L /Me#8260C/ ML 5ug/L
	17. 1,3 Dichlorobenzene (m-DCB)	320 ug/L /Me#8260C/ ML 5ug/L
	18. 1,4 Dichlorobenzene (p-DCB)	5.0 ug/L /Me#8260C/ ML 5ug/L
	18a. Total dichlorobenzene	763 ug/L - NH only /Me#8260C/ ML 5ug/L
	19. 1,1 Dichloroethane (DCA)	70 ug/L /Me#8260C/ ML 5ug/L
	20. 1,2 Dichloroethane (DCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	21. 1,1 Dichloroethene (DCE)	3.2 ug/L/Me#8260C/ ML 5ug/L
	22. cis-1,2 Dichloroethene (DCE)	70 ug/L/Me#8260C/ ML 5ug/L
	23. Methylene Chloride	4.6 ug/L/Me#8260C/ ML 5ug/L
	24. Tetrachloroethene (PCE)	5.0 ug/L/Me#8260C/ ML 5ug/L
	25. 1,1,1 Trichloro-ethane (TCA)	200 ug/L/Me#8260C/ ML 5ug/L
	26. 1,1,2 Trichloro-ethane (TCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	27. Trichloroethene (TCE)	5.0 ug/L /Me#8260C/ ML 5ug/L
	28. Vinyl Chloride (Chloroethene)	2.0 ug/L /Me#8260C/ ML 5ug/L
	29. Acetone	Monitor Only(ug/L)/Me#8260C/ML 50ug/L
	30. 1,4 Dioxane	Monitor Only /Me#1624C/ML 50ug/L
	31. Total Phenols	300 ug/L Me#420.1&420.2/ML 2 ug/L/ Me# 420.4 /ML 50ug/L
	32. Pentachlorophenol (PCP)	1.0 ug/L /Me#8270D/ML 5ug/L, Me#604 &625/ML 10ug/L
	33. Total Phthalates (Phthalate esters) ⁶	3.0 ug/L ** /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L& Me#625/ML 5ug/L
	34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	6.0 ug/L /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L & Me#625/ML 5ug/L
	35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/L
✓	a. Benzo(a) Anthracene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L

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

	<u>Metal parameter</u>	<u>Total Recoverable Metal Limit @ H ¹⁰ = 50 mg/l CaCO3 for discharges in Massachusetts (ug/l) ^{11/12}</u>	<u>Minimum level=ML</u>
		<u>Freshwater</u>	
	39. Antimony	5.6/ML 10	
	40. Arsenic **	10/ML 20	

	Metal parameter	Total Recoverable Metal Limit @ H¹⁰ = 50 mg/l CaCO₃ for discharges in Massachusetts (ug/l) ^{11/12}		Minimum level=ML	
		Freshwater			
	41. Cadmium **	0.2		ML10	
	42. Chromium III (trivalent) **	48.8		ML15	
	43. Chromium VI (hexavalent) **	11.4		ML10	
	44. Copper **	5.2		ML15	
✓	45. Lead **	1.3		ML20	
	46. Mercury **	0.9		ML02	
	47. Nickel **	29		ML20	
	48. Selenium **	5		ML20	
	49. Silver	1.2		ML10	
	50. Zinc **	66.6		ML15	
✓	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 $DF=5$.

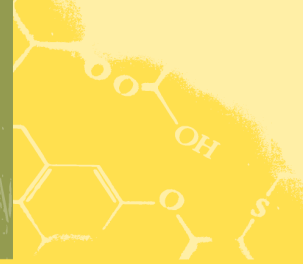
¹² Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the 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

May 2, 2014
Project No. 03-220304

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 Inc.
217 Worcester Street
Grafton, MA 01519**

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 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 installation of new petroleum underground storage tanks (USTs) during site redevelopment. A Site Locus is provided as Figure 1, a Site Grading and Drainage Plan as Figure 2, and a Boundary and Topographic Survey Plan depicting the dewatering discharge location is provided as Figure 2A. A Flow Schematic of the dewatering treatment plan is included as Figure 3. A copy of the NOI form is provided as Attachment I.

System Design

Groundwater treatment will occur prior to discharge to the storm water manhole located along the northern property boundary. A plan detailing the location of the new UST system is depicted on Figure 2, and the proposed storm water manhole discharge location is depicted on Figure 2A.

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 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 proposed discharge location for treated groundwater is a catch basin (CB-1) located on the northern boundary of the subject property along the shoulder of Worcester Street (Route 122). This storm water catch basin (CB-1) discharges to a storm water drainage culvert running underneath Worcester Street. The storm water drainage culvert discharges into an unnamed stream located north of Worcester Street. This stream discharges into Hovey Pond located approximately 3,000 feet northeast of the Site property boundary. Hovey Pond ultimately discharges to the Quinsigamond River located approximately 3,000 feet east of the Site. Please refer to Figure 1 for a depiction of the unnamed stream located north of the property as well as Hovey Pond and Quinsigamond River.

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 75 gpm based upon data collected from comparable systems installed at other remedial sites operated/designed by ECS.

Influent Sample Analysis

Groundwater samples were collected from monitoring well MW-3 on April 10, 2014. These samples were submitted to Spectrum Analytical, Inc. of Agawam, Massachusetts under standard chain of custody protocol for analysis of extractable petroleum hydrocarbons (EPH) by MassDEP method, volatile organic compounds (VOCs) by USEPA Method 8260B, total metals (iron and lead) by USEPA Method 200.7, polychlorinated biphenyls (PCBs) and total suspended solids by SM2540D. A copy of the laboratory report 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. Groundwater analytical results of the samples collected from MW-3 on April 10, 2014 were compared to the Appendix III effluent limitations (www.epa.gov/region1/npdes/rgp.html). These results indicate that the petroleum constituents (i.e., benzene, total benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tert butyl ether (MTBE), and naphthalene) were not detected in the sample at concentrations above the applicable Appendix III effluent limitations for Subcategory A-Petroleum Sites with additional contamination.

Receiving Waters Information

The receiving water for the treated groundwater discharge is the Quinsigamond River, located approximately 3,000 feet 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 April 30, 2014). Data obtained from the online resource indicated that the 7Q10 flow rate for the Quinsigamond River at USGS station #01110100 (approximately 2,000 feet east of the Site) is 7.8 cubic feet per second (cfs). Based on data available, ECS calculated a 7Q10 flow rate for this area to be 468 cubic feet per minute.

Receiving Water Classification

ECS consulted the Massachusetts Department of Environmental Protection (MassDEP) Division of Water Pollution Control (<http://www.mass.gov/eea/docs/dep/water/laws/i-thru-z/tblfig.pdf>) to determine the classification for the receiving waters. The Quinsigamond 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 the proposed at or immediately adjacent to the work zone area. The closest NHESP Estimated Habitats of Rare Wildlife in Wetland Areas Protected Open Spaces are located approximately 3,000 feet east of the Site. Given the fact there will be an on-site dewatering treatment system, the potential discharge will not have an adverse affect on the NHESP Estimated Habitats of Rare Wildlife. 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 Grafton 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 April 23, 2014). 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 historic properties.

Lastly, discharges in Massachusetts under the RGP are subject to MassDEP application form BRP WM 12 and a payment fee of \$950.00. A copy of the MassDEP application form BRP WM 12 and payment check are included in Attachment V.

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.

A handwritten signature in blue ink, appearing to read "Michael Bricher", with a stylized flourish extending to the right.

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
William M. Clougherty, P.E., MassDOT Highway Division, District 3, 403 Belmont Street, Worcester, MA 01604
David Crouse, Highway Superintendant, Town of Grafton Highway Department, 27 Upton Street, Grafton, MA 01519

LIST OF ATTACHMENTS

Figures

Figure 1: Site Locus

Figure 2: Site Grading and Drainage Plan

Figure 2A: Boundary and Topographic Survey Plan

Figure 3: Flow Schematic

Attachment I: NOI for the RGP

Attachment II: Laboratory Analytical Reports and Chain of Custody Records

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

Attachment IV: MACRIS Database Search Results

Attachment V: BRP WM 12 Transmittal Form and Copy of Fee Payment

FIGURES



Environmental Compliance Services, Inc.

588 Silver Street, Agawam, MA 01001

Phone (413)-789-3530 Fax (413)-789-2776

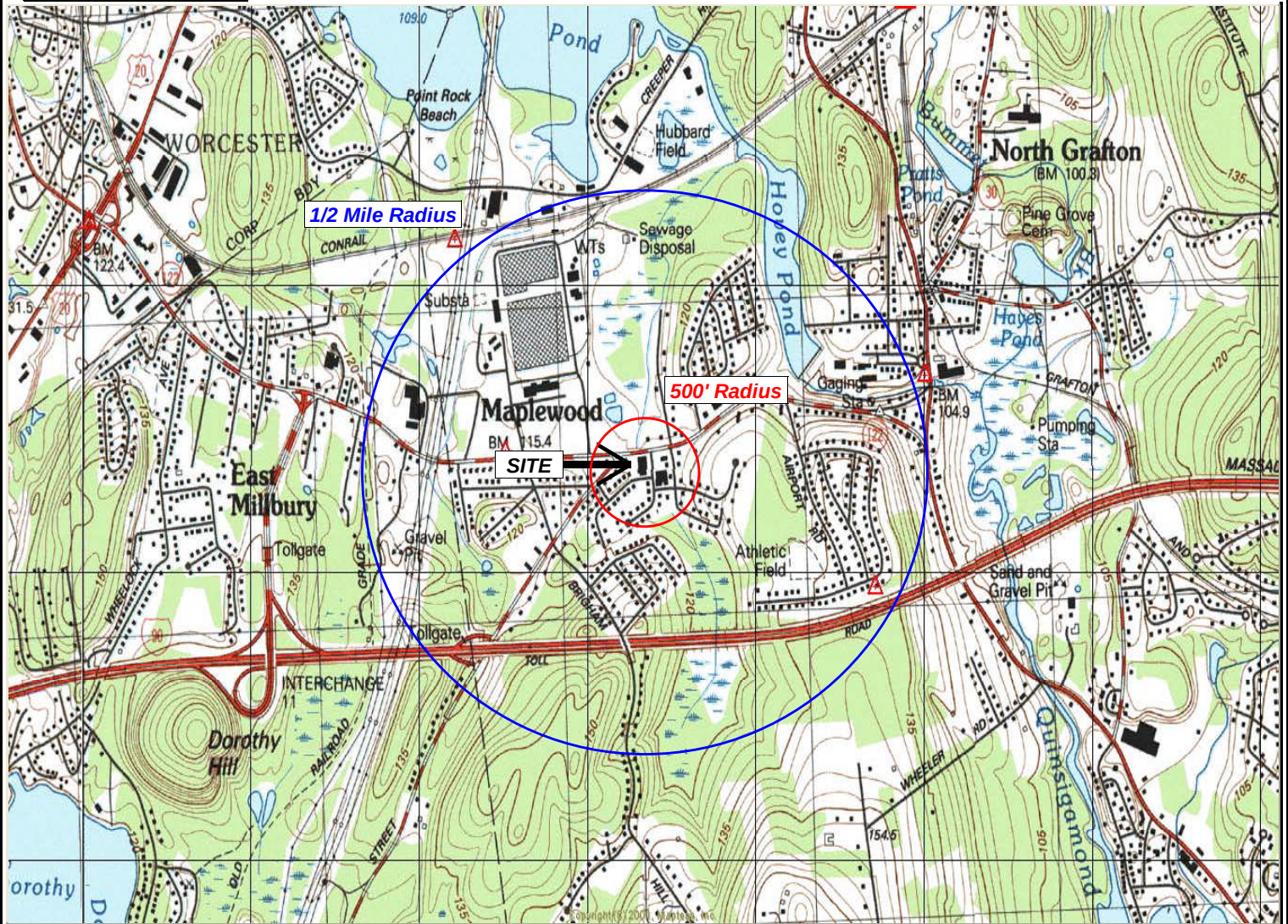
www.ecsconsult.com

SITE LOCUS

Figure: 1

**217 Worcester St
Grafton, MA**

Job Number: 01-220304



1 1/2 0 1 Mile

1 inch = 1500 feet

Contour Interval: 3 Meters

North



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

Latitude and Longitude: 42d 13' 41.20' North / 71d 43' 20.09' West

Map Edited: 1982

Map Revised:

