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

CERTIFIED MAIL RETURN RECEIPT REQUESTED

MAY 29 2015

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

Re: Authorization to discharge under the Remediation General Permit (RGP) – MAG910000. Cumberland Farms Inc. Station # 2052 site located at 1340 Main Street, Walpole, MA 02081, Norfolk County; Authorization # MAG910685

Dear Mr. Young:

Based on the review of a Notice of Intent (NOI) submitted by Michael Bricher, from Environmental Compliance Services, Inc., on behalf of Cumberland Farms Inc., for the site referenced above, the U.S. Environmental Protection Agency (EPA) hereby authorizes you, as the named Owner and Operator to discharge in accordance with the provisions of the RGP at that site. Your authorization number is listed above.

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

Please note the enclosed checklist includes parameters that your consultant marked "Believed Present". 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 12.59 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 5,000 ug/L, are required to achieve permit compliance at your site.

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on August 30, 2015. 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

Thelma Murphy, Chief
Storm Water and Construction
Permits Section

Enclosure

cc: Robert Kubit, MassDEP
Robert E. O'Brien, Walpole DPW
Michael Bricher, Environmental Compliance Services

2010 Remediation General Permit
Summary of Monitoring Parameters[1]

NPDES Authorization Number:	**MAG910685**
Authorization Issued:	May, 2015
Facility/Site Name:	Cumberland Farms Station No. 2052
Facility/Site Address:	1340 Main Street, Walpole, MA 02061
	Email address of owner: myoung@cumberlandgulf.com
Legal Name of Operator:	Cumberland Farms
Operator contact name, title, and Address:	Matthew Young, Senior Project Manager
	Email: Same as the owner
Estimated date of The Project Completion:	8/30/2015
Category and Sub-Category:	Category I-Petroleum Related Site Remediation. Subcategory C. Petroleum Sites with Additional Contamination
RGP Termination Date:	September 9, 2015
Receiving Water:	Neponset River

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

	Parameter	**Effluent Limit/Method#/ML** (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
√	1. Total Suspended Solids (TSS)	30 milligrams/liter (mg/L) **, 50 mg/L for hydrostatic testing ** Me#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
	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
√	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/ML5ug/L
	36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	100 ug/L
√	h. Acenaphthene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	i. Acenaphthylene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	j. Anthracene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	k. Benzo(ghi) Perylene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	l. Fluoranthene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	m. Fluorene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	n. Naphthalene [5]	20 ug/l / Me#8270/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	o. Phenanthrene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	p. Pyrene	X/Me#8270D/ML5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	37. Total Polychlorinated Biphenyls (PCBs) [8, 9]	0.000064 ug/L/Me# 608/ ML 0.5 ug/L
√	38. Chloride	Monitor only/Me# 300.0/ ML 100 ug/L

	Metal parameter	**Total Recoverable Metal Limit @ H [10]= 50 mg/l CaCO3 for discharges in Massachusetts (ug/l) [11/12]**	**Minimum level=ML**	
		Freshwater		
	39. Antimony	5.6/ML 10	ML 10	
	40. Arsenic **	10/ML20	ML	20
	41. Cadmium **	0.2/ML10		10
	42. Chromium III (trivalent) **	48.8/ML15		15
	43. Chromium VI (hexavalent) **	11.4	ML	10
	44. Copper **	5.2	ML	15
√	45. Lead **	13	ML	20
	46. Mercury **	0.9	ML	0.2
	47. Nickel **	29	ML	20
	48. Selenium **	5	ML	20
	49. Silver	1.2	ML	10

	50. Zinc **	66.6		ML	15
√	51. Iron	5,000		ML	20

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

Footnotes:

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

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

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

[11] For a Dilution Factor (DF) from 1 to 5, metals limits are calculated using DF times the base limit for the metal. See Appendix IV. For example, iron limits are calculated using DF x 1,000ug/L (the iron base limit). Therefore DF is 1.5, the iron limit will be 1,500 ug/L; DF 2, then iron limit =1,000 x 2 =2,000 ug/L., etc. not to exceed the DF=5.

[12] Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B).

[13]pH sampling for compliance with permit limits may be performed using field methods as provided for in EPA test Method 150.1.

[14] Temperature sampling per Method 170.1

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

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

March 20, 2015
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.
1340 Main Street
Walpole, MA 02081

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, and a Site Plan depicting the dewatering discharge location is provided as Figure 2. 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

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 two 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 located on the northern boundary of the subject property (refer to Figure 2). This storm water catch basin (CB-1) discharges to a storm water drainage culvert running underneath Main Street. The storm water drainage culvert discharges into an unnamed stream located north of Main Street. This stream discharges into the Neponset River located approximately 2,500 feet northeast of the Site. Please

refer to Figure 1 for a depiction of the unnamed stream located immediately east of the subject property as well as Neponset 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 125 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-1(ECS-1) on April 22, 2014. These samples were submitted to Spectrum Analytical, Inc. of Agawam, Massachusetts under standard chain of custody protocol for analysis of volatile petroleum hydrocarbons (VPH) and 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, 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-1 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 EPA RGP Appendix III effluent limitations for Subcategory A-Petroleum Sites with additional contamination. Total suspended solids and total iron did exceed the applicable EPA RGP Appendix III effluent limitations.

Receiving Waters Information

The receiving water for the treated groundwater discharge is the Neponset River, located approximately 2,500 feet northeast 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 February 6, 2015). Data obtained from the online resource indicated that the 7Q10 flow rate for the Neponset River at USGS station #01104840 is 3.21 cubic feet per second (cfs). Based on data available, ECS calculated a 7Q10 flow rate for this area to be 192.6 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 Neponset 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 Walpole in the vicinity of the Site were obtained from the Massachusetts Cultural Resources Information System (MACRIS) online database at http://mhc-macris.net/towns.aspx (accessed February 4, 2015). 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, Post Response Action Outcome (RAO) environmental response actions are currently being conducted at this Site in accordance with the Massachusetts Contingency Plan (310 CMR 40.0000) under MassDEP 4-3014695. Accordingly, discharges subject to the MCP do not require the completion of state application form BRPWM 12 or pay state fees.

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

Sincerely,
ENVIRONMENTAL COMPLIANCE SERVICES, INC.

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

cc: Matthew Young, Cumberland Farms, Inc., 100 Crossing Blvd, Framingham, MA 01702
Robert Kubit, MassDEP, Division of Watershed Management, 627 Main Street, Worcester, MA 01608
Robert O'Brien, Director, Town of Walpole Department of Public Works, 135 School Street, Walpole, MA 02081
Town of Walpole Conservation Commission, 135 School Street, Walpole, MA 02081