Generated By: CEF

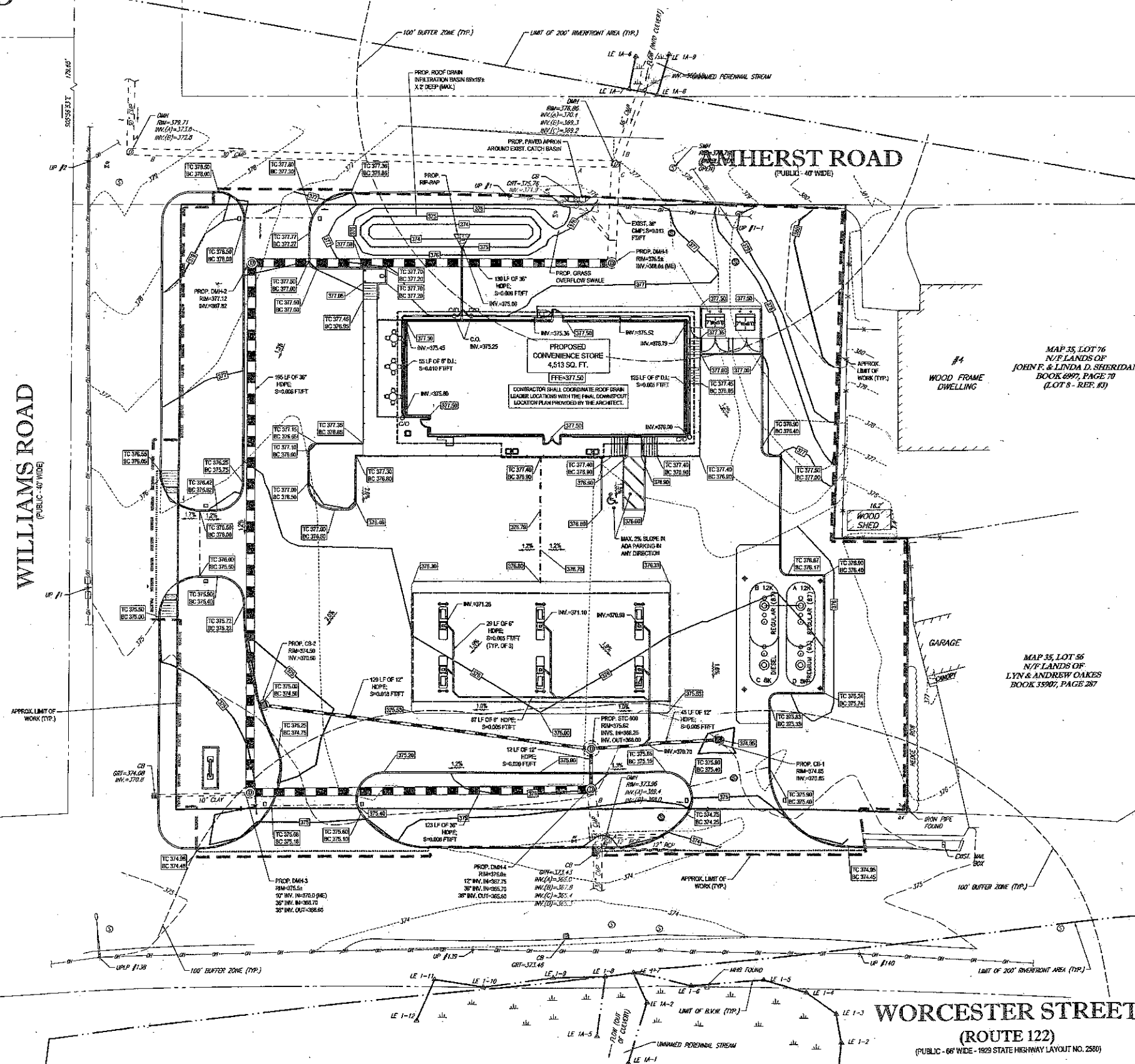


Figure 2

THIS PLAN TO BE UTILIZED FOR SITE
GRADING PURPOSES ONLY

REFER TO GENERAL NOTES SHEET
FOR GRADING & UTILITY NOTES



BOHLER
ENGINEERING

ENGINEERING

CORPORATE OFFICE

- WARREN, NJ

SURVEYORS

- SOUTHMOORE, AL
- CHILMARK, PA

PROJECT MANAGERS

- TOWSON, MD
- STERLING, VA
- ALBANY, NY
- WARRINGTON, VA

ENVIRONMENTAL CONSULTANTS

- ROBINSON, NY
- PORT LAUDERDALE, FL
- CENTER VALLEY, PA

LANDSCAPE ARCHITECTS

WILLY & CONSULTING ENGINEERS

REVISIONS			
REV	DATE	COMMENT	
1	7/21/13	CFI COMMENTS	M
2	8/13/15	WETLAND DELINEATIONS	M
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

PERMIT
SET

PROJECT No.:	W131041S
DRAWN BY:	CFD/M
CHECKED BY:	LD
DATE:	06/26/20
SCALE:	AS NOTED
CAD I.D.:	W131041S

PROJECT: **SITE PLAN
DOCUMENTS**

FOR
Cumberland
FARMS
MAP #35, LOT #54
217 WORCESTER STREET
(ROUTE 122)
TOWN OF GRAFTON
WORCESTER COUNTY
MASSACHUSETTS

PREPARED FOR:
 GERSHMAN BROWN CROWLEY, INC.
 14 BREAKNECK HILL RD., SUITE 1
 LINCOLN, RI 02865


BOHLER
ENGINEERING

352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 450-9900
Fax: (508) 450-9080
www.BohlerEngineering.com

S.P. DR. CHASE



PROFESSIONAL ENGINEER
 MASSACHUSETTS LICENSE NO. 22874
 NEW HAMPSHIRE LICENSE NO. 0001
 MAINE PROFESSIONAL
 VERMONT LICENSE NO. 7110
 CONNECTICUT LICENSE NO. 22862
 RHODE ISLAND LICENSE NO. 7060

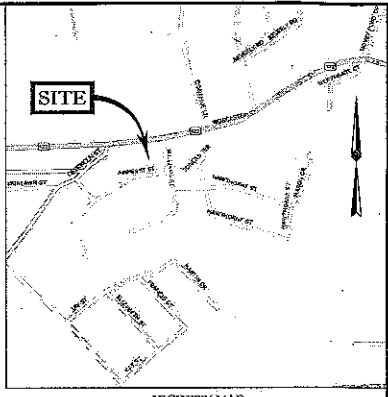
SHEET TITLE:
**SITE GRADING
& DRAINAGE
PLAN**

SHEET NUMBER:
CFG5.0

REV 2-08/13/2

HAWTHORNE ROAD

AMHERST ROAD



VICINITY MAP
© 2008 Delorme, Street Atlas USA

ZONING INFORMATION	
COMMUNITY BUSINESS DISTRICT (CB)	
SOURCE: PER CUMBERLAND GROUP PRELIMINARY ZONING ANALYSIS	
ITEMS	REQUIRED
MIN. LOT AREA	40,000 S.F.
MIN. FRONTAGE	140 FT.
MIN. FRONT YARD SETBACK	40 FT.
MIN. SIDE YARD SETBACK	15 FT.
MIN. REAR YARD SETBACK	15 FT.
MAX. BUILDING COVERAGE	30%
MAX. BUILDING HEIGHT	36 FT.

NOTE: ZONING CRITERIA IDENTIFIED HEREON ARE BASED UPON PRELIMINARY INVESTIGATION AND PRESENTED FOR REFERENCE ONLY. SAME MUST BE CONFIRMED WITH LOCAL ZONING OFFICIAL AND LEGAL COUNSEL TO CONFIRM VALIDITY.

NOTES:

- PROPERTY KNOWN AS LOT 54, MAP 35, TOWN OF GRAFTON, WORCESTER COUNTY, COMMONWEALTH OF MASSACHUSETTS.
- AREA = 57,385 SQ. FT. OR 1.318 ACRES.
- LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE. LOCATIONS AND SIZES ARE BASED ON UTILITY MARKINGS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. AVAILABLE AS-BUILT PLANS AND UTILITY MARKING DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES. CONTROL POINT ASSOCIATES, INC. DOES NOT GUARANTEE THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED.
- THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC. AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
- THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO THE RESTRICTIONS, COVENANTS AND/OR EASEMENTS THAT MAY BE CONTAINED THEREON.
- BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN FLOOD HAZARD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) PER REF. #2.
- ELEVATIONS ARE BASED UPON NAVD 83, REFERENCE BENCHMARK: NGS DISK N38, ELEVATION=877.81 (NGVD 88).
- THE OFFSETS SHOWN ARE NOT TO BE USED FOR THE CONSTRUCTION OF ANY STRUCTURE, FENCE, PERMANENT ADDITION, ETC.

REFERENCES:

- THE TAX ASSESSOR'S MAP OF TOWN OF GRAFTON, WORCESTER COUNTY, MASSACHUSETTS, MAP NO. 35.
- MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, WORCESTER COUNTY, MASSACHUSETTS, (ALL JURISDICTIONS), PANEL 026 OF 1075," MAP NUMBER 25072002E, EFFECTIVE DATE: JULY 4, 2011.
- MAP ENTITLED "PROPOSED DEVELOPMENT OF LAND IN GRAFTON, MASS. BY THE HENLEY-LUDGREN CO.," DATED: APRIL 1946, REVISED: MAY 1946, FILED IN THE WORCESTER DISTRICT REGISTRY OF DEEDS IN PLAN BOOK 146, PLAN 36.
- MAP ENTITLED "GRAFTON - 1929 ALTERATION," LAYOUT NO. 2380, SHEETS 2 & 3 OF 15.
- SEWER FACILITY MAPPING AND TIE CARDS PROVIDED BY THE GRAFTON SEWER DEPARTMENT ON MAY 2, 2013.
- WATER FACILITY TIE CARD PROVIDED BY THE GRAFTON WATER DISTRICT ON MAY 2, 2013.
- GAS FACILITY MAPPING PROVIDED BY NSTAR GAS ON MAY 2, 2013.

THIS SURVEY HAS BEEN PERFORMED IN THE FIELD UNDER MY SUPERVISION, AND TO THE BEST OF MY KNOWLEDGE, BELIEF, AND INFORMATION, THIS SURVEY HAS BEEN PERFORMED IN ACCORDANCE WITH CURRENTLY ACCEPTED ACCURACY STANDARDS.

NOT A VALID ORIGINAL DOCUMENT UNLESS EMBOSSED WITH RAISED IMPRESSION OR STAMPED WITH A BLUE INK SEAL

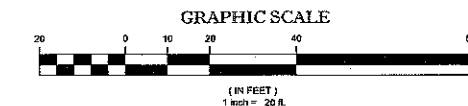
A. JOHN LLOYD

MASSACHUSETTS PROFESSIONAL LAND SURVEYOR #26395

FIELD DATE		BOUNDARY & TOPOGRAPHIC SURVEY	
5-19-13		217 WORCESTER STREET	
FIELD BOOK NO.		LOT 54, MAP 35	
12-37		TOWN OF GRAFTON	
FIELD BOOK NO.		WORCESTER COUNTY	
141-142		COMMONWEALTH OF MASSACHUSETTS	
FIELD CREW		CONTROL POINT ASSOCIATES, INC.	
B.S.B.		355 TURNPIKE ROAD	
DRAWN:		SOUTHBOROUGH, MA 01772	
IDV_VW		WARREN, NJ 07068-0999	
REVIEWED:		DATE	
R.G.B.		05-29-13	
APPROVED:		SCALE	
A.J.L.		1"=20'	
FILE NO.		CM13071	
DWE NO.		1 OF 1	

Figure 2A

Proposed Discharge Location (CB-1)



WORCESTER STREET

(PUBLIC - 65' WIDE - 1929 STATE HIGHWAY LAYOUT NO. 2380)
(ASPHALT ROADWAY) (A.K.A. ROUTE 122)