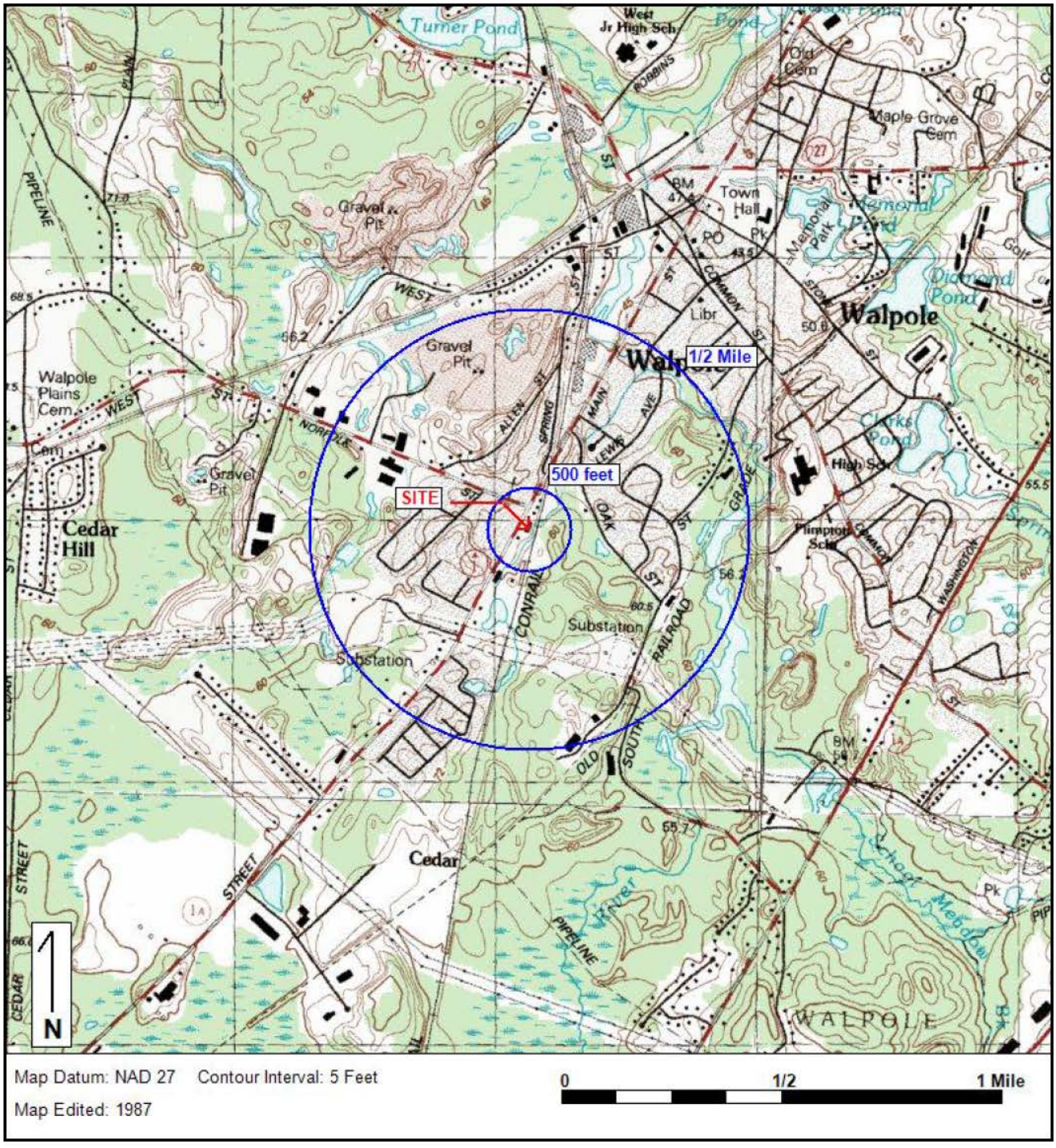
LIST OF ATTACHMENTS

FIGURES

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

MA -2052- Walpole-1340 Main Street
1340 Main Street
Walpole, MA 02081

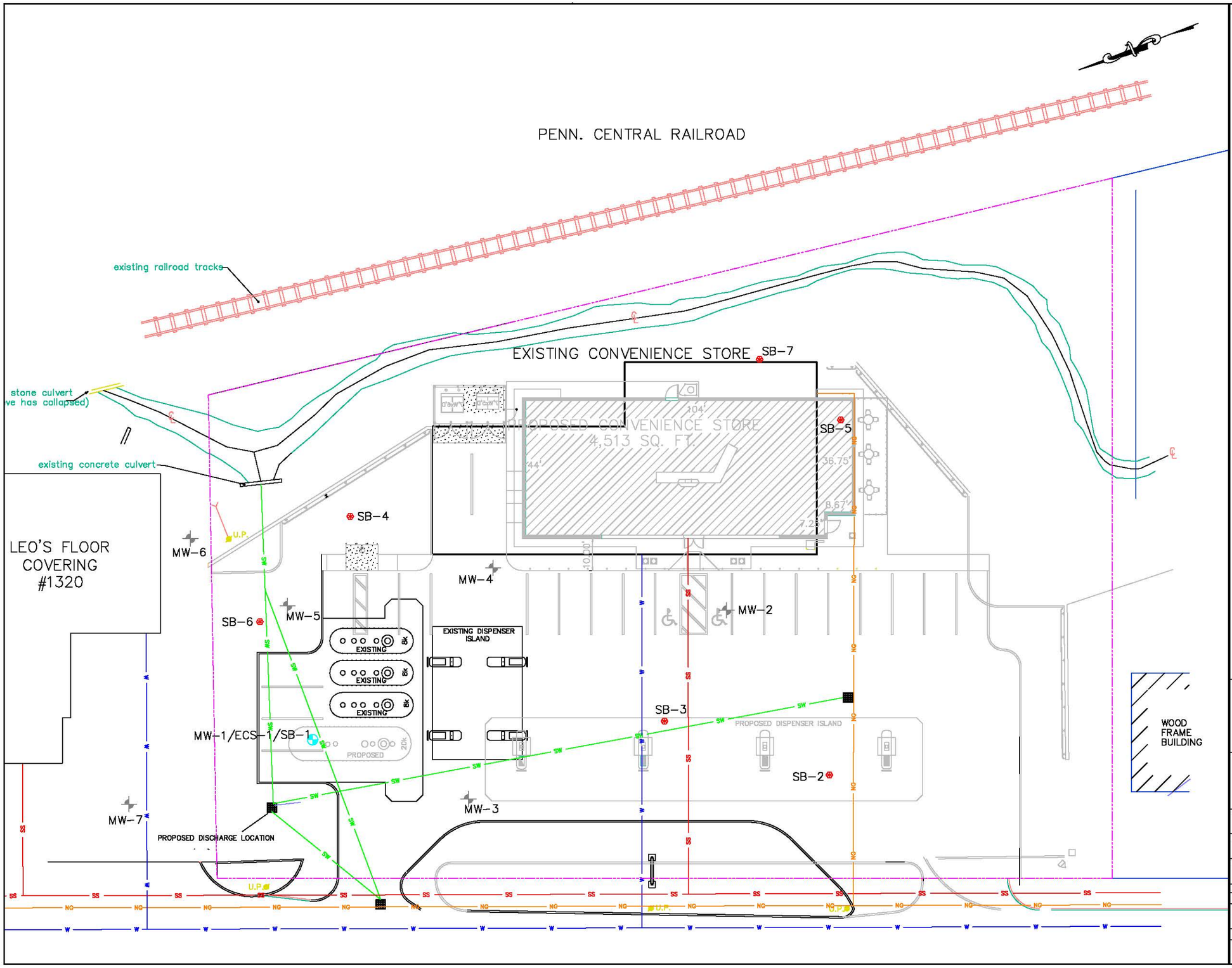
Figure 1: SITE LOCUS



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

Lat/Lon: 42 8' 4.4376" NORTH, 71 15' 38.0268" WEST - UTM Coordinates: 19 313175.6 EAST / 4667190.3 NORTH

Generated By: Carol Farrington



Legend

- Approximate Property Line
- SS — Sanitary Sewer Line
- SW — Storm Sewer Line
- W — Water Line
- NG — Natural Gas Line
- OE — Overhead Electric Line
- x — x — x — Chain Linked Fence
- Soil Boring
- Monitoring Well
- Abandoned Monitoring Well
- MW-3 — Well I.D.

General Notes:

Site plan prepared from plans given to ECS by Civil Design Group and ECS site reconnaissance.

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

ecs
997 Millbury St, Unit G, Worcester, MA 01607
Phone: 508-756-0151 Fax: 508-757-7063

PROJECT:
Cumberland Farms Inc.
1340 Main Street
Walpole, Massachusetts

TITLE:
Site Plan w/ Soil Borings

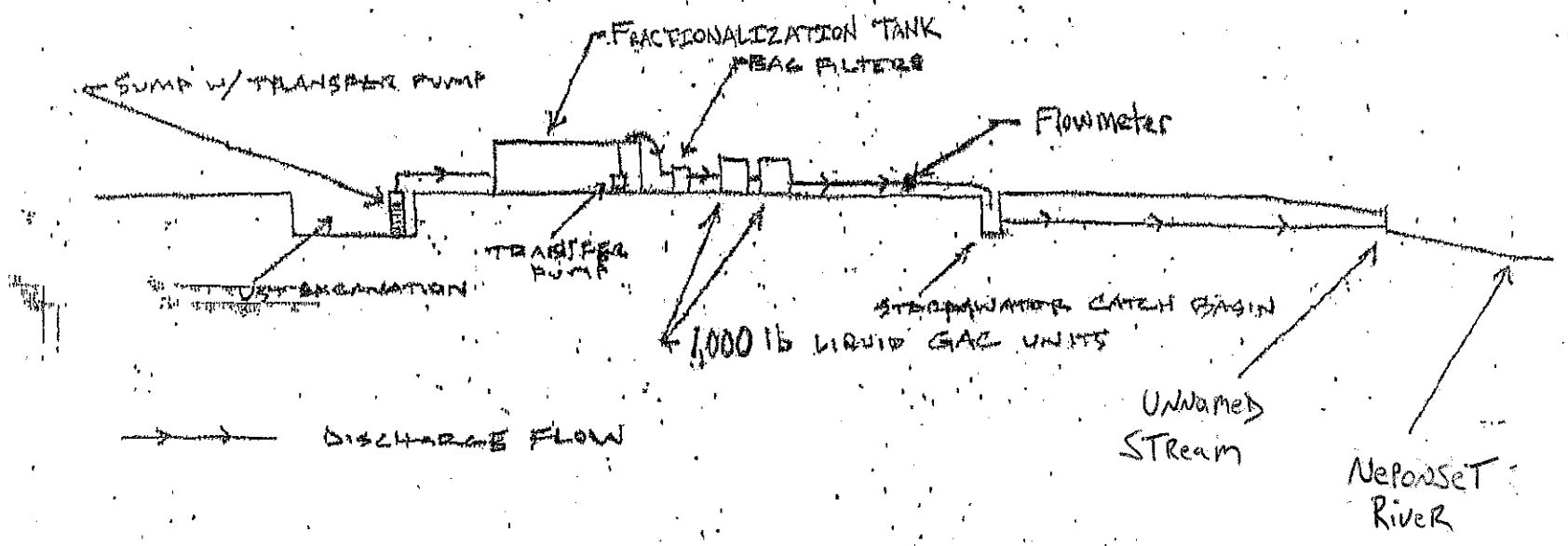
CLIENT:
Cumberland Farms Inc.

GRAPHIC SCALE: 30 15 0 15 30

COMPUTER CADFILE : Box/216496/Figures/CADD

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
MWS/AC	MWS	JW	MJL
SCALE:	**DATE:**	**JOB NO.:**	**FIGURE NO.:**
1"=30'	Feb 2015	03-216469	2

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**: Cumberland Farms Inc. # 2052		**Facility/site** mailing address:		
Location of **facility/site**: longitude: 711538.02 latitude: 420804.43	Facility SIC code(s): 7549	Street: 1340 Main Street		
b) Name of **facility/site owner:**		Town: Walpole		
Email address of facility/site owner: myoung@cumberlandgulf.com		State: MA	Zip: 02081	County: Norfolk
Telephone no. of facility/site **owner**: 508-270-4477				
Fax no. of facility/site **owner**: 781-459-0454		**Owner** is (check one): 1. Federal ○ 2. State/Tribal ○ 3. Private ◉ 4. Other ○ if so, describe:		
Address of **owner** (if different from site):				
Street: 100 Crossing Boulevard				
Town: Framingham	State: MA	Zip: 01702	County: Middlesex	
c) Legal name of **operator**:		**Operator** telephone no: 508-270-4477		
Cumberland Farms, Inc.		**Operator** fax no.: 781-459-0454	**Operator** email: myoung@cumberlandgulf.co	
Operator contact name and title: Matthew Young, Senior Project Manager				
Address of **operator** (if different from owner):	Street:			
Town:	State:	Zip:	County:	

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

e) Is site/facility subject to any State permitting, license, or other action which is causing the generation of discharge? Y ○ N ◉
If Y, please list:
1. site identification # assigned by the state of NH or MA:
2. permit or license # assigned:
3. state agency contact information: name, location, and telephone number:

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

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

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

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

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

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

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

The petroleum station is upgrading their underground fuel storage tanks and dewatering will be necessary to perform these upgrades. The discharge will be associated with the dewatering activities.

b) Provide the following information about each discharge:

1) Number of discharge points: 1

2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft^3/s)?
Max. flow 0.277 Is maximum flow a **design value**? Y ○ N ◉
Average flow (include units) 0.0117 cubic ft/s Is average flow a design value or estimate? Estimate

3) Latitude and longitude of each discharge within 100 feet:
pt.1: lat. 420804.43 long. 711538.02 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 5/1/2015 end 8/30/2015

d) Please attach a line drawing or flow schematic showing water flow through the facility including:
1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s). Flow Schematic is attached.

3. Contaminant information.

a) Based on the sub-category selected (see Appendix III), indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional sheets as needed.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids (TSS)		☐	☒	1	Grab	SM2540D	5,000	235,000		235,000	
2. Total Residual Chlorine (TRC)		☒	☐								
3. Total Petroleum Hydrocarbons (TPH)		☒	☐	1	Grab	EPH	111	<111		<111	
4. Cyanide (CN)	57125	☒	☐								
5. Benzene (B)	71432	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
6. Toluene (T)	108883	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
7. Ethylbenzene (E)	100414	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐	1	Grab	8260	1.0	<3.0		<3.0	
9. Total BTEX [2]	n/a	☒	☐	1	Grab	8260/	1.0	<6.0		<6.0	
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) [3]	106934	☒	☐	1	Grab	8260	0.5	<0.5		<0.5	
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	

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

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

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

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
13. tert-Amyl Methyl Ether (TAME)	9940508	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
14. Naphthalene	91203	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
15. Carbon Tetrachloride	56235	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
18a. Total dichlorobenzene		☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
19. 1,1 Dichloroethane (DCA)	75343	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
20. 1,2 Dichloroethane (DCA)	107062	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
21. 1,1 Dichloroethene (DCE)	75354	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
22. cis-1,2 Dichloroethene (DCE)	156592	☐	☒	1	Grab	8260	1.0	1.34		1.34	
23. Methylene Chloride	75092	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
24. Tetrachloroethene (PCE)	127184	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
27. Trichloroethene (TCE)	79016	☐	☒	1	Grab	8260	1.0	1.47		1.47	

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
28. Vinyl Chloride (Chloroethene)	75014	☒	☐	1	Grab	8260	1.0	<1.0		<1.0	
29. Acetone	67641	☒	☐	1	Grab	8260	10	<10		<10	
30. 1,4 Dioxane	123911	☒	☐	1	Grab	8260	20	<20		<20	
31. Total Phenols	108952	☒	☐	0							
32. Pentachlorophenol (PCP)	87865	☒	☐	0							
33. Total Phthalates (Phthalate esters) [4]		☒	☐	0							
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐	0							
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	Grab	MADEP EPH	<5.56	<5.56		<5.56	
a. Benzo(a) Anthracene	56553	☒	☐	1	Grab		<5.56	<5.56		<5.56	
b. Benzo(a) Pyrene	50328	☒	☐	1	Grab		<5.56	<5.56		<5.56	
c. Benzo(b)Fluoranthene	205992	☒	☐	1	Grab		<5.56	<5.56		<5.56	
d. Benzo(k)Fluoranthene	207089	☒	☐	1	Grab		<5.56	<5.56		<5.56	
e. Chrysene	21801	☒	☐	1	Grab		<5.56	<5.56		<5.56	
f. Dibenzo(a,h)anthracene	53703	☒	☐	1	Grab		<5.56	<5.56		<5.56	
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐	1	Grab		<5.56	<5.56		<5.56	
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	Grab		<5.56	<5.56		<5.56	

[4] The sum of individual phthalate compounds.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
h. Acenaphthene	83329	☒	☐	1	Grab		<5.56	<5.56		<5.56	
i. Acenaphthylene	208968	☒	☐	1	Grab		<5.56	<5.56		<5.56	
j. Anthracene	120127	☒	☐	1	Grab		<5.56	<5.56		<5.56	
k. Benzo(ghi) Perylene	191242	☒	☐	1	Grab		<5.56	<5.56		<5.56	
l. Fluoranthene	206440	☒	☐	1	Grab		<5.56	<5.56		<5.56	
m. Fluorene	86737	☒	☐	1	Grab		<5.56	<5.56		<5.56	
n. Naphthalene	91203	☒	☐	1	Grab		<5.56	<5.56		<5.56	
o. Phenanthrene	85018	☒	☐	1	Grab		<5.56	<5.56		<5.56	
p. Pyrene	129000	☒	☐	1	Grab		<5.56	<5.56		<5.56	
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐	0							
38. Chloride	16887006	☒	☐	0							
39. Antimony	7440360	☒	☐	0							
40. Arsenic	7440382	☒	☐	0							
41. Cadmium	7440439	☒	☐	0							
42. Chromium III (trivalent)	16065831	☒	☐	0							
43. Chromium VI (hexavalent)	18540299	☒	☐	0							
44. Copper	7440508	☐	☐	0							
45. Lead	7439921	☐	☒	1	grab	6010C	7.5	<7.5		<7.5	
46. Mercury	7439976	☐	☐	0							
47. Nickel	7440020	☐	☐	0							
48. Selenium	7782492	☐	☐	0							
49. Silver	7440224	☐	☐	0							
50. Zinc	7440666	☐	☐	0							
51. Iron	7439896	☐	☒	1	grab	6010C	30	13,800		13,800	
Other (describe):		☐	☐								

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

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

Step 1: Do any of the metals in the influent exceed the effluent limits in Appendix III (i.e., the limits set at zero dilution)? Y ◉ N ○	If yes, which metals? Iron
Step 2: For any metals which exceed the **Appendix III** limits, calculate the **dilution factor (DF)** using the formula in Part I.A.3.c (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metal: Iron DF: 20.19 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: Iron

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

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

The water from the UST excavation will be pumped into two frac tanks for settling, then through two bag filter units in parallell, two 1,000 lbs liquid granular activated carbon vessels in series, and a flow meter prior to discharge to the on-site storm drainage manhole. The storm drain located on site is discharged to an unnamed stream immediately east of the Site. This unnamed stream discharges into the Neponset River.

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 50 gpm Maximum flow rate of treatment system 125 gpm
Design flow rate of treatment system 125 gpm

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

None

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

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

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

The storm drain located on the northern portion of the Site is discharged to a unnamed stream which subsequently discharges to the Neponset River

c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water:
1. For multiple discharges, number the discharges sequentially.
2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water
The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.

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

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 3.21 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.

Based on a review of the MassDEP Resource Priority Map and the MassGIS Priority Habitat and Estimated Habitat Natural Heritage and Endangered Species Program Map, no areas of priority or estimated habitats or rare species were identified at the Site/work zone area relative to the proposed discharge (see attached maps). Therefore, it was determined that Criterion A in Section 6 (a) was applicable.

8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility/Site Name:	Cumberland Farms Inc.
Operator signature:	
Printed Name &Title:	Matthew D. Young Senior Project Manager
Date:	March 20, 2015

ATTACHMENT II

Report Date:
06-May-14 14:58

☑ 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: Jason Ward

Project: CFI #2052 - 1340 Main St - Walpole, MA
Project #: 03-216649.03

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB88180-01	MW-1 (ECS-1)	Ground Water	22-Apr-14 14:00	23-Apr-14 17:28

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 lorida. 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 L-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 VPH samples contained within this report upon laboratory receipt.

Matrices	Ground Water		
Containers	✓ Satisfactory		
Sample Preservative	**Aqueous** (acid preserved)	N/A ✓ pH≤2 pH>2	
	Soil or Sediment	✓ N/A Samples not received in Methanol	ml Methanol/g soil 1:1 +/-25% Other
		Samples received in Methanol: covering soil/sediment not covering soil/sediment	
		Samples received in air-tight container	
Temperature	Received on ice	Received at 4 ± 2 ºC ✓ Other: 0.6ºC	

Were all QA/QC procedures followed as required by the VPH method? *Yes*
Were any significant modifications made to the VPH method as specified in section 11.3? *No*
Were all performance/acceptance standards for required QA/QC procedures achieved? *Yes*

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 ºC	✓ Other: 0.6ºC	

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 #:** 03-216649.03
Project Location: CFI #2052 - 1340 Main St - Walpole, MA	**RTN:**
This form provides certifications for the following data set: SB88180-01	
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

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

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

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

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

Nicole Leja
Laboratory Director
Date: 5/6/2014

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

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

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

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

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

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

SW846 8260C

Calibration:

1404073

Analyte quantified by quadratic equation type calibration.

1,2-Dibromo-3-chloropropane
Bromoform
Carbon disulfide
Carbon tetrachloride
cis-1,3-Dichloropropene
Dibromochloromethane
Naphthalene
trans-1,3-Dichloropropene
trans-1,4-Dichloro-2-butene

This affected the following samples:

1409427-BLK1
1409427-BS1
1409427-BSD1
MW-1 (ECS-1)
S404375-ICV1
S404468-CCV1

Samples:

S404468-CCV1

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

2,2-Dichloropropane (29.8%)

SW846 8260C

Samples:

S404468-CCV1

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

Carbon tetrachloride (20.6%)
trans-1,3-Dichloropropene (20.6%)
trans-1,4-Dichloro-2-butene (25.4%)

This affected the following samples:

1409427-BLK1
1409427-BS1
1409427-BSD1
MW-1 (ECS-1)

Sample Acceptance Check Form

Client:	Environmental Compliance Services - Worcester, MA
Project:	CFI #2052 - 1340 Main St - Walpole, MA / 03-216649.03
Work Order:	SB88180
Sample(s) received on:	4/23/2014
Received by:	Mary Wilson

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

	Yes	No	N/A
1. Were custody seals present?	☐	☑	☐
2. Were custody seals intact?	☐	☐	☑
3. Were samples received at a temperature of ≤ 6°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	Client Project #	Matrix	Collection Date/Time	Received
MW-1 (ECS-1) SB88180-01	03-216649.03	Ground Water	22-Apr-14 14:00	23-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	30-Apr-14	01-May-14	GMA	1409427	
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	**1.34**		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	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-1 (ECS-1)	03-216649.03	Ground Water	22-Apr-14 14:00	23-Apr-14
SB88180-01				

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													
98-82-8	Isopropylbenzene	< 1.00		µg/l	1.00	0.62	1	SW846 8260C	30-Apr-14	01-May-14	GMA	1409427	
99-87-6	4-Isopropyltoluene	< 1.00		µg/l	1.00	0.61	1						
1634-04-4	Methyl tert-butyl ether	< 1.00		µg/l	1.00	0.65	1						
108-10-1	4-Methyl-2-pentanone (MIBK)	< 10.0		µg/l	10.0	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	**1.47**		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*	*99*			*70-130 %*								
2037-26-5	*Toluene-d8*	*101*			*70-130 %*								
17060-07-0	*1,2-Dichloroethane-d4*	*109*			*70-130 %*								
1868-53-7	*Dibromofluoromethane*	*102*			*70-130 %*								
MADEP VPH													
Prepared by method VPH - EPA 5030C Water													