- LEGEND
- EXISTING CONTOUR
 - X 123.45 EXISTING SPOT ELEVATION
 - X 123.45 EXISTING TOP OF CURB ELEVATION
 - X 123.45 EXISTING GUTTER ELEVATION
 - X 123.45 EXISTING FINISH FLOOR ELEVATION
 - W WATER VALVE
 - G GAS VALVE
 - M GAS METER
 - S APPROX. LOC. PURPORTED UNDERGROUND SEWER LINE
 - OH OVERHEAD WIRES
 - C APPROX. LOC. UNDERGROUND GAS LINE PER UTILITY MARKOUT
 - F APPROX. LOC. UNDERGROUND WATER LINE PER UTILITY MARKOUT AND REFERENCE S.
 - UP 1- UTILITY POLE
 - UP 1- UTILITY POLE/LIGHT POLE
 - W WIRE
 - AREA LIGHT
 - SN SIGN
 - MAIL BOX
 - B BOLLARD
 - ASPH. ASPHALT
 - CLF CHAIN LINK FENCE
 - CONC. CONCRETE
 - E.O.C. EDGE OF CONCRETE
 - E.O.P. EDGE OF PAVEMENT
 - (TYP.) TYPICAL
 - SM SANITARY/SEWER MANHOLE
 - DM DRAIN MANHOLE
 - CB CATCH BASIN OR INLET
 - PC PARKING SPACE COUNT
 - S.W.L. SOLID WHITE LINE
 - S.Y.L. SOLID YELLOW LINE
 - Ht. HEIGHT
 - D.Y.L. DASHED YELLOW LINE
 - BLDG. BUILDING
 - MHI MASSACHUSETTS HIGHWAY BOUND
 - GRT GRATE ELEVATION
 - INV. INVERT ELEVATION
 - CM CORRUGATED METAL PIPE
 - PVC POLYVINYL CHLORIDE PIPE
 - E.T.W. EDGE OF TRAVELED WAY

UTILITIES:
THE FOLLOWING COMPANIES WERE NOTIFIED BY MASSACHUSETTS ONE-CALL SYSTEM (1-888-344-7333) AND REQUESTED TO MARK OUT UNDERGROUND FACILITIES AFFECTING AND SERVING THIS SITE. THE UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS BASED UPON THE UTILITY COMPANIES RESPONSE TO THIS REQUEST. SERIAL NUMBER(S): 20131012708

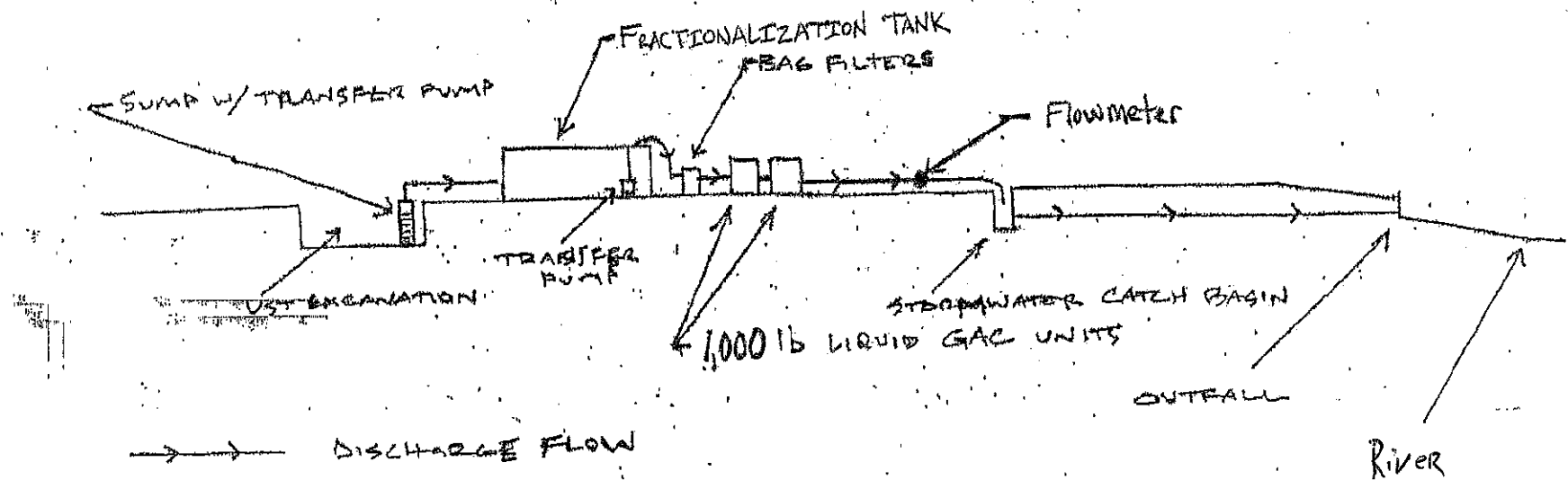
UTILITY COMPANY	PHONE NUMBER
NSTAR GAS	800-562-2000
VERIZON	508-767-0600
NATIONAL GRID ELECTRIC-MASS ELEC	800-352-3023
ON-TARGET LOCATING	508-425-1602
INNOVATIVE DATA MANAGEMENT	888-664-5577



THE COMMONWEALTH OF MASSACHUSETTS REQUIRES NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO EXCAVATE THE EXISTING SURFACE ANYWHERE IN THE STATE.

CONTROL POINT ASSOCIATES, INC. - ALL RIGHTS RESERVED.
THE PREPAREDNESS OF THIS SURVEY IS THE RESPONSIBILITY OF THE SURVEYOR. NO PART OF THIS SURVEY IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM CONTROL POINT ASSOCIATES, INC.

Flow Schematic - Figure 3



ATTACHMENT I

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 ____ B. Well Development/Rehabilitation at Contaminated/Formerly Contaminated Sites ____ C. Hydrostatic Testing of Pipelines and Tanks ____ D. Long-Term Remediation of Contaminated Sumps and Dikes ____ E. Short-term Contaminated Dredging Drain Back Waters (if not covered by 401/404 permit) ____
---------------------------------------	---

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

a) Describe the discharge activities for which the owner/applicant is seeking coverage:	
b) Provide the following information about each discharge:	
1) Number of discharge points:	2) What is the maximum and average flow rate of discharge (in cubic feet per second, ft ³ /s)? Max. flow _____ Is maximum flow a design value ? Y ____ N ____ Average flow (include units) _____ Is average flow a design value or estimate? _____
3) Latitude and longitude of each discharge within 100 feet: pt.1: lat. _____ long. _____; pt.2: lat. _____ long. _____; pt.3: lat. _____ long. _____; pt.4: lat. _____ long. _____; pt.5: lat. _____ long. _____; pt.6: lat. _____ long. _____; pt.7: lat. _____ long. _____; pt.8: lat. _____ long. _____; etc.	
4) If hydrostatic testing, total volume of the discharge (gals): _____	5) Is the discharge intermittent ____ or seasonal ____? Is discharge ongoing? Y ____ N ____
c) Expected dates of discharge (mm/dd/yy): start _____ end _____	
d) Please attach a line drawing or flow schematic showing water flow through the facility including: 1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s).	

3. Contaminant information.

a) Based on the sub-category selected (see Appendix III), 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):

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

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

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

b) Identify each applicable treatment unit (check all that apply):	Frac. tank	Air stripper	Oil/water separator	Equalization tanks	Bag filter	GAC filter
	Chlorination	De-chlorination	Other (please describe):			

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

Average flow rate of discharge _____ gpm Maximum flow rate of treatment system _____ gpm

Design flow rate of treatment system _____ gpm

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

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.

- a) Using the instructions in Appendix VII and information on Appendix II, under which criterion listed in Part I.C are you eligible for coverage under this general permit?
A ____ B ____ C ____ D ____ E ____ F ____
- b) If you selected Criterion D or F, has consultation with the federal services been completed? Y ____ N ____ Underway ____
- c) If consultation with U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is “not likely to adversely affect” listed species or critical habitat received? Y ____ N ____
- d) Attach documentation of ESA eligibility as described in the NOI instructions and required by Appendix VII, Part I.C, Step 4.
- e) Using the instructions in Appendix VII, under which criterion listed in Part II.C are you eligible for coverage under this general permit?
1 ____ 2 ____ 3 ____
- f) If Criterion 3 was selected, attach all written correspondence with the State or Tribal historic preservation officers, including any terms and conditions that outline measures the applicant must follow to mitigate or prevent adverse effects due to activities regulated by the RGP.

7. Supplemental information.

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

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 Inc.
Operator signature:	
Printed Name & Title:	Matthew P. Young Senior Project Manager
Date:	5/1/14

ATTACHMENT II

Report Date:
18-Apr-14 16:58



- ☒ 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-Acquisition - Grafton, MA
Project #: 03-220304.02

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SB87479-01	MW-3	Ground Water	10-Apr-14 14:58	11-Apr-14 15:00

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 27 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, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, NJ-MA012, PA-68-04426 and FL-E87936).

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

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

Matrices	Ground Water
Containers	✓ Satisfactory
Aqueous Preservative	N/A ✓ pH ≤ 2 pH > 2 pH adjusted to < 2 in lab
Temperature	Received on ice ✓ Received at 4 ± 2 °C

Were all QA/QC procedures followed as required by the EPH method? *Yes*

Were any significant modifications made to the EPH method as specified in Section 11.3? *No*

Were all performance/acceptance standards for required QA/QC procedures achieved? *Yes*

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

Authorized by:



Nicole Leja
Laboratory Director

MassDEP Analytical Protocol Certification Form

Laboratory Name: Spectrum Analytical, Inc.			Project #: 03-220304.02		
Project Location: CFI-Acquisition - Grafton, MA			RTN:		
This form provides certifications for the following data set:			SB87479-01		
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 Yes No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)?				✓ Yes No
Responses to questions G, H and I below are required for "Presumptive Certainty" status					
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?				Yes ✓ No
Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?				Yes ✓ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?				Yes ✓ No
All negative responses are addressed in a case narrative on the cover page of this report.					
<i>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.</i>  Nicole Leja Laboratory Director Date: 4/18/2014					

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

The samples were received 3.2 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.

MADEP EPH 5/2004 R**Calibration:**

1402014

Analyte quantified by quadratic equation type calibration.

Benzo (a) pyrene
Dibenzo (a,h) anthracene
Indeno (1,2,3-cd) pyrene

This affected the following samples:

S401318-ICV2

Laboratory Control Samples:

1408042 BSD

Benzo (b) fluoranthene RPD 30% (25%) is outside individual acceptance criteria.

Benzo (g,h,i) perylene RPD 28% (25%) is outside individual acceptance criteria.

Dibenzo (a,h) anthracene RPD 30% (25%) is outside individual acceptance criteria.

Indeno (1,2,3-cd) pyrene RPD 28% (25%) is outside individual acceptance criteria.

SW846 6010C**Blanks:**

1408184-BLK1

SW846 6010C

Blanks:

1408184-BLK1

The method blank contains analyte at a concentration above the MRL; however, concentration is less than 10% of the sample result, which is negligible according to method criteria.

Iron

Spikes:

1408184-MSD1 *Source: SB87479-01*

The spike recovery exceeded the QC control limits for the MS and/or MSD. The batch was accepted based upon acceptable PS and /or LCS recovery.

Iron

SW846 8260C

Calibration:

1404004

Analyte quantified by quadratic equation type calibration.

1,1,2,2-Tetrachloroethane
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,2-Dibromo-3-chloropropane
1,3,5-Trimethylbenzene
1,4-Dioxane
2-Hexanone (MBK)
4-Methyl-2-pentanone (MIBK)
Bromoform
Carbon tetrachloride
cis-1,3-Dichloropropene
Dibromochloromethane
Naphthalene
n-Butylbenzene
sec-Butylbenzene
trans-1,3-Dichloropropene
trans-1,4-Dichloro-2-butene

This affected the following samples:

1408067-BLK1
1408067-BS1
1408067-BSD1
MW-3
S403289-ICV1
S403825-CCV1

Laboratory Control Samples:

1408067 BS/BSD

1,1,1-Trichloroethane percent recoveries (131/124) 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:

MW-3

2,2-Dichloropropane percent recoveries (133/119) 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:

MW-3

SW846 8260C

Laboratory Control Samples:

1408067 BS/BSD

Dichlorodifluoromethane (Freon12) percent recoveries (131/114) 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:

MW-3

Trichlorofluoromethane (Freon 11) percent recoveries (132/127) 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:

MW-3

Samples:

S403825-CCV1

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

1,1,1,2-Tetrachloroethane (25.1%)
1,1,1-Trichloroethane (36.5%)
1,1,2-Trichlorotrifluoroethane (Freon 113) (32.7%)
1,1-Dichloroethene (25.5%)
2,2-Dichloropropane (44.9%)
Bromodichloromethane (26.0%)
Dichlorodifluoromethane (Freon12) (32.0%)
Hexachlorobutadiene (21.8%)
tert-Butylbenzene (21.3%)
Tetrachloroethene (22.2%)
Trichlorofluoromethane (Freon 11) (41.1%)

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

Carbon tetrachloride (33.0%)

This affected the following samples:

1408067-BLK1
1408067-BS1
1408067-BSD1
MW-3

Sample Acceptance Check Form

Client: Environmental Compliance Services - Worcester, MA
 Project: CFI-Acquisition - Grafton, MA / 03-220304.02
 Work Order: SB87479
 Sample(s) received on: 4/11/2014
 Received by: Allison Edens