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-1 (ECS-1)	03-216649.03	Ground Water	22-Apr-14 14:00	23-Apr-14
SB88180-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
MADEP VPH													
Prepared by method VPH - EPA 5030C Water													
	C5-C8 Aliphatic Hydrocarbons	< 75.0	D	µg/l	75.0	6.62	5	MADEP VPH 5/2004 Rev. 1.1	02-May-14	03-May-14	mp	1409713	
	C9-C12 Aliphatic Hydrocarbons	< 25.0	D	µg/l	25.0	7.11	5						
	C9-C10 Aromatic Hydrocarbons	< 25.0	D	µg/l	25.0	1.78	5						
	Unadjusted C5-C8 Aliphatic Hydrocarbons	< 75.0	D	µg/l	75.0	7.93	5						
	Unadjusted C9-C12 Aliphatic Hydrocarbons	< 25.0	D	µg/l	25.0	6.70	5						
71-43-2	Benzene	< 5.00	D	µg/l	5.00	1.16	5						
100-41-4	Ethylbenzene	< 5.00	D	µg/l	5.00	2.16	5						
1634-04-4	Methyl tert-butyl ether	< 5.00	D	µg/l	5.00	1.68	5						
91-20-3	Naphthalene	< 5.00	D	µg/l	5.00	1.80	5						
108-88-3	Toluene	< 5.00	D	µg/l	5.00	0.995	5						
179601-23-1	m,p-Xylene	< 10.0	D	µg/l	10.0	4.13	5						
95-47-6	o-Xylene	< 5.00	D	µg/l	5.00	2.22	5						
Surrogate recoveries:													
615-59-8	*2,5-Dibromotoluene (FID)*	*101*			*70-130 %*								
615-59-8	*2,5-Dibromotoluene (PID)*	*102*			*70-130 %*								
Extractable Petroleum Hydrocarbons													
MADEP EPH													
Prepared by method SW846 3510C													
	C9-C18 Aliphatic Hydrocarbons	< 111		µg/l	111	45.4	1	MADEP EPH 5/2004 R	28-Apr-14	03-May-14	MWP	1409195	
	C19-C36 Aliphatic Hydrocarbons	< 111		µg/l	111	81.1	1						
	C11-C22 Aromatic Hydrocarbons	< 111		µg/l	111	70.1	1						
	Unadjusted C11-C22 Aromatic Hydrocarbons	< 111		µg/l	111	70.1	1						
91-20-3	Naphthalene	< 5.56		µg/l	5.56	3.42	1						
91-57-6	2-Methylnaphthalene	< 5.56		µg/l	5.56	3.64	1						
208-96-8	Acenaphthylene	< 5.56		µg/l	5.56	3.99	1						
83-32-9	Acenaphthene	< 5.56		µg/l	5.56	3.99	1						
86-73-7	Fluorene	< 5.56		µg/l	5.56	3.79	1						
85-01-8	Phenanthrene	< 5.56		µg/l	5.56	3.12	1						
120-12-7	Anthracene	< 5.56		µg/l	5.56	3.60	1						
206-44-0	Fluoranthene	< 5.56		µg/l	5.56	4.02	1						
129-00-0	Pyrene	< 5.56		µg/l	5.56	3.91	1						
56-55-3	Benzo (a) anthracene	< 5.56		µg/l	5.56	4.46	1						
218-01-9	Chrysene	< 5.56		µg/l	5.56	4.67	1						
205-99-2	Benzo (b) fluoranthene	< 5.56		µg/l	5.56	5.21	1						
207-08-9	Benzo (k) fluoranthene	< 5.56		µg/l	5.56	5.28	1						
50-32-8	Benzo (a) pyrene	< 5.56		µg/l	5.56	4.47	1						
193-39-5	Indeno (1,2,3-cd) pyrene	< 5.56		µg/l	5.56	4.82	1						
53-70-3	Dibenzo (a,h) anthracene	< 5.56		µg/l	5.56	5.30	1						
191-24-2	Benzo (g,h,i) perylene	< 5.56		µg/l	5.56	4.54	1						

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-1 (ECS-1) SB88180-01	03-216649.03	Ground Water	22-Apr-14 14:00	23-Apr-14

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Extractable Petroleum Hydrocarbons													
MADEP EPH Prepared by method SW846 3510C													
Surrogate recoveries:													
3386-33-2	*1-Chlorooctadecane*	*65*			*40-140 %*			MADEP EPH 5/2004 R	28-Apr-14	03-May-14	MWP	1409195	
84-15-1	*Ortho-Terphenyl*	*68*			*40-140 %*								
321-60-8	*2-Fluorobiphenyl*	*57*			*40-140 %*								
Soluble Metals by EPA 200/6000 Series Methods													
	Filtration	**Field Filtered**		N/A			1	EPA 200.7/3005A/6010			SMR	1408961	
Soluble Metals by EPA 6000/7000 Series Methods													
7439-89-6	Iron	**13.8**		mg/l	0.0300	0.0243	1	SW846 6010C	05-May-14	05-May-14	tbc	1409830	
7439-92-1	Lead	< 0.0075		mg/l	0.0075	0.0032	1		30-Apr-14	02-May-14		1409464	
General Chemistry Parameters													
	Total Suspended Solids	**235**		mg/l	5.0	2.2	1	SM2540D	25-Apr-14	29-Apr-14	CMB	1409029	X

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1409427 - SW846 5030 Water MS										
Blank (1409427-BLK1)					Prepared & Analyzed: 30-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						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1409427 - SW846 5030 Water MS										
Blank (1409427-BLK1)					Prepared & Analyzed: 30-Apr-14					
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						
Surrogate: 4-Bromofluorobenzene	*49.3*		µg/l		*50.0*		*99*	*70-130*		
Surrogate: Toluene-d8	*51.0*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*52.5*		µg/l		*50.0*		*105*	*70-130*		
Surrogate: Dibromofluoromethane	*50.0*		µg/l		*50.0*		*100*	*70-130*		
LCS (1409427-BS1)					Prepared & Analyzed: 30-Apr-14					
1,1,2-Trichlorotrifluoroethane (Freon 113)	**21.2**		µg/l		20.0		106	70-130		
Acetone	**17.6**		µg/l		20.0		88	70-130		
Acrylonitrile	**19.4**		µg/l		20.0		97	70-130		
Benzene	**19.5**		µg/l		20.0		97	70-130		
Bromobenzene	**20.2**		µg/l		20.0		101	70-130		
Bromochloromethane	**21.7**		µg/l		20.0		109	70-130		
Bromodichloromethane	**22.8**		µg/l		20.0		114	70-130		
Bromoform	**22.6**		µg/l		20.0		113	70-130		
Bromomethane	**20.5**		µg/l		20.0		103	70-130		
2-Butanone (MEK)	**17.9**		µg/l		20.0		90	70-130		
n-Butylbenzene	**19.3**		µg/l		20.0		96	70-130		
sec-Butylbenzene	**19.7**		µg/l		20.0		98	70-130		
tert-Butylbenzene	**20.7**		µg/l		20.0		103	70-130		
Carbon disulfide	**20.5**		µg/l		20.0		102	70-130		
Carbon tetrachloride	**22.2**		µg/l		20.0		111	70-130		
Chlorobenzene	**18.6**		µg/l		20.0		93	70-130		
Chloroethane	**16.6**		µg/l		20.0		83	70-130		
Chloroform	**19.6**		µg/l		20.0		98	70-130		
Chloromethane	**18.5**		µg/l		20.0		92	70-130		
2-Chlorotoluene	**19.4**		µg/l		20.0		97	70-130		
4-Chlorotoluene	**19.1**		µg/l		20.0		96	70-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1409427 - SW846 5030 Water MS										
LCS (1409427-BS1)					Prepared & Analyzed: 30-Apr-14					
1,2-Dibromo-3-chloropropane	**20.4**		µg/l		20.0		102	70-130		
Dibromochloromethane	**22.5**		µg/l		20.0		113	70-130		
1,2-Dibromoethane (EDB)	**22.6**		µg/l		20.0		113	70-130		
Dibromomethane	**20.5**		µg/l		20.0		103	70-130		
1,2-Dichlorobenzene	**20.0**		µg/l		20.0		100	70-130		
1,3-Dichlorobenzene	**19.4**		µg/l		20.0		97	70-130		
1,4-Dichlorobenzene	**18.1**		µg/l		20.0		90	70-130		
Dichlorodifluoromethane (Freon12)	**21.0**		µg/l		20.0		105	70-130		
1,1-Dichloroethane	**20.2**		µg/l		20.0		101	70-130		
1,2-Dichloroethane	**20.4**		µg/l		20.0		102	70-130		
1,1-Dichloroethene	**20.8**		µg/l		20.0		104	70-130		
cis-1,2-Dichloroethene	**19.9**		µg/l		20.0		99	70-130		
trans-1,2-Dichloroethene	**20.1**		µg/l		20.0		100	70-130		
1,2-Dichloropropane	**19.6**		µg/l		20.0		98	70-130		
1,3-Dichloropropane	**20.4**		µg/l		20.0		102	70-130		
2,2-Dichloropropane	**24.4**		µg/l		20.0		122	70-130		
1,1-Dichloropropene	**19.8**		µg/l		20.0		99	70-130		
cis-1,3-Dichloropropene	**22.7**		µg/l		20.0		114	70-130		
trans-1,3-Dichloropropene	**23.9**		µg/l		20.0		120	70-130		
Ethylbenzene	**19.4**		µg/l		20.0		97	70-130		
Hexachlorobutadiene	**20.0**		µg/l		20.0		100	70-130		
2-Hexanone (MBK)	**21.3**		µg/l		20.0		106	70-130		
Isopropylbenzene	**19.6**		µg/l		20.0		98	70-130		
4-Isopropyltoluene	**19.8**		µg/l		20.0		99	70-130		
Methyl tert-butyl ether	**21.4**		µg/l		20.0		107	70-130		
4-Methyl-2-pentanone (MIBK)	**21.3**		µg/l		20.0		106	70-130		
Methylene chloride	**18.0**		µg/l		20.0		90	70-130		
Naphthalene	**19.2**		µg/l		20.0		96	70-130		
n-Propylbenzene	**20.0**		µg/l		20.0		100	70-130		
Styrene	**20.3**		µg/l		20.0		101	70-130		
1,1,1,2-Tetrachloroethane	**22.6**		µg/l		20.0		113	70-130		
1,1,2,2-Tetrachloroethane	**19.8**		µg/l		20.0		99	70-130		
Tetrachloroethene	**21.2**		µg/l		20.0		106	70-130		
Toluene	**19.8**		µg/l		20.0		99	70-130		
1,2,3-Trichlorobenzene	**21.0**		µg/l		20.0		105	70-130		
1,2,4-Trichlorobenzene	**19.8**		µg/l		20.0		99	70-130		
1,3,5-Trichlorobenzene	**20.2**		µg/l		20.0		101	70-130		
1,1,1-Trichloroethane	**22.7**		µg/l		20.0		114	70-130		
1,1,2-Trichloroethane	**20.3**		µg/l		20.0		101	70-130		
Trichloroethene	**20.8**		µg/l		20.0		104	70-130		
Trichlorofluoromethane (Freon 11)	**22.4**		µg/l		20.0		112	70-130		
1,2,3-Trichloropropane	**19.4**		µg/l		20.0		97	70-130		
1,2,4-Trimethylbenzene	**20.6**		µg/l		20.0		103	70-130		
1,3,5-Trimethylbenzene	**20.5**		µg/l		20.0		103	70-130		
Vinyl chloride	**18.2**		µg/l		20.0		91	70-130		
m,p-Xylene	**20.0**		µg/l		20.0		100	70-130		
o-Xylene	**19.6**		µg/l		20.0		98	70-130		
Tetrahydrofuran	**19.9**		µg/l		20.0		100	70-130		
Ethyl ether	**19.6**		µg/l		20.0		98	70-130		
Tert-amyl methyl ether	**21.6**		µg/l		20.0		108	70-130		
Ethyl tert-butyl ether	**22.4**		µg/l		20.0		112	70-130		
Di-isopropyl ether	**19.7**		µg/l		20.0		98	70-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1409427 - SW846 5030 Water MS										
LCS (1409427-BS1)						Prepared & Analyzed: 30-Apr-14				
Tert-Butanol / butyl alcohol	**218**		µg/l		200		109	70-130		
1,4-Dioxane	**191**		µg/l		200		96	70-130		
trans-1,4-Dichloro-2-butene	**23.4**		µg/l		20.0		117	70-130		
Ethanol	**325**		µg/l		400		81	70-130		
Surrogate: 4-Bromofluorobenzene	*49.9*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: Toluene-d8	*51.4*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*52.4*		µg/l		*50.0*		*105*	*70-130*		
Surrogate: Dibromofluoromethane	*52.9*		µg/l		*50.0*		*106*	*70-130*		
LCS Dup (1409427-BSD1)						Prepared & Analyzed: 30-Apr-14				
1,1,2-Trichlorotrifluoroethane (Freon 113)	**20.6**		µg/l		20.0		103	70-130	3	20
Acetone	**18.4**		µg/l		20.0		92	70-130	4	20
Acrylonitrile	**18.5**		µg/l		20.0		92	70-130	5	20
Benzene	**19.5**		µg/l		20.0		98	70-130	0.3	20
Bromobenzene	**20.2**		µg/l		20.0		101	70-130	0.05	20
Bromochloromethane	**20.5**		µg/l		20.0		102	70-130	6	20
Bromodichloromethane	**22.8**		µg/l		20.0		114	70-130	0.3	20
Bromoform	**21.7**		µg/l		20.0		109	70-130	4	20
Bromomethane	**20.6**		µg/l		20.0		103	70-130	0.6	20
2-Butanone (MEK)	**19.8**		µg/l		20.0		99	70-130	10	20
n-Butylbenzene	**19.9**		µg/l		20.0		100	70-130	3	20
sec-Butylbenzene	**20.2**		µg/l		20.0		101	70-130	3	20
tert-Butylbenzene	**20.9**		µg/l		20.0		104	70-130	0.9	20
Carbon disulfide	**21.9**		µg/l		20.0		109	70-130	7	20
Carbon tetrachloride	**23.9**		µg/l		20.0		120	70-130	7	20
Chlorobenzene	**18.8**		µg/l		20.0		94	70-130	1	20
Chloroethane	**16.8**		µg/l		20.0		84	70-130	1	20
Chloroform	**19.9**		µg/l		20.0		99	70-130	1	20
Chloromethane	**18.3**		µg/l		20.0		92	70-130	0.8	20
2-Chlorotoluene	**20.2**		µg/l		20.0		101	70-130	4	20
4-Chlorotoluene	**19.7**		µg/l		20.0		99	70-130	3	20
1,2-Dibromo-3-chloropropane	**20.8**		µg/l		20.0		104	70-130	2	20
Dibromochloromethane	**21.6**		µg/l		20.0		108	70-130	4	20
1,2-Dibromoethane (EDB)	**22.2**		µg/l		20.0		111	70-130	2	20
Dibromomethane	**19.3**		µg/l		20.0		96	70-130	6	20
1,2-Dichlorobenzene	**19.7**		µg/l		20.0		99	70-130	1	20
1,3-Dichlorobenzene	**20.0**		µg/l		20.0		100	70-130	3	20
1,4-Dichlorobenzene	**18.2**		µg/l		20.0		91	70-130	0.8	20
Dichlorodifluoromethane (Freon12)	**20.2**		µg/l		20.0		101	70-130	4	20
1,1-Dichloroethane	**19.9**		µg/l		20.0		100	70-130	1	20
1,2-Dichloroethane	**20.0**		µg/l		20.0		100	70-130	2	20
1,1-Dichloroethene	**20.6**		µg/l		20.0		103	70-130	1	20
cis-1,2-Dichloroethene	**20.0**		µg/l		20.0		100	70-130	0.4	20
trans-1,2-Dichloroethene	**19.7**		µg/l		20.0		99	70-130	2	20
1,2-Dichloropropane	**19.1**		µg/l		20.0		96	70-130	2	20
1,3-Dichloropropane	**19.3**		µg/l		20.0		96	70-130	5	20
2,2-Dichloropropane	**24.7**		µg/l		20.0		124	70-130	2	20
1,1-Dichloropropene	**20.6**		µg/l		20.0		103	70-130	4	20
cis-1,3-Dichloropropene	**22.7**		µg/l		20.0		113	70-130	0.2	20
trans-1,3-Dichloropropene	**24.2**		µg/l		20.0		121	70-130	1	20
Ethylbenzene	**19.8**		µg/l		20.0		99	70-130	2	20
Hexachlorobutadiene	**18.8**		µg/l		20.0		94	70-130	6	20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1409427 - SW846 5030 Water MS										
LCS Dup (1409427-BSD1)					Prepared & Analyzed: 30-Apr-14					
2-Hexanone (MBK)	**21.6**		µg/l		20.0		108	70-130	2	20
Isopropylbenzene	**19.6**		µg/l		20.0		98	70-130	0.4	20
4-Isopropyltoluene	**19.5**		µg/l		20.0		97	70-130	2	20
Methyl tert-butyl ether	**21.1**		µg/l		20.0		106	70-130	1	20
4-Methyl-2-pentanone (MIBK)	**20.5**		µg/l		20.0		103	70-130	4	20
Methylene chloride	**19.4**		µg/l		20.0		97	70-130	7	20
Naphthalene	**19.4**		µg/l		20.0		97	70-130	0.7	20
n-Propylbenzene	**20.1**		µg/l		20.0		100	70-130	0.6	20
Styrene	**20.2**		µg/l		20.0		101	70-130	0.4	20
1,1,1,2-Tetrachloroethane	**23.0**		µg/l		20.0		115	70-130	2	20
1,1,2,2-Tetrachloroethane	**19.2**		µg/l		20.0		96	70-130	3	20
Tetrachloroethene	**20.6**		µg/l		20.0		103	70-130	3	20
Toluene	**19.8**		µg/l		20.0		99	70-130	0.4	20
1,2,3-Trichlorobenzene	**21.0**		µg/l		20.0		105	70-130	0.1	20
1,2,4-Trichlorobenzene	**20.3**		µg/l		20.0		102	70-130	3	20
1,3,5-Trichlorobenzene	**20.2**		µg/l		20.0		101	70-130	0.1	20
1,1,1-Trichloroethane	**23.3**		µg/l		20.0		117	70-130	3	20
1,1,2-Trichloroethane	**19.9**		µg/l		20.0		100	70-130	2	20
Trichloroethene	**20.5**		µg/l		20.0		103	70-130	1	20
Trichlorofluoromethane (Freon 11)	**22.4**		µg/l		20.0		112	70-130	0	20
1,2,3-Trichloropropane	**18.7**		µg/l		20.0		94	70-130	3	20
1,2,4-Trimethylbenzene	**20.7**		µg/l		20.0		104	70-130	0.8	20
1,3,5-Trimethylbenzene	**21.0**		µg/l		20.0		105	70-130	2	20
Vinyl chloride	**21.5**		µg/l		20.0		108	70-130	17	20
m,p-Xylene	**19.9**		µg/l		20.0		99	70-130	0.5	20
o-Xylene	**19.5**		µg/l		20.0		97	70-130	0.5	20
Tetrahydrofuran	**19.4**		µg/l		20.0		97	70-130	3	20
Ethyl ether	**19.4**		µg/l		20.0		97	70-130	0.7	20
Tert-amyl methyl ether	**21.3**		µg/l		20.0		107	70-130	1	20
Ethyl tert-butyl ether	**21.7**		µg/l		20.0		108	70-130	3	20
Di-isopropyl ether	**19.4**		µg/l		20.0		97	70-130	2	20
Tert-Butanol / butyl alcohol	**211**		µg/l		200		105	70-130	3	20
1,4-Dioxane	**192**		µg/l		200		96	70-130	0.6	20
trans-1,4-Dichloro-2-butene	**23.0**		µg/l		20.0		115	70-130	1	20
Ethanol	**348**		µg/l		400		87	70-130	7	20
Surrogate: 4-Bromofluorobenzene	*51.2*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: Toluene-d8	*50.7*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*51.9*		µg/l		*50.0*		*104*	*70-130*		
Surrogate: Dibromofluoromethane	*53.4*		µg/l		*50.0*		*107*	*70-130*		
Batch 1409713 - VPH - EPA 5030C Water										
Blank (1409713-BLK1)					Prepared: 02-May-14 Analyzed: 03-May-14					
C9-C12 Aliphatic Hydrocarbons	< 5.00		µg/l	5.00						
C5-C8 Aliphatic Hydrocarbons	< 15.0		µg/l	15.0						
C9-C10 Aromatic Hydrocarbons	< 5.00		µg/l	5.00						
Unadjusted C5-C8 Aliphatic Hydrocarbons	< 15.0		µg/l	15.0						
Unadjusted C9-C12 Aliphatic Hydrocarbons	< 5.00		µg/l	5.00						
Benzene	< 1.00		µg/l	1.00						
Ethylbenzene	< 1.00		µg/l	1.00						
Methyl tert-butyl ether	< 1.00		µg/l	1.00						
Naphthalene	< 1.00		µg/l	1.00						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1409713 - VPH - EPA 5030C Water										
Blank (1409713-BLK1)					Prepared: 02-May-14 Analyzed: 03-May-14					
Toluene	< 1.00		µg/l	1.00						
m,p-Xylene	< 2.00		µg/l	2.00						
o-Xylene	< 1.00		µg/l	1.00						
2-Methylpentane	< 1.00		µg/l	1.00						
n-Nonane	< 2.00		µg/l	2.00						
n-Pentane	< 2.00		µg/l	2.00						
1,2,4-Trimethylbenzene	< 1.00		µg/l	1.00						
2,2,4-Trimethylpentane	< 1.00		µg/l	1.00						
n-Butylcyclohexane	< 1.00		µg/l	1.00						
n-Decane	< 1.00		µg/l	1.00						
Surrogate: 2,5-Dibromotoluene (FID)	*47.7*		µg/l		*50.0*		*95*	*70-130*		
Surrogate: 2,5-Dibromotoluene (PID)	*48.3*		µg/l		*50.0*		*97*	*70-130*		
LCS (1409713-BS1)					Prepared: 02-May-14 Analyzed: 03-May-14					
C9-C12 Aliphatic Hydrocarbons	**61.8**		µg/l		60.0		103	70-130		
C5-C8 Aliphatic Hydrocarbons	**57.8**		µg/l		60.0		96	70-130		
C9-C10 Aromatic Hydrocarbons	**20.9**		µg/l		20.0		104	70-130		
Unadjusted C5-C8 Aliphatic Hydrocarbons	**203**		µg/l		200		101	70-130		
Unadjusted C9-C12 Aliphatic Hydrocarbons	**82.7**		µg/l		80.0		103	70-130		
Benzene	**21.0**		µg/l		20.0		105	70-130		
Ethylbenzene	**21.2**		µg/l		20.0		106	70-130		
Methyl tert-butyl ether	**19.5**		µg/l		20.0		97	70-130		
Naphthalene	**21.1**		µg/l		20.0		105	70-130		
Toluene	**19.3**		µg/l		20.0		96	70-130		
m,p-Xylene	**42.5**		µg/l		40.0		106	70-130		
o-Xylene	**21.3**		µg/l		20.0		107	70-130		
2-Methylpentane	**18.9**		µg/l		20.0		95	70-130		
n-Nonane	**22.3**		µg/l		20.0		111	70-130		
n-Pentane	**17.2**		µg/l		20.0		86	70-130		
1,2,4-Trimethylbenzene	**21.0**		µg/l		20.0		105	70-130		
2,2,4-Trimethylpentane	**20.5**		µg/l		20.0		102	70-130		
n-Butylcyclohexane	**20.4**		µg/l		20.0		102	70-130		
n-Decane	**21.2**		µg/l		20.0		106	70-130		
Surrogate: 2,5-Dibromotoluene (FID)	*55.0*		µg/l		*50.0*		*110*	*70-130*		
Surrogate: 2,5-Dibromotoluene (PID)	*55.7*		µg/l		*50.0*		*111*	*70-130*		
LCS Dup (1409713-BSD1)					Prepared: 02-May-14 Analyzed: 03-May-14					
C9-C12 Aliphatic Hydrocarbons	**64.7**		µg/l		60.0		108	70-130	5	25
C5-C8 Aliphatic Hydrocarbons	**61.1**		µg/l		60.0		102	70-130	6	25
C9-C10 Aromatic Hydrocarbons	**21.4**		µg/l		20.0		107	70-130	3	25
Unadjusted C5-C8 Aliphatic Hydrocarbons	**210**		µg/l		200		105	70-130	4	25
Unadjusted C9-C12 Aliphatic Hydrocarbons	**86.2**		µg/l		80.0		108	70-130	4	25
Benzene	**21.7**		µg/l		20.0		108	70-130	3	25
Ethylbenzene	**21.9**		µg/l		20.0		110	70-130	3	25
Methyl tert-butyl ether	**19.8**		µg/l		20.0		99	70-130	2	25
Naphthalene	**21.3**		µg/l		20.0		106	70-130	1	25
Toluene	**19.9**		µg/l		20.0		100	70-130	3	25
m,p-Xylene	**43.8**		µg/l		40.0		110	70-130	3	25
o-Xylene	**21.9**		µg/l		20.0		110	70-130	3	25
2-Methylpentane	**20.3**		µg/l		20.0		102	70-130	7	25
n-Nonane	**23.0**		µg/l		20.0		115	70-130	3	25