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
1. Were custody seals present?	☐	☒	☐
2. Were custody seals intact?	☐	☐	☒
3. Were samples received at a temperature of $\leq 6^{\circ}\text{C}$?	☒	☐	☐
4. Were samples cooled on ice upon transfer to laboratory representative?	☐	☒	☐
5. Were samples refrigerated upon transfer to laboratory representative?	☒	☐	☐
6. Were sample containers received intact?	☒	☐	☐
7. Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☒	☐	☐
8. Were samples accompanied by a Chain of Custody document?	☒	☐	☐
9. Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☒	☐	☐
10. Did sample container labels agree with Chain of Custody document?	☒	☐	☐
11. Were samples received within method-specific holding times?	☒	☐	☐

Sample Identification

MW-3
SB87479-01

Client Project #
03-220304.02

Matrix
Ground Water

Collection Date/Time
10-Apr-14 14:58

Received
11-Apr-14

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260													
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	15-Apr-14	15-Apr-14	GMA	1408067	
67-64-1	Acetone	< 10.0		µg/l	10.0	2.56	1	"	"	"	"	"	
107-13-1	Acrylonitrile	< 0.50		µg/l	0.50	0.48	1	"	"	"	"	"	
71-43-2	Benzene	< 1.00		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	1.93	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	1.28	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	1.00	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	1.20	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		µg/l	0.50	0.34	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50		µg/l	0.50	0.36	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	0.83	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.00		µg/l	1.00	0.77	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	0.87	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	0.36	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50		µg/l	0.50	0.50	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.00		µg/l	1.00	0.95	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50		µg/l	0.50	0.49	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 10.0		µg/l	10.0	0.66	1	"	"	"	"	"	

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

Sample Identification

MW-3

SB87479-01

Client Project #

03-220304.02

Matrix

Ground Water

Collection Date/Time

10-Apr-14 14:58

Received

11-Apr-14

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260													
Prepared by method SW846 5030 Water MS													
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.62	1	SW846 8260C	15-Apr-14	15-Apr-14	GMA	1408067	
99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.61	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	1.79		µg/l	1.00	0.65	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 10.0		µg/l	10.0	2.76	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.00		µg/l	2.00	0.95	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.00		µg/l	1.00	0.58	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.00		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	0.67	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50		µg/l	0.50	0.32	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.00		µg/l	1.00	0.74	1	"	"	"	"	"	
108-88-3	Toluene	< 1.00		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	< 1.00		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	< 1.00		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	< 10.0		µg/l	10.0	8.64	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	12.0	1	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-buten e	< 5.00		µg/l	5.00	0.74	1	"	"	"	"	"	
64-17-5	Ethanol	< 400		µg/l	400	35.0	1	"	"	"	"	"	

Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	98			70-130 %		"	"	"	"	"	"	
2037-26-5	Toluene-d8	100			70-130 %		"	"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	115			70-130 %		"	"	"	"	"	"	
1868-53-7	Dibromofluoromethane	113			70-130 %		"	"	"	"	"	"	

Semivolatile Organic Compounds by GCPolychlorinated BiphenylsPrepared by method SW846 3510C*This laboratory report is not valid without an authorized signature on the cover page.*

Sample Identification

MW-3

SB87479-01

Client Project #

03-220304.02

Matrix

Ground Water

Collection Date/Time

10-Apr-14 14:58

Received

11-Apr-14

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
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Semivolatile Organic Compounds by GCPolychlorinated BiphenylsPrepared by method SW846 3510C

12674-11-2	Aroclor-1016	< 0.233		µg/l	0.233	0.141	1	SW846 8082A	11-Apr-14	16-Apr-14	TG	1407916	
11104-28-2	Aroclor-1221	< 0.233		µg/l	0.233	0.178	1	"	"	"	"	"	
11141-16-5	Aroclor-1232	< 0.233		µg/l	0.233	0.156	1	"	"	"	"	"	
53469-21-9	Aroclor-1242	< 0.233		µg/l	0.233	0.136	1	"	"	"	"	"	
12672-29-6	Aroclor-1248	< 0.233		µg/l	0.233	0.114	1	"	"	"	"	"	
11097-69-1	Aroclor-1254	< 0.233		µg/l	0.233	0.143	1	"	"	"	"	"	
11096-82-5	Aroclor-1260	< 0.233		µg/l	0.233	0.143	1	"	"	"	"	"	
37324-23-5	Aroclor-1262	< 0.233		µg/l	0.233	0.128	1	"	"	"	"	"	
11100-14-4	Aroclor-1268	< 0.233		µg/l	0.233	0.108	1	"	"	"	"	"	

Surrogate recoveries:

10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	95			30-150 %			"	"	"	"	"	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	95			30-150 %			"	"	"	"	"	
2051-24-3	Decachlorobiphenyl (Sr)	75			30-150 %			"	"	"	"	"	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	75			30-150 %			"	"	"	"	"	

Extractable Petroleum HydrocarbonsMADEP EPHPrepared by method SW846 3510C

	C9-C18 Aliphatic Hydrocarbons	< 116		µg/l	116	47.5	1	MADEP EPH 5/2004 R	14-Apr-14	18-Apr-14	MWP	1408042	
	C19-C36 Aliphatic Hydrocarbons	< 116		µg/l	116	84.9	1	"	"	"	"	"	
	C11-C22 Aromatic Hydrocarbons	< 116		µg/l	116	73.3	1	"	"	"	"	"	
	Unadjusted C11-C22 Aromatic Hydrocarbons	< 116		µg/l	116	73.3	1	"	"	"	"	"	
91-20-3	Naphthalene	< 5.81		µg/l	5.81	3.58	1	"	"	"	"	"	
91-57-6	2-Methylnaphthalene	< 5.81		µg/l	5.81	3.81	1	"	"	"	"	"	
208-96-8	Acenaphthylene	< 5.81		µg/l	5.81	4.17	1	"	"	"	"	"	
83-32-9	Acenaphthene	< 5.81		µg/l	5.81	4.17	1	"	"	"	"	"	
86-73-7	Fluorene	< 5.81		µg/l	5.81	3.97	1	"	"	"	"	"	
85-01-8	Phenanthrene	< 5.81		µg/l	5.81	3.27	1	"	"	"	"	"	
120-12-7	Anthracene	< 5.81		µg/l	5.81	3.77	1	"	"	"	"	"	
206-44-0	Fluoranthene	< 5.81		µg/l	5.81	4.21	1	"	"	"	"	"	
129-00-0	Pyrene	< 5.81		µg/l	5.81	4.09	1	"	"	"	"	"	
56-55-3	Benzo (a) anthracene	< 5.81		µg/l	5.81	4.66	1	"	"	"	"	"	
218-01-9	Chrysene	< 5.81		µg/l	5.81	4.88	1	"	"	"	"	"	
205-99-2	Benzo (b) fluoranthene	< 5.81		µg/l	5.81	5.45	1	"	"	"	"	"	
207-08-9	Benzo (k) fluoranthene	< 5.81		µg/l	5.81	5.52	1	"	"	"	"	"	
50-32-8	Benzo (a) pyrene	< 5.81		µg/l	5.81	4.67	1	"	"	"	"	"	
193-39-5	Indeno (1,2,3-cd) pyrene	< 5.81		µg/l	5.81	5.05	1	"	"	"	"	"	
53-70-3	Dibenzo (a,h) anthracene	< 5.81		µg/l	5.81	5.55	1	"	"	"	"	"	
191-24-2	Benzo (g,h,i) perylene	< 5.81		µg/l	5.81	4.76	1	"	"	"	"	"	

Surrogate recoveries:

3386-33-2	1-Chlorooctadecane	67			40-140 %			"	"	"	"	"	
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18-Apr-14 16:58

* Reportable Detection Limit

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Sample Identification

MW-3

SB87479-01

Client Project #

03-220304.02

Matrix

Ground Water

Collection Date/Time

10-Apr-14 14:58

Received

11-Apr-14

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
Extractable Petroleum Hydrocarbons													
<u>MADEP EPH</u>													
<u>Prepared by method SW846 3510C</u>													
84-15-1	Ortho-Terphenyl	71			40-140 %			MADEP EPH 5/2004 R	14-Apr-14	18-Apr-14	MWP	1408042	
321-60-8	2-Fluorobiphenyl	58			40-140 %			"	"	"	"	"	
	Non-polar material (SGT-HEM)	< 1.1		mg/l	1.1	0.3	1	EPA 1664B	16-Apr-14	17-Apr-14	JK	1408154	
Total Metals by EPA 200/6000 Series Methods													
	Preservation	Lab Preserved		N/A			1	EPA 200/6000 methods	14-Apr-14	14-Apr-14	LNB	1407967	
Total Metals by EPA 6000/7000 Series Methods													
7439-89-6	Iron	1.38		mg/l	0.0150	0.0122	1	SW846 6010C	16-Apr-14	17-Apr-14	edt	1408184	
7439-92-1	Lead	< 0.0075		mg/l	0.0075	0.0032	1	"	18-Apr-14	18-Apr-14	"	1408480	
General Chemistry Parameters													
	Total Suspended Solids	114		mg/l	5.0	2.2	1	SM2540D	14-Apr-14	15-Apr-14	BD	1408033	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 1408067 - SW846 5030 Water MS										
Blank (1408067-BLK1)	Prepared & Analyzed: 15-Apr-14									
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 1408067 - SW846 5030 Water MS										
Blank (1408067-BLK1)					<u>Prepared & Analyzed: 15-Apr-14</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						
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>48.5</i>		<i>µg/l</i>		<i>50.0</i>		<i>97</i>	<i>70-130</i>		
<i>Surrogate: Toluene-d8</i>	<i>51.3</i>		<i>µg/l</i>		<i>50.0</i>		<i>103</i>	<i>70-130</i>		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>58.2</i>		<i>µg/l</i>		<i>50.0</i>		<i>116</i>	<i>70-130</i>		
<i>Surrogate: Dibromofluoromethane</i>	<i>56.1</i>		<i>µg/l</i>		<i>50.0</i>		<i>112</i>	<i>70-130</i>		
LCS (1408067-BS1)					<u>Prepared & Analyzed: 15-Apr-14</u>					
1,1,2-Trichlorotrifluoroethane (Freon 113)	25.7		µg/l		20.0		129	70-130		
Acetone	22.3		µg/l		20.0		112	70-130		
Acrylonitrile	19.5		µg/l		20.0		97	70-130		
Benzene	20.1		µg/l		20.0		101	70-130		
Bromobenzene	22.6		µg/l		20.0		113	70-130		
Bromochloromethane	23.9		µg/l		20.0		120	70-130		
Bromodichloromethane	24.3		µg/l		20.0		122	70-130		
Bromoform	22.6		µg/l		20.0		113	70-130		
Bromomethane	21.7		µg/l		20.0		109	70-130		
2-Butanone (MEK)	21.2		µg/l		20.0		106	70-130		
n-Butylbenzene	19.1		µg/l		20.0		96	70-130		
sec-Butylbenzene	20.1		µg/l		20.0		100	70-130		
tert-Butylbenzene	23.2		µg/l		20.0		116	70-130		
Carbon disulfide	22.4		µg/l		20.0		112	70-130		
Carbon tetrachloride	24.6		µg/l		20.0		123	70-130		
Chlorobenzene	20.1		µg/l		20.0		100	70-130		
Chloroethane	20.2		µg/l		20.0		101	70-130		
Chloroform	23.1		µg/l		20.0		116	70-130		
Chloromethane	19.6		µg/l		20.0		98	70-130		
2-Chlorotoluene	22.3		µg/l		20.0		111	70-130		
4-Chlorotoluene	22.0		µg/l		20.0		110	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 1408067 - SW846 5030 Water MS										
LCS (1408067-BS1)	Prepared & Analyzed: 15-Apr-14									
1,2-Dibromo-3-chloropropane	21.2		µg/l		20.0		106	70-130		
Dibromochloromethane	23.0		µg/l		20.0		115	70-130		
1,2-Dibromoethane (EDB)	22.1		µg/l		20.0		110	70-130		
Dibromomethane	22.0		µg/l		20.0		110	70-130		
1,2-Dichlorobenzene	20.6		µg/l		20.0		103	70-130		
1,3-Dichlorobenzene	21.7		µg/l		20.0		108	70-130		
1,4-Dichlorobenzene	19.4		µg/l		20.0		97	70-130		
Dichlorodifluoromethane (Freon12)	26.1		µg/l		20.0		131	70-130		
1,1-Dichloroethane	21.0		µg/l		20.0		105	70-130		
1,2-Dichloroethane	24.4		µg/l		20.0		122	70-130		
1,1-Dichloroethene	23.2		µg/l		20.0		116	70-130		
cis-1,2-Dichloroethene	22.4		µg/l		20.0		112	70-130		
trans-1,2-Dichloroethene	21.5		µg/l		20.0		107	70-130		
1,2-Dichloropropane	18.7		µg/l		20.0		94	70-130		
1,3-Dichloropropane	20.0		µg/l		20.0		100	70-130		
2,2-Dichloropropane	26.6	QM9	µg/l		20.0		133	70-130		
1,1-Dichloropropene	23.0		µg/l		20.0		115	70-130		
cis-1,3-Dichloropropene	21.2		µg/l		20.0		106	70-130		
trans-1,3-Dichloropropene	22.2		µg/l		20.0		111	70-130		
Ethylbenzene	21.1		µg/l		20.0		105	70-130		
Hexachlorobutadiene	23.4		µg/l		20.0		117	70-130		
2-Hexanone (MBK)	21.4		µg/l		20.0		107	70-130		
Isopropylbenzene	21.8		µg/l		20.0		109	70-130		
4-Isopropyltoluene	21.8		µg/l		20.0		109	70-130		
Methyl tert-butyl ether	21.5		µg/l		20.0		108	70-130		
4-Methyl-2-pentanone (MIBK)	22.9		µg/l		20.0		114	70-130		
Methylene chloride	21.7		µg/l		20.0		108	70-130		
Naphthalene	22.3		µg/l		20.0		112	70-130		
n-Propylbenzene	21.5		µg/l		20.0		108	70-130		
Styrene	21.6		µg/l		20.0		108	70-130		
1,1,1,2-Tetrachloroethane	22.3		µg/l		20.0		112	70-130		
1,1,2,2-Tetrachloroethane	22.0		µg/l		20.0		110	70-130		
Tetrachloroethene	23.3		µg/l		20.0		116	70-130		
Toluene	21.6		µg/l		20.0		108	70-130		
1,2,3-Trichlorobenzene	23.5		µg/l		20.0		117	70-130		
1,2,4-Trichlorobenzene	22.2		µg/l		20.0		111	70-130		
1,3,5-Trichlorobenzene	22.1		µg/l		20.0		111	70-130		
1,1,1-Trichloroethane	26.2	QM9	µg/l		20.0		131	70-130		
1,1,2-Trichloroethane	22.1		µg/l		20.0		111	70-130		
Trichloroethene	20.8		µg/l		20.0		104	70-130		
Trichlorofluoromethane (Freon 11)	26.3	QM9	µg/l		20.0		132	70-130		
1,2,3-Trichloropropane	18.4		µg/l		20.0		92	70-130		
1,2,4-Trimethylbenzene	22.5		µg/l		20.0		113	70-130		
1,3,5-Trimethylbenzene	21.3		µg/l		20.0		107	70-130		
Vinyl chloride	20.7		µg/l		20.0		104	70-130		
m,p-Xylene	20.8		µg/l		20.0		104	70-130		
o-Xylene	21.5		µg/l		20.0		108	70-130		
Tetrahydrofuran	18.4		µg/l		20.0		92	70-130		
Ethyl ether	20.1		µg/l		20.0		100	70-130		
Tert-amyl methyl ether	18.1		µg/l		20.0		91	70-130		
Ethyl tert-butyl ether	19.6		µg/l		20.0		98	70-130		
Di-isopropyl ether	19.3		µg/l		20.0		96	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 1408067 - SW846 5030 Water MS										
LCS (1408067-BS1)					Prepared & Analyzed: 15-Apr-14					
Tert-Butanol / butyl alcohol	218		µg/l		200		109	70-130		
1,4-Dioxane	210		µg/l		200		105	70-130		
trans-1,4-Dichloro-2-butene	21.2		µg/l		20.0		106	70-130		
Ethanol	379		µg/l		400		95	70-130		
Surrogate: 4-Bromofluorobenzene	51.4		µg/l		50.0		103	70-130		
Surrogate: Toluene-d8	51.6		µg/l		50.0		103	70-130		
Surrogate: 1,2-Dichloroethane-d4	57.8		µg/l		50.0		116	70-130		
Surrogate: Dibromofluoromethane	55.7		µg/l		50.0		111	70-130		
LCS Dup (1408067-BSD1)					Prepared & Analyzed: 15-Apr-14					
1,1,2-Trichlorotrifluoroethane (Freon 113)	24.1		µg/l		20.0		120	70-130	7	20
Acetone	23.7		µg/l		20.0		119	70-130	6	20
Acrylonitrile	20.3		µg/l		20.0		102	70-130	4	20
Benzene	20.1		µg/l		20.0		100	70-130	0.2	20
Bromobenzene	21.7		µg/l		20.0		108	70-130	4	20
Bromochloromethane	22.9		µg/l		20.0		114	70-130	4	20
Bromodichloromethane	22.8		µg/l		20.0		114	70-130	6	20
Bromoform	23.3		µg/l		20.0		117	70-130	3	20
Bromomethane	19.3		µg/l		20.0		97	70-130	12	20
2-Butanone (MEK)	22.2		µg/l		20.0		111	70-130	5	20
n-Butylbenzene	18.2		µg/l		20.0		91	70-130	5	20
sec-Butylbenzene	19.8		µg/l		20.0		99	70-130	1	20
tert-Butylbenzene	22.2		µg/l		20.0		111	70-130	4	20
Carbon disulfide	21.6		µg/l		20.0		108	70-130	4	20
Carbon tetrachloride	23.5		µg/l		20.0		117	70-130	5	20
Chlorobenzene	20.2		µg/l		20.0		101	70-130	0.3	20
Chloroethane	19.6		µg/l		20.0		98	70-130	3	20
Chloroform	21.9		µg/l		20.0		110	70-130	5	20
Chloromethane	17.6		µg/l		20.0		88	70-130	11	20
2-Chlorotoluene	20.9		µg/l		20.0		104	70-130	6	20
4-Chlorotoluene	22.0		µg/l		20.0		110	70-130	0.5	20
1,2-Dibromo-3-chloropropane	22.1		µg/l		20.0		110	70-130	4	20
Dibromochloromethane	22.1		µg/l		20.0		110	70-130	4	20
1,2-Dibromoethane (EDB)	22.3		µg/l		20.0		112	70-130	1	20
Dibromomethane	21.4		µg/l		20.0		107	70-130	3	20
1,2-Dichlorobenzene	20.4		µg/l		20.0		102	70-130	0.7	20
1,3-Dichlorobenzene	21.7		µg/l		20.0		109	70-130	0.3	20
1,4-Dichlorobenzene	19.3		µg/l		20.0		97	70-130	0.6	20
Dichlorodifluoromethane (Freon12)	22.7		µg/l		20.0		114	70-130	14	20
1,1-Dichloroethane	20.7		µg/l		20.0		104	70-130	1	20
1,2-Dichloroethane	22.5		µg/l		20.0		112	70-130	8	20
1,1-Dichloroethene	21.6		µg/l		20.0		108	70-130	7	20
cis-1,2-Dichloroethene	21.8		µg/l		20.0		109	70-130	3	20
trans-1,2-Dichloroethene	20.2		µg/l		20.0		101	70-130	6	20
1,2-Dichloropropane	18.3		µg/l		20.0		92	70-130	2	20
1,3-Dichloropropane	20.7		µg/l		20.0		103	70-130	4	20
2,2-Dichloropropane	23.9		µg/l		20.0		119	70-130	11	20
1,1-Dichloropropene	20.7		µg/l		20.0		104	70-130	11	20
cis-1,3-Dichloropropene	20.8		µg/l		20.0		104	70-130	2	20
trans-1,3-Dichloropropene	22.4		µg/l		20.0		112	70-130	0.9	20
Ethylbenzene	20.6		µg/l		20.0		103	70-130	2	20
Hexachlorobutadiene	22.4		µg/l		20.0		112	70-130	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 1408067 - SW846 5030 Water MS										
LCS Dup (1408067-BSD1)					Prepared & Analyzed: 15-Apr-14					
2-Hexanone (MBK)	22.2		µg/l		20.0		111	70-130	4	20
Isopropylbenzene	21.3		µg/l		20.0		107	70-130	3	20
4-Isopropyltoluene	20.8		µg/l		20.0		104	70-130	5	20
Methyl tert-butyl ether	20.9		µg/l		20.0		104	70-130	3	20
4-Methyl-2-pentanone (MIBK)	20.6		µg/l		20.0		103	70-130	10	20
Methylene chloride	20.6		µg/l		20.0		103	70-130	5	20
Naphthalene	22.9		µg/l		20.0		114	70-130	3	20
n-Propylbenzene	21.3		µg/l		20.0		106	70-130	1	20
Styrene	21.7		µg/l		20.0		109	70-130	0.6	20
1,1,1,2-Tetrachloroethane	22.5		µg/l		20.0		112	70-130	0.8	20
1,1,2,2-Tetrachloroethane	22.8		µg/l		20.0		114	70-130	3	20
Tetrachloroethene	22.4		µg/l		20.0		112	70-130	4	20
Toluene	20.3		µg/l		20.0		101	70-130	6	20
1,2,3-Trichlorobenzene	22.3		µg/l		20.0		112	70-130	5	20
1,2,4-Trichlorobenzene	21.5		µg/l		20.0		108	70-130	3	20
1,3,5-Trichlorobenzene	22.1		µg/l		20.0		111	70-130	0.05	20
1,1,1-Trichloroethane	24.8		µg/l		20.0		124	70-130	5	20
1,1,2-Trichloroethane	21.1		µg/l		20.0		105	70-130	5	20
Trichloroethene	19.9		µg/l		20.0		99	70-130	4	20
Trichlorofluoromethane (Freon 11)	25.3		µg/l		20.0		127	70-130	4	20
1,2,3-Trichloropropane	19.8		µg/l		20.0		99	70-130	7	20
1,2,4-Trimethylbenzene	21.8		µg/l		20.0		109	70-130	4	20
1,3,5-Trimethylbenzene	20.0		µg/l		20.0		100	70-130	7	20
Vinyl chloride	19.8		µg/l		20.0		99	70-130	5	20
m,p-Xylene	21.2		µg/l		20.0		106	70-130	2	20
o-Xylene	21.6		µg/l		20.0		108	70-130	0.6	20
Tetrahydrofuran	20.3		µg/l		20.0		102	70-130	10	20
Ethyl ether	20.9		µg/l		20.0		105	70-130	4	20
Tert-amyl methyl ether	17.4		µg/l		20.0		87	70-130	4	20
Ethyl tert-butyl ether	19.3		µg/l		20.0		96	70-130	2	20
Di-isopropyl ether	18.7		µg/l		20.0		93	70-130	3	20
Tert-Butanol / butyl alcohol	237		µg/l		200		119	70-130	9	20
1,4-Dioxane	198		µg/l		200		99	70-130	6	20
trans-1,4-Dichloro-2-butene	21.0		µg/l		20.0		105	70-130	1	20
Ethanol	403		µg/l		400		101	70-130	6	20
Surrogate: 4-Bromofluorobenzene	53.1		µg/l		50.0		106	70-130		
Surrogate: Toluene-d8	50.1		µg/l		50.0		100	70-130		
Surrogate: 1,2-Dichloroethane-d4	56.2		µg/l		50.0		112	70-130		
Surrogate: Dibromofluoromethane	54.6		µg/l		50.0		109	70-130		