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1409713 - VPH - EPA 5030C Water										
LCS Dup (1409713-BSD1)					Prepared: 02-May-14 Analyzed: 03-May-14					
n-Pentane	**18.0**		µg/l		20.0		90	70-130	5	25
1,2,4-Trimethylbenzene	**21.6**		µg/l		20.0		108	70-130	3	25
2,2,4-Trimethylpentane	**21.8**		µg/l		20.0		109	70-130	6	25
n-Butylcyclohexane	**21.9**		µg/l		20.0		110	70-130	7	25
n-Decane	**22.1**		µg/l		20.0		111	70-130	4	25
Surrogate: 2,5-Dibromotoluene (FID)	*54.3*		µg/l		*50.0*		*109*	*70-130*		
Surrogate: 2,5-Dibromotoluene (PID)	*55.1*		µg/l		*50.0*		*110*	*70-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1409195 - SW846 3510C										
Blank (1409195-BLK1)						Prepared & Analyzed: 28-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	*48.3*		µg/l		*50.0*		*97*	*40-140*		
Surrogate: Ortho-Terphenyl	*23.5*		µg/l		*50.0*		*47*	*40-140*		
Surrogate: 2-Fluorobiphenyl	*15.9*		µg/l		*40.0*		*40*	*40-140*		
LCS (1409195-BS1)						Prepared: 28-Apr-14 Analyzed: 29-Apr-14				
C9-C18 Aliphatic Hydrocarbons	**409**		µg/l	100	600		68	40-140		
C19-C36 Aliphatic Hydrocarbons	**496**		µg/l	100	800		62	40-140		
Unadjusted C11-C22 Aromatic Hydrocarbons	**908**		µg/l	100	1700		53	40-140		
Naphthalene	**44.4**		µg/l	5.00	100		44	40-140		
2-Methylnaphthalene	**50.1**		µg/l	5.00	100		50	40-140		
Acenaphthylene	**64.5**		µg/l	5.00	100		65	40-140		
Acenaphthene	**60.5**		µg/l	5.00	100		61	40-140		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1409195 - SW846 3510C										
LCS (1409195-BS1)						Prepared: 28-Apr-14 Analyzed: 29-Apr-14				
Fluorene	**69.4**		µg/l	5.00	100		69	40-140		
Phenanthrene	**75.5**		µg/l	5.00	100		76	40-140		
Anthracene	**69.3**		µg/l	5.00	100		69	40-140		
Fluoranthene	**82.7**		µg/l	5.00	100		83	40-140		
Pyrene	**79.6**		µg/l	5.00	100		80	40-140		
Benzo (a) anthracene	**93.3**		µg/l	5.00	100		93	40-140		
Chrysene	**82.8**		µg/l	5.00	100		83	40-140		
Benzo (b) fluoranthene	**87.1**		µg/l	5.00	100		87	40-140		
Benzo (k) fluoranthene	**101**		µg/l	5.00	100		101	40-140		
Benzo (a) pyrene	**78.4**		µg/l	5.00	100		78	40-140		
Indeno (1,2,3-cd) pyrene	**86.4**		µg/l	5.00	100		86	40-140		
Dibenzo (a,h) anthracene	**85.5**		µg/l	5.00	100		86	40-140		
Benzo (g,h,i) perylene	**84.6**		µg/l	5.00	100		85	40-140		
n-Nonane (C9)	**37.9**		µg/l	5.00	100		38	30-140		
n-Decane	**48.3**		µg/l	5.00	100		48	40-140		
n-Dodecane	**56.3**		µg/l	5.00	100		56	40-140		
n-Tetradecane	**67.0**		µg/l	5.00	100		67	40-140		
n-Hexadecane	**76.2**		µg/l	5.00	100		76	40-140		
n-Octadecane	**81.4**		µg/l	5.00	100		81	40-140		
n-Nonadecane	**82.0**		µg/l	5.00	100		82	40-140		
n-Eicosane	**82.9**		µg/l	5.00	100		83	40-140		
n-Docosane	**81.7**		µg/l	5.00	100		82	40-140		
n-Tetracosane	**80.6**		µg/l	5.00	100		81	40-140		
n-Hexacosane	**79.7**		µg/l	5.00	100		80	40-140		
n-Octacosane	**80.6**		µg/l	5.00	100		81	40-140		
n-Triacontane	**77.0**		µg/l	5.00	100		77	40-140		
n-Hexatriacontane	**77.3**		µg/l	5.00	100		77	40-140		
Naphthalene (aliphatic fraction)	**0.00**		µg/l					0-200		
2-Methylnaphthalene (aliphatic fraction)	**0.00**		µg/l					0-200		
Surrogate: 1-Chlorooctadecane	*43.2*		µg/l		*50.0*		*86*	*40-140*		
Surrogate: Ortho-Terphenyl	*33.6*		µg/l		*50.0*		*67*	*40-140*		
Surrogate: 2-Fluorobiphenyl	*23.2*		µg/l		*40.0*		*58*	*40-140*		
LCS (1409195-BS4)						Prepared & Analyzed: 28-Apr-14				
C9-C18 Aliphatic Hydrocarbons	**412**		µg/l	100	600		69	40-140		
C19-C36 Aliphatic Hydrocarbons	**471**		µg/l	100	800		59	40-140		
Unadjusted C11-C22 Aromatic Hydrocarbons	**967**		µg/l	100	1700		57	40-140		
Naphthalene	**53.2**		µg/l	5.00	100		53	40-140		
2-Methylnaphthalene	**56.8**		µg/l	5.00	100		57	40-140		
Acenaphthylene	**68.0**		µg/l	5.00	100		68	40-140		
Acenaphthene	**64.4**		µg/l	5.00	100		64	40-140		
Fluorene	**71.2**		µg/l	5.00	100		71	40-140		
Phenanthrene	**72.4**		µg/l	5.00	100		72	40-140		
Anthracene	**66.1**		µg/l	5.00	100		66	40-140		
Fluoranthene	**78.4**		µg/l	5.00	100		78	40-140		
Pyrene	**74.7**		µg/l	5.00	100		75	40-140		
Benzo (a) anthracene	**86.4**		µg/l	5.00	100		86	40-140		
Chrysene	**76.9**		µg/l	5.00	100		77	40-140		
Benzo (b) fluoranthene	**78.6**		µg/l	5.00	100		79	40-140		
Benzo (k) fluoranthene	**94.2**		µg/l	5.00	100		94	40-140		
Benzo (a) pyrene	**72.4**		µg/l	5.00	100		72	40-140		
Indeno (1,2,3-cd) pyrene	**80.7**		µg/l	5.00	100		81	40-140		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1409195 - SW846 3510C										
LCS (1409195-BS4)					Prepared & Analyzed: 28-Apr-14					
Dibenzo (a,h) anthracene	**79.6**		µg/l	5.00	100		80	40-140		
Benzo (g,h,i) perylene	**79.5**		µg/l	5.00	100		79	40-140		
n-Nonane (C9)	**53.6**		µg/l	5.00	100		54	30-140		
n-Decane	**61.8**		µg/l	5.00	100		62	40-140		
n-Dodecane	**66.0**		µg/l	5.00	100		66	40-140		
n-Tetradecane	**72.2**		µg/l	5.00	100		72	40-140		
n-Hexadecane	**77.3**		µg/l	5.00	100		77	40-140		
n-Octadecane	**78.9**		µg/l	5.00	100		79	40-140		
n-Nonadecane	**78.6**		µg/l	5.00	100		79	40-140		
n-Eicosane	**78.7**		µg/l	5.00	100		79	40-140		
n-Docosane	**76.4**		µg/l	5.00	100		76	40-140		
n-Tetracosane	**74.9**		µg/l	5.00	100		75	40-140		
n-Hexacosane	**73.9**		µg/l	5.00	100		74	40-140		
n-Octacosane	**74.9**		µg/l	5.00	100		75	40-140		
n-Triacontane	**72.0**		µg/l	5.00	100		72	40-140		
n-Hexatriacontane	**73.0**		µg/l	5.00	100		73	40-140		
Naphthalene (aliphatic fraction)	**0.00**		µg/l					0-200		
2-Methylnaphthalene (aliphatic fraction)	**0.00**		µg/l					0-200		
Surrogate: 1-Chlorooctadecane	*40.9*		µg/l		*50.0*		*82*	*40-140*		
Surrogate: Ortho-Terphenyl	*32.5*		µg/l		*50.0*		*65*	*40-140*		
Surrogate: 2-Fluorobiphenyl	*23.5*		µg/l		*40.0*		*59*	*40-140*		
LCS Dup (1409195-BSD1)					Prepared: 28-Apr-14 Analyzed: 29-Apr-14					
C9-C18 Aliphatic Hydrocarbons	**411**		µg/l	100	600		69	40-140	0.6	25
C19-C36 Aliphatic Hydrocarbons	**593**		µg/l	100	800		74	40-140	18	25
Unadjusted C11-C22 Aromatic Hydrocarbons	**866**		µg/l	100	1700		51	40-140	5	25
Naphthalene	**42.3**		µg/l	5.00	100		42	40-140	5	25
2-Methylnaphthalene	**47.5**		µg/l	5.00	100		48	40-140	5	25
Acenaphthylene	**62.2**		µg/l	5.00	100		62	40-140	4	25
Acenaphthene	**58.9**		µg/l	5.00	100		59	40-140	3	25
Fluorene	**68.1**		µg/l	5.00	100		68	40-140	2	25
Phenanthrene	**75.3**		µg/l	5.00	100		75	40-140	0.2	25
Anthracene	**68.6**		µg/l	5.00	100		69	40-140	1	25
Fluoranthene	**86.5**		µg/l	5.00	100		86	40-140	4	25
Pyrene	**83.6**		µg/l	5.00	100		84	40-140	5	25
Benzo (a) anthracene	**98.7**		µg/l	5.00	100		99	40-140	6	25
Chrysene	**88.5**		µg/l	5.00	100		88	40-140	7	25
Benzo (b) fluoranthene	**92.0**		µg/l	5.00	100		92	40-140	5	25
Benzo (k) fluoranthene	**108**		µg/l	5.00	100		108	40-140	7	25
Benzo (a) pyrene	**82.3**		µg/l	5.00	100		82	40-140	5	25
Indeno (1,2,3-cd) pyrene	**91.9**		µg/l	5.00	100		92	40-140	6	25
Dibenzo (a,h) anthracene	**92.5**		µg/l	5.00	100		92	40-140	8	25
Benzo (g,h,i) perylene	**92.2**		µg/l	5.00	100		92	40-140	9	25
n-Nonane (C9)	**41.1**		µg/l	5.00	100		41	30-140	8	25
n-Decane	**52.5**		µg/l	5.00	100		52	40-140	8	25
n-Dodecane	**62.0**		µg/l	5.00	100		62	40-140	10	25
n-Tetradecane	**74.5**		µg/l	5.00	100		74	40-140	11	25
n-Hexadecane	**85.2**		µg/l	5.00	100		85	40-140	11	25
n-Octadecane	**91.7**		µg/l	5.00	100		92	40-140	12	25
n-Nonadecane	**92.2**		µg/l	5.00	100		92	40-140	12	25
n-Eicosane	**93.0**		µg/l	5.00	100		93	40-140	11	25
n-Docosane	**91.5**		µg/l	5.00	100		92	40-140	11	25