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Semivolatile Organic Compounds by GC - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1407916 - SW846 3510C										
Blank (1407916-BLK1)					Prepared: 11-Apr-14 Analyzed: 14-Apr-14					
Aroclor-1016	< 0.200		µg/l	0.200						
Aroclor-1016 [2C]	< 0.200		µg/l	0.200						
Aroclor-1221	< 0.200		µg/l	0.200						
Aroclor-1221 [2C]	< 0.200		µg/l	0.200						
Aroclor-1232	< 0.200		µg/l	0.200						
Aroclor-1232 [2C]	< 0.200		µg/l	0.200						
Aroclor-1242	< 0.200		µg/l	0.200						
Aroclor-1242 [2C]	< 0.200		µg/l	0.200						
Aroclor-1248	< 0.200		µg/l	0.200						
Aroclor-1248 [2C]	< 0.200		µg/l	0.200						
Aroclor-1254	< 0.200		µg/l	0.200						
Aroclor-1254 [2C]	< 0.200		µg/l	0.200						
Aroclor-1260	< 0.200		µg/l	0.200						
Aroclor-1260 [2C]	< 0.200		µg/l	0.200						
Aroclor-1262	< 0.200		µg/l	0.200						
Aroclor-1262 [2C]	< 0.200		µg/l	0.200						
Aroclor-1268	< 0.200		µg/l	0.200						
Aroclor-1268 [2C]	< 0.200		µg/l	0.200						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	0.180		µg/l		0.200		90	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	0.180		µg/l		0.200		90	30-150		
Surrogate: Decachlorobiphenyl (Sr)	0.170		µg/l		0.200		85	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	0.170		µg/l		0.200		85	30-150		
LCS (1407916-BS1)					Prepared: 11-Apr-14 Analyzed: 14-Apr-14					
Aroclor-1016	2.16		µg/l	0.200	2.50		86	40-140		
Aroclor-1016 [2C]	2.16		µg/l	0.200	2.50		86	40-140		
Aroclor-1260	2.03		µg/l	0.200	2.50		81	40-140		
Aroclor-1260 [2C]	2.00		µg/l	0.200	2.50		80	40-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	0.180		µg/l		0.200		90	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	0.190		µg/l		0.200		95	30-150		
Surrogate: Decachlorobiphenyl (Sr)	0.130		µg/l		0.200		65	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	0.130		µg/l		0.200		65	30-150		
LCS Dup (1407916-BSD1)					Prepared: 11-Apr-14 Analyzed: 14-Apr-14					
Aroclor-1016	2.15		µg/l	0.200	2.50		86	40-140	0.5	20
Aroclor-1016 [2C]	2.08		µg/l	0.200	2.50		83	40-140	4	20
Aroclor-1260	1.93		µg/l	0.200	2.50		77	40-140	5	20
Aroclor-1260 [2C]	2.03		µg/l	0.200	2.50		81	40-140	1	20
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	0.170		µg/l		0.200		85	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	0.180		µg/l		0.200		90	30-150		
Surrogate: Decachlorobiphenyl (Sr)	0.140		µg/l		0.200		70	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	0.130		µg/l		0.200		65	30-150		

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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 1408042 - SW846 3510C										
Blank (1408042-BLK1)					Prepared: 14-Apr-14 Analyzed: 15-Apr-14					
C9-C18 Aliphatic Hydrocarbons	< 100		µg/l	100						
C19-C36 Aliphatic Hydrocarbons	< 100		µg/l	100						
C11-C22 Aromatic Hydrocarbons	< 100		µg/l	100						
Unadjusted C11-C22 Aromatic Hydrocarbons	< 100		µg/l	100						
Total Petroleum Hydrocarbons	< 300		µg/l	300						
Unadjusted Total Petroleum Hydrocarbons	< 300		µg/l	300						
Naphthalene	< 5.00		µg/l	5.00						
2-Methylnaphthalene	< 5.00		µg/l	5.00						
Acenaphthylene	< 5.00		µg/l	5.00						
Acenaphthene	< 5.00		µg/l	5.00						
Fluorene	< 5.00		µg/l	5.00						
Phenanthrene	< 5.00		µg/l	5.00						
Anthracene	< 5.00		µg/l	5.00						
Fluoranthene	< 5.00		µg/l	5.00						
Pyrene	< 5.00		µg/l	5.00						
Benzo (a) anthracene	< 5.00		µg/l	5.00						
Chrysene	< 5.00		µg/l	5.00						
Benzo (b) fluoranthene	< 5.00		µg/l	5.00						
Benzo (k) fluoranthene	< 5.00		µg/l	5.00						
Benzo (a) pyrene	< 5.00		µg/l	5.00						
Indeno (1,2,3-cd) pyrene	< 5.00		µg/l	5.00						
Dibenzo (a,h) anthracene	< 5.00		µg/l	5.00						
Benzo (g,h,i) perylene	< 5.00		µg/l	5.00						
n-Nonane (C9)	< 5.00		µg/l	5.00						
n-Decane	< 5.00		µg/l	5.00						
n-Dodecane	< 5.00		µg/l	5.00						
n-Tetradecane	< 5.00		µg/l	5.00						
n-Hexadecane	< 5.00		µg/l	5.00						
n-Octadecane	< 5.00		µg/l	5.00						
n-Nonadecane	< 5.00		µg/l	5.00						
n-Eicosane	< 5.00		µg/l	5.00						
n-Docosane	< 5.00		µg/l	5.00						
n-Tetracosane	< 5.00		µg/l	5.00						
n-Hexacosane	< 5.00		µg/l	5.00						
n-Octacosane	< 5.00		µg/l	5.00						
n-Triacontane	< 5.00		µg/l	5.00						
n-Hexatriacontane	< 5.00		µg/l	5.00						
Naphthalene (aliphatic fraction)	0.00		µg/l							
2-Methylnaphthalene (aliphatic fraction)	0.00		µg/l							
Surrogate: 1-Chlorooctadecane	51.5		µg/l		50.0		103	40-140		
Surrogate: Ortho-Terphenyl	38.9		µg/l		50.0		78	40-140		
Surrogate: 2-Fluorobiphenyl	20.5		µg/l		40.0		51	40-140		
LCS (1408042-BS1)					Prepared: 14-Apr-14 Analyzed: 15-Apr-14					
C9-C18 Aliphatic Hydrocarbons	430		µg/l	100	600		72	40-140		
C19-C36 Aliphatic Hydrocarbons	788		µg/l	100	800		99	40-140		
Unadjusted C11-C22 Aromatic Hydrocarbons	1100		µg/l	100	1700		65	40-140		
Naphthalene	53.6		µg/l	5.00	100		54	40-140		
2-Methylnaphthalene	59.4		µg/l	5.00	100		59	40-140		
Acenaphthylene	71.5		µg/l	5.00	100		71	40-140		
Acenaphthene	68.4		µg/l	5.00	100		68	40-140		

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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 1408042 - SW846 3510C										
LCS (1408042-BS1)					Prepared: 14-Apr-14 Analyzed: 15-Apr-14					
Fluorene	76.9		µg/l	5.00	100		77	40-140		
Phenanthrene	85.8		µg/l	5.00	100		86	40-140		
Anthracene	79.7		µg/l	5.00	100		80	40-140		
Fluoranthene	91.7		µg/l	5.00	100		92	40-140		
Pyrene	89.0		µg/l	5.00	100		89	40-140		
Benzo (a) anthracene	95.6		µg/l	5.00	100		96	40-140		
Chrysene	90.2		µg/l	5.00	100		90	40-140		
Benzo (b) fluoranthene	99.8		µg/l	5.00	100		100	40-140		
Benzo (k) fluoranthene	101		µg/l	5.00	100		101	40-140		
Benzo (a) pyrene	82.8		µg/l	5.00	100		83	40-140		
Indeno (1,2,3-cd) pyrene	88.6		µg/l	5.00	100		89	40-140		
Dibenzo (a,h) anthracene	88.4		µg/l	5.00	100		88	40-140		
Benzo (g,h,i) perylene	92.6		µg/l	5.00	100		93	40-140		
n-Nonane (C9)	41.9		µg/l	5.00	100		42	30-140		
n-Decane	54.3		µg/l	5.00	100		54	40-140		
n-Dodecane	63.9		µg/l	5.00	100		64	40-140		
n-Tetradecane	75.1		µg/l	5.00	100		75	40-140		
n-Hexadecane	85.0		µg/l	5.00	100		85	40-140		
n-Octadecane	90.4		µg/l	5.00	100		90	40-140		
n-Nonadecane	92.0		µg/l	5.00	100		92	40-140		
n-Eicosane	93.5		µg/l	5.00	100		93	40-140		
n-Docosane	94.5		µg/l	5.00	100		95	40-140		
n-Tetracosane	96.0		µg/l	5.00	100		96	40-140		
n-Hexacosane	96.7		µg/l	5.00	100		97	40-140		
n-Octacosane	99.3		µg/l	5.00	100		99	40-140		
n-Triacontane	97.3		µg/l	5.00	100		97	40-140		
n-Hexatriacontane	97.2		µg/l	5.00	100		97	40-140		
Naphthalene (aliphatic fraction)	0.00		µg/l					0-200		
2-Methylnaphthalene (aliphatic fraction)	0.00		µg/l					0-200		
Surrogate: 1-Chlorooctadecane	43.8		µg/l		50.0		88	40-140		
Surrogate: Ortho-Terphenyl	42.6		µg/l		50.0		85	40-140		
Surrogate: 2-Fluorobiphenyl	27.8		µg/l		40.0		69	40-140		
LCS (1408042-BS3)					Prepared: 14-Apr-14 Analyzed: 15-Apr-14					
C9-C18 Aliphatic Hydrocarbons	523		µg/l	100	600		87	40-140		
C19-C36 Aliphatic Hydrocarbons	866		µg/l	100	800		108	40-140		
Unadjusted C11-C22 Aromatic Hydrocarbons	997		µg/l	100	1700		59	40-140		
Naphthalene	50.4		µg/l	5.00	100		50	40-140		
2-Methylnaphthalene	54.7		µg/l	5.00	100		55	40-140		
Acenaphthylene	65.1		µg/l	5.00	100		65	40-140		
Acenaphthene	63.1		µg/l	5.00	100		63	40-140		
Fluorene	71.2		µg/l	5.00	100		71	40-140		
Phenanthrene	78.8		µg/l	5.00	100		79	40-140		
Anthracene	72.5		µg/l	5.00	100		72	40-140		
Fluoranthene	83.2		µg/l	5.00	100		83	40-140		
Pyrene	80.8		µg/l	5.00	100		81	40-140		
Benzo (a) anthracene	87.2		µg/l	5.00	100		87	40-140		
Chrysene	84.6		µg/l	5.00	100		85	40-140		
Benzo (b) fluoranthene	79.9		µg/l	5.00	100		80	40-140		
Benzo (k) fluoranthene	95.6		µg/l	5.00	100		96	40-140		
Benzo (a) pyrene	75.1		µg/l	5.00	100		75	40-140		
Indeno (1,2,3-cd) pyrene	79.0		µg/l	5.00	100		79	40-140		

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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 1408042 - SW846 3510C										
LCS (1408042-BS3)					Prepared: 14-Apr-14 Analyzed: 15-Apr-14					
Dibenzo (a,h) anthracene	79.0		µg/l	5.00	100		79	40-140		
Benzo (g,h,i) perylene	81.4		µg/l	5.00	100		81	40-140		
n-Nonane (C9)	58.7		µg/l	5.00	100		59	30-140		
n-Decane	69.1		µg/l	5.00	100		69	40-140		
n-Dodecane	77.1		µg/l	5.00	100		77	40-140		
n-Tetradecane	87.6		µg/l	5.00	100		88	40-140		
n-Hexadecane	96.8		µg/l	5.00	100		97	40-140		
n-Octadecane	103		µg/l	5.00	100		103	40-140		
n-Nonadecane	105		µg/l	5.00	100		105	40-140		
n-Eicosane	107		µg/l	5.00	100		107	40-140		
n-Docosane	107		µg/l	5.00	100		107	40-140		
n-Tetracosane	107		µg/l	5.00	100		107	40-140		
n-Hexacosane	106		µg/l	5.00	100		106	40-140		
n-Octacosane	109		µg/l	5.00	100		109	40-140		
n-Triacontane	105		µg/l	5.00	100		105	40-140		
n-Hexatriacontane	105		µg/l	5.00	100		105	40-140		
Naphthalene (aliphatic fraction)	0.00		µg/l					0-200		
2-Methylnaphthalene (aliphatic fraction)	0.00		µg/l					0-200		
Surrogate: 1-Chlorooctadecane	45.9		µg/l		50.0		92	40-140		
Surrogate: Ortho-Terphenyl	40.0		µg/l		50.0		80	40-140		
Surrogate: 2-Fluorobiphenyl	22.9		µg/l		40.0		57	40-140		
LCS Dup (1408042-BSD1)					Prepared: 14-Apr-14 Analyzed: 15-Apr-14					
C9-C18 Aliphatic Hydrocarbons	432		µg/l	100	600		72	40-140	0.5	25
C19-C36 Aliphatic Hydrocarbons	687		µg/l	100	800		86	40-140	14	25
Unadjusted C11-C22 Aromatic Hydrocarbons	856		µg/l	100	1700		50	40-140	25	25
Naphthalene	45.5		µg/l	5.00	100		45	40-140	16	25
2-Methylnaphthalene	49.6		µg/l	5.00	100		50	40-140	18	25
Acenaphthylene	59.7		µg/l	5.00	100		60	40-140	18	25
Acenaphthene	58.2		µg/l	5.00	100		58	40-140	16	25
Fluorene	64.0		µg/l	5.00	100		64	40-140	18	25
Phenanthrene	70.0		µg/l	5.00	100		70	40-140	20	25
Anthracene	65.8		µg/l	5.00	100		66	40-140	19	25
Fluoranthene	73.6		µg/l	5.00	100		74	40-140	22	25
Pyrene	72.1		µg/l	5.00	100		72	40-140	21	25
Benzo (a) anthracene	75.1		µg/l	5.00	100		75	40-140	24	25
Chrysene	73.2		µg/l	5.00	100		73	40-140	21	25
Benzo (b) fluoranthene	73.8	QR2	µg/l	5.00	100		74	40-140	30	25
Benzo (k) fluoranthene	78.8		µg/l	5.00	100		79	40-140	24	25
Benzo (a) pyrene	64.2		µg/l	5.00	100		64	40-140	25	25
Indeno (1,2,3-cd) pyrene	66.9	QR2	µg/l	5.00	100		67	40-140	28	25
Dibenzo (a,h) anthracene	65.2	QR2	µg/l	5.00	100		65	40-140	30	25
Benzo (g,h,i) perylene	69.5	QR2	µg/l	5.00	100		70	40-140	28	25
n-Nonane (C9)	44.4		µg/l	5.00	100		44	30-140	6	25
n-Decane	56.4		µg/l	5.00	100		56	40-140	4	25
n-Dodecane	65.0		µg/l	5.00	100		65	40-140	2	25
n-Tetradecane	76.6		µg/l	5.00	100		77	40-140	2	25
n-Hexadecane	85.2		µg/l	5.00	100		85	40-140	0.2	25
n-Octadecane	89.0		µg/l	5.00	100		89	40-140	2	25
n-Nonadecane	89.9		µg/l	5.00	100		90	40-140	2	25
n-Eicosane	90.3		µg/l	5.00	100		90	40-140	3	25
n-Docosane	89.8		µg/l	5.00	100		90	40-140	5	25

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

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1408042 - SW846 3510C										
<u>LCS Dup (1408042-BSD1)</u>					<u>Prepared: 14-Apr-14 Analyzed: 15-Apr-14</u>					
n-Tetracosane	89.2		µg/l	5.00	100		89	40-140	7	25
n-Hexacosane	89.0		µg/l	5.00	100		89	40-140	8	25
n-Octacosane	91.0		µg/l	5.00	100		91	40-140	9	25
n-Triacontane	88.7		µg/l	5.00	100		89	40-140	9	25
n-Hexatriacontane	88.1		µg/l	5.00	100		88	40-140	10	25
Naphthalene (aliphatic fraction)	0.00		µg/l					0-200		200
2-Methylnaphthalene (aliphatic fraction)	0.00		µg/l					0-200		200
Surrogate: 1-Chlorooctadecane	38.7		µg/l		50.0		77	40-140		
Surrogate: Ortho-Terphenyl	33.5		µg/l		50.0		67	40-140		
Surrogate: 2-Fluorobiphenyl	23.9		µg/l		40.0		60	40-140		
Batch 1408154 - SW846 3510C										
<u>Blank (1408154-BLK1)</u>					<u>Prepared: 16-Apr-14 Analyzed: 17-Apr-14</u>					
Non-polar material (SGT-HEM)	< 1.0		mg/l	1.0						
<u>LCS (1408154-BS1)</u>					<u>Prepared: 16-Apr-14 Analyzed: 17-Apr-14</u>					
Non-polar material (SGT-HEM)	27.2		mg/l	1.0	32.4		84	83-101		

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 1408184 - SW846 3005A										
<u>Blank (1408184-BLK1)</u>										
Iron	0.0676	QB1	mg/l	0.0150						
<u>LCS (1408184-BS1)</u>										
Iron	1.06		mg/l	0.0150	1.25		85	85-115		
<u>LCS Dup (1408184-BSD1)</u>										
Iron	1.13		mg/l	0.0150	1.25		90	85-115	6	20
<u>Duplicate (1408184-DUP1)</u>										
Iron	1.32		mg/l	0.0150		1.38			5	20
<u>Matrix Spike (1408184-MS1)</u>										
Iron	2.43		mg/l	0.0150	1.25	1.38	84	75-125		
<u>Matrix Spike Dup (1408184-MSD1)</u>										
Iron	2.19	QM8	mg/l	0.0150	1.25	1.38	64	75-125	11	20
<u>Post Spike (1408184-PS1)</u>										
Iron	2.87		mg/l	0.0150	1.25	1.38	119	80-120		
Batch 1408480 - SW846 3005A										
<u>Blank (1408480-BLK1)</u>										
Lead	< 0.0075		mg/l	0.0075						
<u>LCS (1408480-BS1)</u>										
Lead	1.23		mg/l	0.0075	1.25		98	85-115		
<u>LCS Dup (1408480-BSD1)</u>										
Lead	1.25		mg/l	0.0075	1.25		100	85-115	2	20
<u>Duplicate (1408480-DUP1)</u>										
Lead	0.0040	J	mg/l	0.0075		0.0038			5	20
<u>Matrix Spike (1408480-MS1)</u>										
Lead	1.11		mg/l	0.0075	1.25	0.0038	89	75-125		
<u>Matrix Spike Dup (1408480-MSD1)</u>										
Lead	1.08		mg/l	0.0075	1.25	0.0038	86	75-125	3	20
<u>Post Spike (1408480-PS1)</u>										
Lead	1.25		mg/l	0.0075	1.25	0.0038	100	80-120		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1408033 - General Preparation										
<u>Blank (1408033-BLK1)</u>								Prepared: 14-Apr-14 Analyzed: 15-Apr-14		
Total Suspended Solids	< 5.0		mg/l	5.0						
<u>LCS (1408033-BS1)</u>								Prepared: 14-Apr-14 Analyzed: 15-Apr-14		
Total Suspended Solids	98.0		mg/l	10.0	100		98	90-110		

Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S404000				
<u>Calibration Check (S404000-CCV1)</u>				
C9-C18 Aliphatic Hydrocarbons	302221.9	263354.1	-0.1	25
C19-C36 Aliphatic Hydrocarbons	596935.6	310553.3	0.5	25
Unadjusted C11-C22 Aromatic Hydrocarbons	46.33358	18.29834	-7.6	25
Naphthalene	7.690352	6.876156	-10.6	25
2-Methylnaphthalene	5.366286	5.005971	-6.7	25
Acenaphthylene	7.081369	7.016147	-0.9	25
Acenaphthene	4.668751	5.132223	9.9	25
Fluorene	5.106566	4.871739	-4.6	25
Phenanthrene	6.775266	6.70188	-1.1	25
Anthracene	6.481357	7.025361	8.4	25
Fluoranthene	6.686721	6.788364	1.5	25
Pyrene	7.035682	7.061167	0.4	25
Benzo (a) anthracene	5.357012	5.910473	10.3	25
Chrysene	5.669337	5.62301	-0.8	25
Benzo (b) fluoranthene	4.894696	4.91537	0.4	25
Benzo (k) fluoranthene	5.269585	5.949994	12.9	25
Benzo (a) pyrene	4.30189	5.236558	4.4	25
Indeno (1,2,3-cd) pyrene	4.855668	5.976548	3.5	25
Dibenzo (a,h) anthracene	4.240684	4.990845	1.7	25
Benzo (g,h,i) perylene	4.619147	4.992844	8.1	25
n-Nonane (C9)	262228.9	243343.8	-7.2	30
n-Decane	262820.7	249967.6	-4.9	25
n-Dodecane	262601.7	251602.4	-4.2	25
n-Tetradecane	260454.5	248834	-4.5	25
n-Hexadecane	257375.7	245743.6	-4.5	25
n-Octadecane	252236.4	239073.4	-5.2	25
n-Nonadecane	246673.5	233058.2	-5.5	25
n-Eicosane	241555.5	225296.6	-6.7	25
n-Docosane	235619.4	213853.4	-9.2	25
n-Tetracosane	231283.6	203990.6	-11.8	25
n-Hexacosane	230400.3	198712.2	-13.8	25
n-Octacosane	224214	190410	-15.1	25
n-Triacontane	228545.5	196492.8	-14.0	25
n-Hexatriacontane	212745.2	170146.5	-20.0	25
<u>Calibration Check (S404000-CCV2)</u>				
C9-C18 Aliphatic Hydrocarbons	302221.9	280047.5	6.5	25
C19-C36 Aliphatic Hydrocarbons	596935.6	326983.5	7.8	25
Unadjusted C11-C22 Aromatic Hydrocarbons	46.33358	17.94134	-9.7	25
Naphthalene	7.690352	6.499576	-15.5	25
2-Methylnaphthalene	5.366286	4.823986	-10.1	25
Acenaphthylene	7.081369	6.995402	-1.2	25
Acenaphthene	4.668751	4.230803	-9.4	25
Fluorene	5.106566	4.923509	-3.6	25
Phenanthrene	6.775266	6.572349	-3.0	25
Anthracene	6.481357	6.8746	6.1	25
Fluoranthene	6.686721	6.995291	4.6	25
Pyrene	7.035682	7.213894	2.5	25
Benzo (a) anthracene	5.357012	5.967908	11.4	25
Chrysene	5.669337	5.891976	3.9	25
Benzo (b) fluoranthene	4.894696	5.210719	6.5	25
Benzo (k) fluoranthene	5.269585	6.096385	15.7	25

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

Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S404000				
<u>Calibration Check (S404000-CCV2)</u>				
Benzo (a) pyrene	4.30189	5.339057	6.4	25
Indeno (1,2,3-cd) pyrene	4.855668	6.004719	4.0	25
Dibenzo (a,h) anthracene	4.240684	5.07739	3.4	25
Benzo (g,h,i) perylene	4.619147	5.051544	9.4	25
n-Nonane (C9)	262228.9	261714.8	-0.2	30
n-Decane	262820.7	269941.6	2.7	25
n-Dodecane	262601.7	271622	3.4	25
n-Tetradecane	260454.5	268881.8	3.2	25
n-Hexadecane	257375.7	267018.8	3.7	25
n-Octadecane	252236.4	259495.8	2.9	25
n-Nonadecane	246673.5	252610	2.4	25
n-Eicosane	241555.5	246488	2.0	25
n-Docosane	235619.4	242218.6	2.8	25
n-Tetracosane	231283.6	236196.2	2.1	25
n-Hexacosane	230400.3	231933.6	0.7	25
n-Octacosane	224214	222029.6	-1.0	25
n-Triacontane	228545.5	226488.2	-0.9	25
n-Hexatriacontane	212745.2	191480.9	-10.0	25

Notes and Definitions

QB1	The method blank contains analyte at a concentration above the MRL; however, concentration is less than 10% of the sample result, which is negligible according to method criteria.
QM8	The spike recovery exceeded the QC control limits for the MS and/or MSD. The batch was accepted based upon acceptable PS and /or LCS recovery.
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.
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:
June O'Connor
Nicole Leja
Rebecca Merz



SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 4 of 1

Special Handling:

- ☐ Standard TAT - 7 to 10 business days
☒ Rush TAT - Date Needed: 5 days

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 60 days unless otherwise instructed.