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1409195 - SW846 3510C										
LCS Dup (1409195-BSD1)					Prepared: 28-Apr-14 Analyzed: 29-Apr-14					
n-Tetracosane	**90.8**		µg/l	5.00	100		91	40-140	12	25
n-Hexacosane	**90.4**		µg/l	5.00	100		90	40-140	13	25
n-Octacosane	**92.1**		µg/l	5.00	100		92	40-140	13	25
n-Triacontane	**88.5**		µg/l	5.00	100		88	40-140	14	25
n-Hexatriacontane	**90.0**		µg/l	5.00	100		90	40-140	15	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	*48.4*		µg/l		*50.0*		*97*	*40-140*		
Surrogate: Ortho-Terphenyl	*33.8*		µg/l		*50.0*		*68*	*40-140*		
Surrogate: 2-Fluorobiphenyl	*12.8*		µg/l		*20.0*		*64*	*40-140*		

Soluble 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 1409464 - SW846 3005A										
Blank (1409464-BLK1)						Prepared: 30-Apr-14 Analyzed: 02-May-14				
Lead	< 0.0075		mg/l	0.0075						
LCS (1409464-BS1)						Prepared: 30-Apr-14 Analyzed: 02-May-14				
Lead	**1.27**		mg/l	0.0075	1.25		101	85-115		
LCS Dup (1409464-BSD1)						Prepared: 30-Apr-14 Analyzed: 02-May-14				
Lead	**1.22**		mg/l	0.0075	1.25		98	85-115	3	20
Batch 1409830 - SW846 3005A										
Blank (1409830-BLK1)						Prepared & Analyzed: 05-May-14				
Iron	< 0.0300		mg/l	0.0300						
LCS (1409830-BS1)						Prepared & Analyzed: 05-May-14				
Iron	**2.05**		mg/l	0.0300	2.00		103	85-115		
LCS Dup (1409830-BSD1)						Prepared & Analyzed: 05-May-14				
Iron	**2.01**		mg/l	0.0300	2.00		101	85-115	2	20

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1409029 - General Preparation										
Blank (1409029-BLK1)						Prepared: 25-Apr-14 Analyzed: 29-Apr-14				
Total Suspended Solids	< 5.0		mg/l	5.0						
LCS (1409029-BS1)						Prepared: 25-Apr-14 Analyzed: 29-Apr-14				
Total Suspended Solids	**102**		mg/l	10.0	100		102	90-110		

Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S404711				
Calibration Check (S404711-CCV1)				
C9-C18 Aliphatic Hydrocarbons	302221.9	293025.3	11.6	25
C19-C36 Aliphatic Hydrocarbons	596935.6	344465.3	15.5	25
Unadjusted C11-C22 Aromatic Hydrocarbons	24.68878	16.37418	-4.7	25
Naphthalene	7.654551	7.538806	-1.5	25
2-Methylnaphthalene	5.566119	5.560642	-0.1	25
Acenaphthylene	7.685898	7.404869	-3.7	25
Acenaphthene	4.306471	4.081304	-5.2	25
Fluorene	5.580853	5.483391	-1.7	25
Phenanthrene	7.20908	7.278166	1.0	25
Anthracene	7.45808	6.911414	-7.3	25
Fluoranthene	6.734257	6.891596	2.3	25
Pyrene	7.132997	7.30769	2.4	25
Benzo (a) anthracene	5.970965	6.382078	6.9	25
Chrysene	5.559885	5.731357	3.1	25
Benzo (b) fluoranthene	5.242217	5.869843	12.0	25
Benzo (k) fluoranthene	5.283657	5.662796	7.2	25
Benzo (a) pyrene	5.154832	5.608233	8.8	25
Indeno (1,2,3-cd) pyrene	5.513259	6.368886	15.5	25
Dibenzo (a,h) anthracene	4.664449	5.283707	13.3	25
Benzo (g,h,i) perylene	4.72355	5.240883	11.0	25
n-Nonane (C9)	262228.9	279486.4	6.6	30
n-Decane	262820.7	283227.8	7.8	25
n-Dodecane	262601.7	285057.2	8.6	25
n-Tetradecane	260454.5	282557.8	8.5	25
n-Hexadecane	257375.7	279704.6	8.7	25
n-Octadecane	252236.4	272752.6	8.1	25
n-Nonadecane	246673.5	267528.4	8.5	25
n-Eicosane	241555.5	260403	7.8	25
n-Docosane	235619.4	252413.2	7.1	25
n-Tetracosane	231283.6	249022	7.7	25
n-Hexacosane	230400.3	240215.4	4.3	25
n-Octacosane	224214	231452.2	3.2	25
n-Triacontane	228545.5	238570	4.4	25
n-Hexatriacontane	212745.2	206897.8	-2.7	25
Calibration Check (S404711-CCV2)				
C9-C18 Aliphatic Hydrocarbons	302221.9	293447.4	11.8	25
C19-C36 Aliphatic Hydrocarbons	596935.6	343099.8	14.9	25
Unadjusted C11-C22 Aromatic Hydrocarbons	24.68878	16.91566	-1.2	25
Naphthalene	7.654551	7.4948	-2.1	25
2-Methylnaphthalene	5.566119	5.577809	0.2	25
Acenaphthylene	7.685898	7.613199	-0.9	25
Acenaphthene	4.306471	4.210253	-2.2	25
Fluorene	5.580853	5.539708	-0.7	25
Phenanthrene	7.20908	7.346912	1.9	25
Anthracene	7.45808	7.034296	-5.7	25
Fluoranthene	6.734257	7.145664	6.1	25
Pyrene	7.132997	7.601336	6.6	25
Benzo (a) anthracene	5.970965	6.724911	12.6	25
Chrysene	5.559885	6.070862	9.2	25
Benzo (b) fluoranthene	5.242217	5.819784	11.0	25
Benzo (k) fluoranthene	5.283657	6.166029	16.7	25

Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S404711				
Calibration Check (S404711-CCV2)				
Benzo (a) pyrene	5.154832	5.942655	15.3	25
Indeno (1,2,3-cd) pyrene	5.513259	6.588129	19.5	25
Dibenzo (a,h) anthracene	4.664449	5.573515	19.5	25
Benzo (g,h,i) perylene	4.72355	5.497802	16.4	25
n-Nonane (C9)	262228.9	281818.4	7.5	30
n-Decane	262820.7	286442.6	9.0	25
n-Dodecane	262601.7	288609.4	9.9	25
n-Tetradecane	260454.5	286406.4	10.0	25
n-Hexadecane	257375.7	283866.4	10.3	25
n-Octadecane	252236.4	276875.2	9.8	25
n-Nonadecane	246673.5	271188.2	9.9	25
n-Eicosane	241555.5	263644.4	9.1	25
n-Docosane	235619.4	255283.8	8.3	25
n-Tetracosane	231283.6	250055.2	8.1	25
n-Hexacosane	230400.3	245480.8	6.5	25
n-Octacosane	224214	237682.6	6.0	25
n-Triacontane	228545.5	242386.2	6.1	25
n-Hexatriacontane	212745.2	205512	-3.4	25

Volatile Organic Compounds - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S404613				
Calibration Check (S404613-CCV1)				
Benzene	154749.7	160863	4.0	25
Ethylbenzene	105846.6	111076	4.9	25
Methyl tert-butyl ether	73361.06	72652.2	-1.0	25
Naphthalene	83042.53	88905.15	7.1	25
Toluene	142779.7	136001.7	-4.7	25
m,p-Xylene	125074.1	129243	3.3	25
o-Xylene	107238.4	111127.8	3.6	25
2-Methylpentane	10249.76	10742.35	4.8	25
n-Nonane	5321.44	5825.9	9.5	30
n-Pentane	10303.97	10490.35	1.8	25
1,2,4-Trimethylbenzene	97284.2	100189.5	3.0	25
2,2,4-Trimethylpentane	10155.52	10555.4	3.9	25
n-Butylcyclohexane	6317.192	6493.45	2.8	25
n-Decane	4120.462	4123.75	0.08	25
Calibration Check (S404613-CCV2)				
Benzene	154749.7	164589.1	6.4	25
Ethylbenzene	105846.6	113333.9	7.1	25
Methyl tert-butyl ether	73361.06	72884.4	-0.6	25
Naphthalene	83042.53	87214.3	5.0	25
Toluene	142779.7	139582.1	-2.2	25
m,p-Xylene	125074.1	131869.3	5.4	25
o-Xylene	107238.4	113313.7	5.7	25
2-Methylpentane	10249.76	10620.7	3.6	25
n-Nonane	5321.44	4264.85	-19.9	30
n-Pentane	10303.97	10565.05	2.5	25
1,2,4-Trimethylbenzene	97284.2	101267.5	4.1	25
2,2,4-Trimethylpentane	10155.52	9891.3	-2.6	25
n-Butylcyclohexane	6317.192	5180.3	-18.0	25
n-Decane	4120.462	3260.15	-20.9	25

Notes and Definitions

D	Data reported from a dilution
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

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:
Kimberly Wisk
Nicole Leja

SB # 88180

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- [x] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____

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

Report To: ECS, Worcester, Ma
Telephone #: 508-756-0151
Project Mgr: Jay Ward

Invoice To: CFI, Framingham, Ma
P.O No.: 50238 Quote/RQN: 50238 (V)

Project No: 03-216649.03
Site Name: CFI #2052
Location: 1340 Main St, Walpole State: MA
Sampler(s): N. Holmes

F=Field Filtered 1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

DW=Dinking 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=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: List Preservative Code below: 4 4 2 2 2 -	Check if chlorinated
										Dissolved Lead / Dissolved Iron / VPH / EPH / VOC's 8260 / TSS	
SB88180-01	MW-1 (ECS-1)	4/22/14	14:00	G	GW	6	1		3	x x x x x x	☐
											☐
											☐
											☐
											☐
											☐
											☐
											☐
											☐
											☐

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? [x] Yes [ ] No
CT DPH RCP Report? [ ] Yes [ ] No
[x] Standard [ ] No QC
[ ] DQA*
[ ] ASP A* [ ] ASP B*
[ ] NJ Reduced* [ ] NJ Full*
[ ] Tier II* [ ] Tier IV*
[ ] Other: _____
State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:
		4-23-14	1035
	MW	4232014	1728

Temp °C: Observed / Correction Factor / Corrected / IR ID #

[ ] EDD format:
[x] E-mail to: JWard@ecsconsult.com

Condition upon receipt: Custody Seals: [ ] Present [ ] Intact [ ] Broken
[ ] Ambient [ ] Iced [x] Refrigerated [ ] DI VOA Frozen [ ] Soil Jar Frozen

0.6/0.6 IR01 4232014 MW

ATTACHMENT III

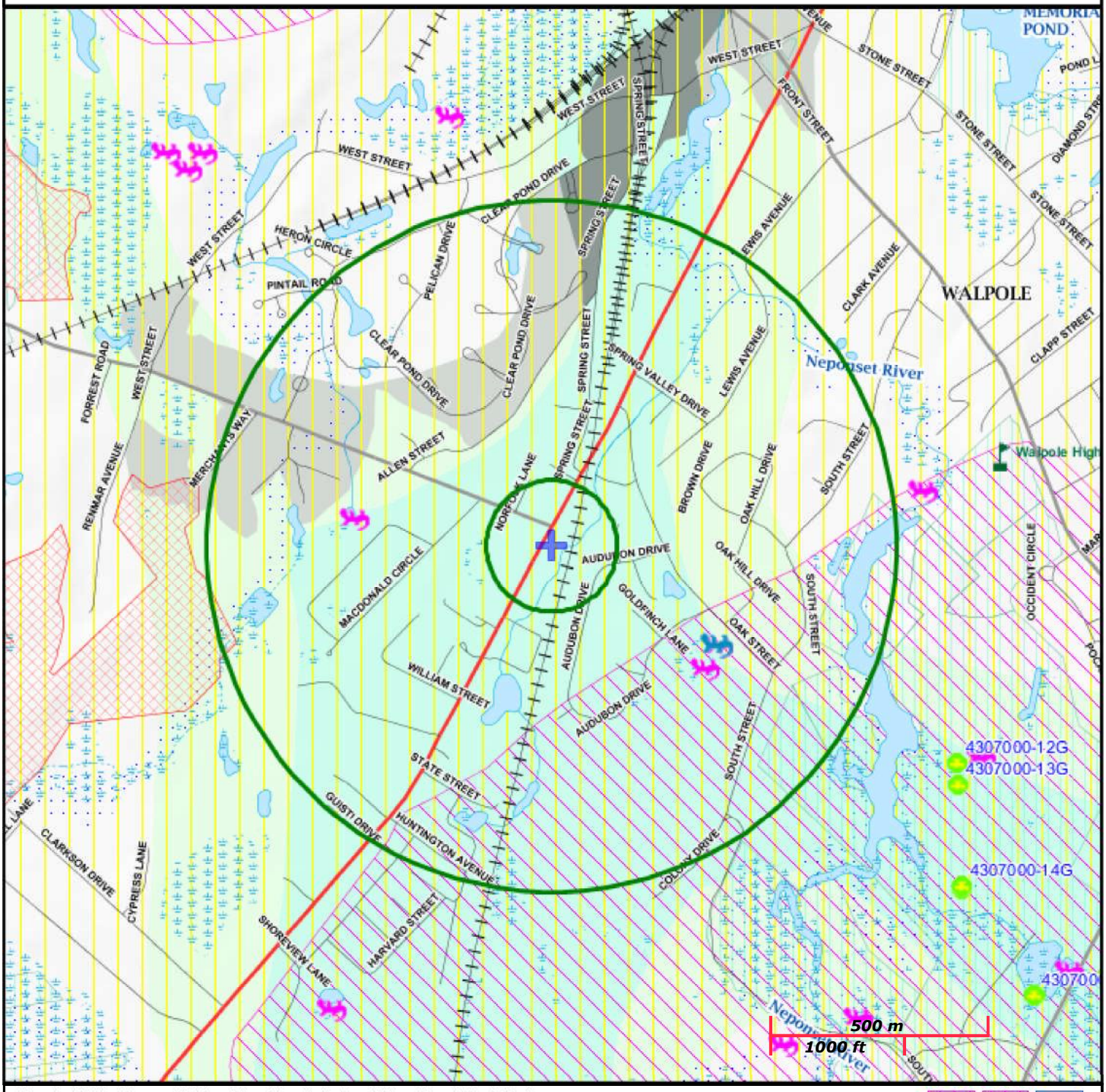
MassDEP - Bureau of Waste Site Cleanup

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

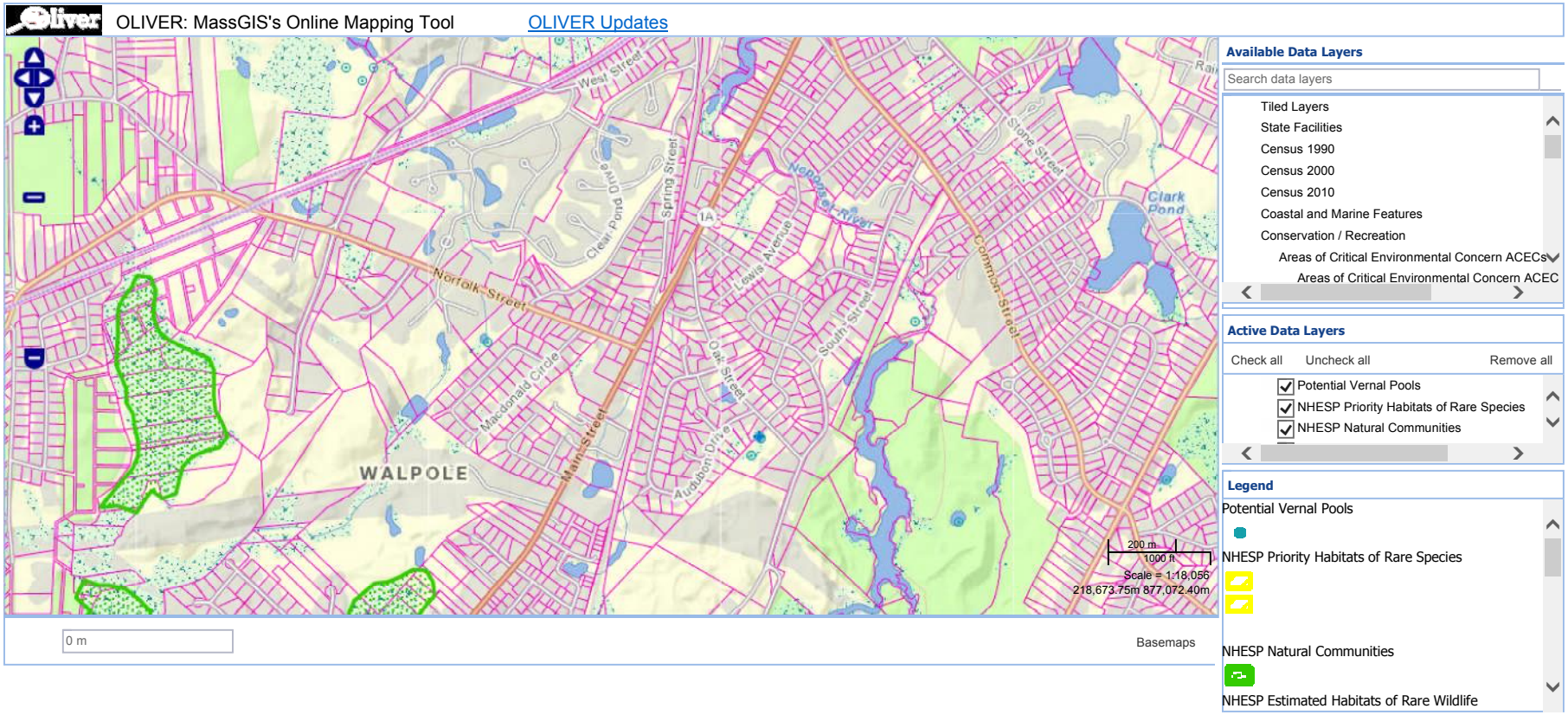
Site Information:
CFI WALPOLE
1340 MAIN STREET WALPOLE MA WALPOLE, MA
NAD83 UTM Meters:
4667217mN , 313180mE (Zone: 19)
May 13, 2014

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately repsponsible 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.


OLIVER: MassGIS's Online Mapping Tool
OLIVER Updates
WALPOLE
West Street
Norfolk Street
Main Street
Spring Street
Clear Pond Drive
Macdonald Circle
Oak Street
Audubon Drive
Lewis Avenue
South Street
Common Street
Stone Street
Neponset River
Clark Pond
200 m
1000 ft
Scale = 1:18,056
218,673.75m 877,072.40m
0 m
Basemaps
Available Data Layers
Search data layers
Tiled Layers
State Facilities
Census 1990
Census 2000
Census 2010
Coastal and Marine Features
Conservation / Recreation
Areas of Critical Environmental Concern ACECs
Areas of Critical Environmental Concern ACEC
Active Data Layers
Check all
Uncheck all
Remove all
Potential Vernal Pools
NHESP Priority Habitats of Rare Species
NHESP Natural Communities
Legend
Potential Vernal Pools
NHESP Priority Habitats of Rare Species
NHESP Natural Communities
NHESP Estimated Habitats of Rare Wildlife

ATTACHMENT IV

Massachusetts Cultural Resource Information System
MACRIS

MHC Home | MACRIS Home

Login

Results

Get Results in Report Format
○PDF ◉Spreadsheet

Below are the results of your search, using the following search criteria:
Town(s): Walpole
Street No: 1340
Street Name: Main
Resource Type(s): Area, Building, Burial Ground, Object, Structure

For more information about this page and how to use it, click here

No Results Found.

New Search | New Search – Same Town(s) | Previous

MHC Home | MACRIS Home