Report To:

EC5
Morchester, MA

Invoice To:

CIT
Framingham, MA

Project No:

03-220304.02

Site Name:

CIT Acquisition / Former Rite Aid

Location:

210 Worcester St, North Grafton - State: MA

Sampler(s):

N Holmes

Telephone #:

508-756-0151

Project Mgr:

MAH Lyne

P.O. No.: Pending

Quote/RON:

F=Field Filtered 1=Na₂S₂O₃ 2=HCl 3=H₂SO₄ 4=HNO₃ 5=NaOH 6=Ascorbic Acid
7=CH₃OH 8=NaHSO₄ 9=Deionized Water 10=H₂PO₄ 11= 12=

DW=Drinking Water GW=Groundwater SW=Surface Water WW=Waste Water

O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas

X1= X2= X3=

G=Grab

C=Composite

Lab ID:

Sample ID:

Date:

Time:

Type

Matrix

SBS7479-c1 MW-3

4/10/14 14:58

G

GW

3

3

2

2

X

X

X

X

X

X

X

Check if chlorinated

MA DEP MCP CAM Report? ☒ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
Standard ☒ DOA* ☐ No QC
ASP A* ☐ ASP B* ☐ Full*
NU Reduced* ☐ NU Full* ☐ Tier IV*
Tier II* ☐ Tier IV*
Other: _____
State-specific reporting standards: _____

List Preservative Code below:

2

2

2

-

-

-

-

QA/QC Reporting Notes:
* additional charges may apply

Relinquished by:

Received by:

Date:

Time:

Temp °C

☐ EDD format:
☒ E-mail to: mhlyne@resconsult.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☒ Refrigerated ☐ DI VOA frozen ☐ Soil Jar Frozen

Observed

Correction Factor

Corrected

IR ID #

4-11-14

10:42

15:00

4-11-14

4-11-14

4-11-14

4-11-14

4-11-14

4-11-14

ATTACHMENT III

MassDEP - Bureau of Waste Site Cleanup

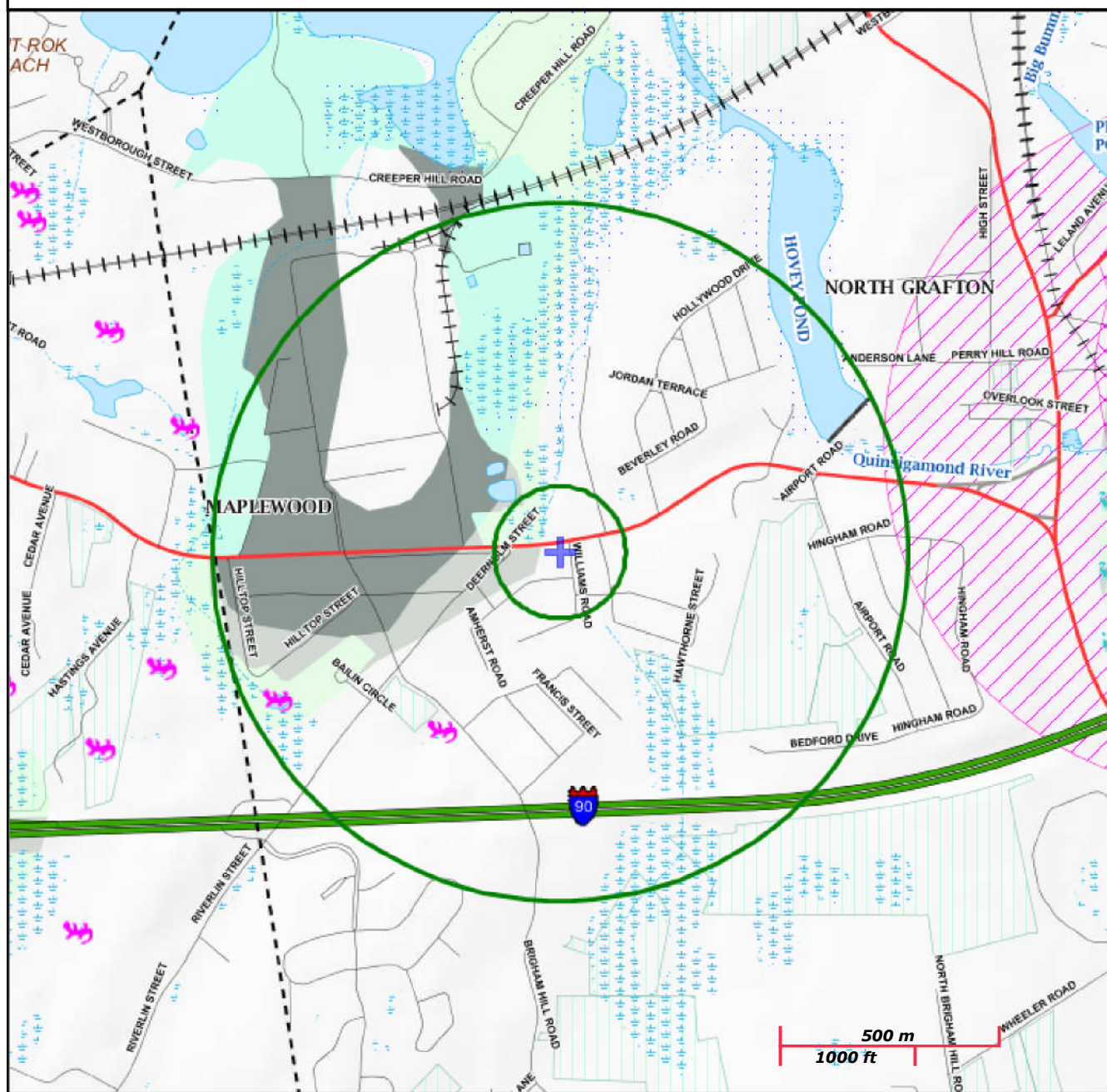
Site Information: MCP Numerical Ranking System Map: 500 feet & 0.5 Mile Radii

CUMBERLAND FARMS, INC.
217 WORCESTER STREET GRAFTON, MA
NAD83 UTM Meters:
4678730mN, 275402mE (Zone: 19)
April 16, 2014

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at:
<http://www.mass.gov/mgis/>



MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail

Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct

Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam

Aquifers: Medium Yield, High Yield, EPA Sole Source

Non Potential Drinking Water Source Area: Medium, High (Yield)

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

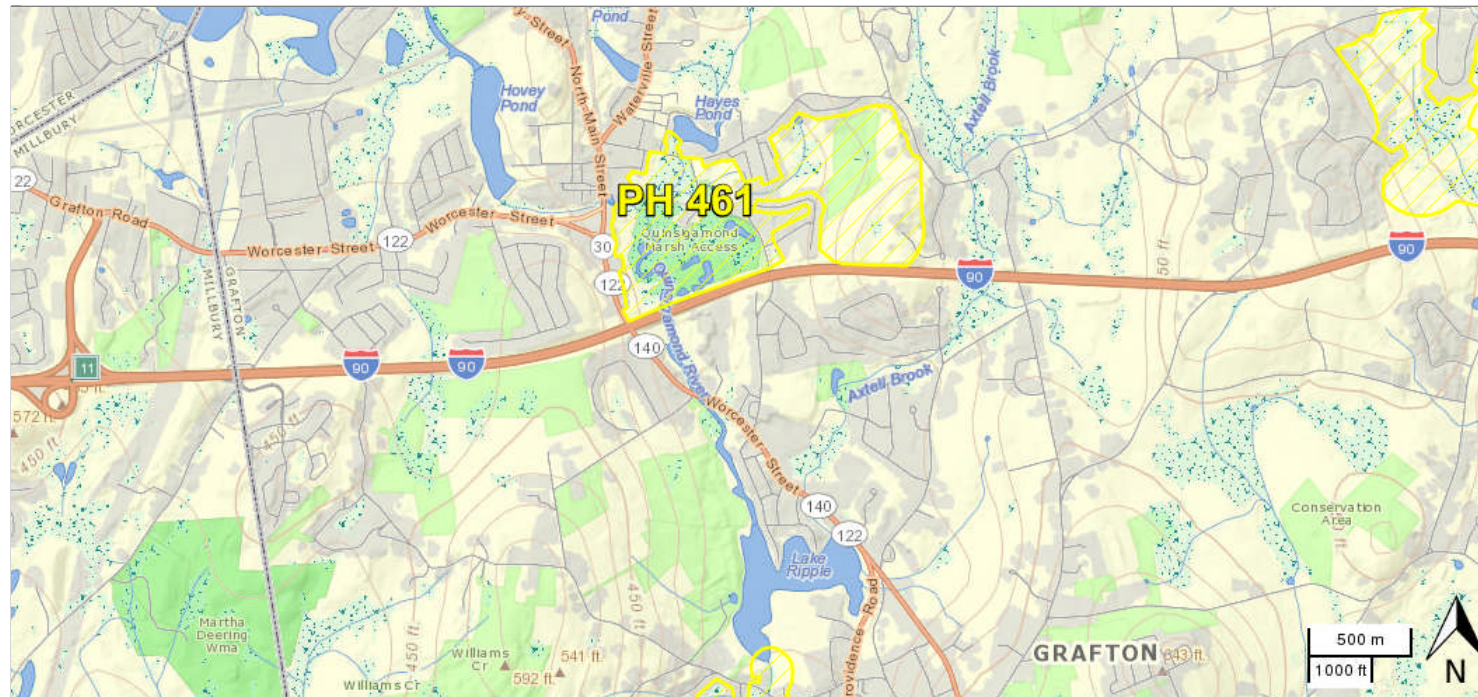
Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential

Solid Waste Landfill; PWS: Com. GW, SW, Emerg., Non-Com.

NHESP Map- 217 Worcester Street, Worcester, MA



- NHESP Natural Communities**
- NHESP Priority Habitats of Rare Species**
- NHESP Estimated Habitats of Rare Wildlife**
- Detailed Features**

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): Grafton

Street No: 217

Street Name: Worcester

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

No Results Found.

[New Search](#)[New Search — Same Town\(s\)](#)[Previous](#)[MHC Home](#)| [MACRIS Home](#)

ATTACHMENT V



Enter your transmittal number

X260799

Transmittal Number

Your unique Transmittal Number can be accessed online: <http://mass.gov/dep/service/online/trasmfrm.shtml>

Massachusetts Department of Environmental Protection

Transmittal Form for Permit Application and Payment

1. Please type or print. A separate Transmittal Form must be completed for each permit application.

2. Make your check payable to the Commonwealth of Massachusetts and mail it with a copy of this form to: DEP, P.O. Box 4062, Boston, MA 02211.

3. Three copies of this form will be needed.

Copy 1 - the original must accompany your permit application. **Copy 2** must accompany your fee payment. **Copy 3** should be retained for your records

4. Both fee-paying and exempt applicants must mail a copy of this transmittal form to:

MassDEP
P.O. Box 4062
Boston, MA
02211

*** Note:**
For BWSC Permits, enter the LSP.

A. Permit Information

BRP WM 12

1. Permit Code: 7 or 8 character code from permit instructions

EPA General Permit Construction Dewatering

3. Type of Project or Activity

Water Management

2. Name of Permit Category

B. Applicant Information – Firm or Individual

Cumberland Farms Inc

1. Name of Firm - Or, if party needing this approval is an individual enter name below:

Young

Matthew

2. Last Name of Individual

3. First Name of Individual

4. MI

100 Crossing Boulevard

5. Street Address

Framingham

MA

01702

508-270-4477

6. City/Town

7. State

8. Zip Code

9. Telephone #

10. Ext. #

Matthew Young

myoung@cumberlandgulf.com

11. Contact Person

12. e-mail address (optional)

C. Facility, Site or Individual Requiring Approval

Cumberland Farms Facility

1. Name of Facility, Site Or Individual

217 Worcester Street

2. Street Address

North Grafton

MA

01519

508-270-4477

3. City/Town

4. State

5. Zip Code

6. Telephone #

7. Ext. #

8. DEP Facility Number (if Known)

9. Federal I.D. Number (if Known)

10. BWSC Tracking # (if Known)

D. Application Prepared by (if different from Section B)*

1. Name of Firm Or Individual

2. Address

3. City/Town

4. State

5. Zip Code

6. Telephone #

7. Ext. #

8. Contact Person

9. LSP Number (BWSC Permits only)

E. Permit - Project Coordination

1. Is this project subject to MEPA review? ☐ yes ☒ no
If yes, enter the project's EOEA file number - assigned when an Environmental Notification Form is submitted to the MEPA unit:

EOEA File Number

F. Amount Due

Special Provisions:

1. ☐ Fee Exempt (city, town or municipal housing authority)(state agency if fee is \$100 or less).
There are no fee exemptions for BWSC permits, regardless of applicant status.
2. ☐ Hardship Request - payment extensions according to 310 CMR 4.04(3)(c).
3. ☐ Alternative Schedule Project (according to 310 CMR 4.05 and 4.10).
4. ☐ Homeowner (according to 310 CMR 4.02).

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

148230

Check Number

\$950.00

Dollar Amount

4/25/14

Date

148230

ENVIRONMENTAL COMPLIANCE SERVICES, INC.

588 SILVER STREET
 AGAWAM, MASSACHUSETTS 01001
 (413) 789-3530



WESTFIELD BANK

WESTFIELD, MA 01086

53-7160-2118

CHECK DATE

4/25/14

PAY

Nine Hundred Fifty and 00/100 Dollars

AMOUNT

TO

Commonwealth of Massachusetts

950.00



148230 211871604 1001051315

ENVIRONMENTAL COMPLIANCE SERVICES, INC.

148230

Check Date: 4/25/2014

Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount
RGP Discharge - <i>Al. G. P.</i>	4/25/2014	000000261529	950.00			950.00
Commonwealth of Massachusetts		TOTAL	950.00			950.00
Cash (1315) - Westfield Corp / 3		MASS009				

148230