WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

588 Silver Street, Agawam, MA 01001 tel 413.789.3530 fax 413.789.2776 www.ecsconsult.com

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

December 9, 2010
Project No. J12660
Document No. 39768

VIA EMAIL

RE: F. L. Roberts and Company Inc.
399 Northampton Street
Amherst, Massachusetts
RGP No. MAG910175
MassDEP RTN 1-687

Dear Sir or Madam:

Environmental Compliance Services, Inc. (ECS) is pleased to provide documentation for the reapplication for coverage under the Remediation General Permit (RGP) on behalf of F.L. Roberts and Company Inc. (FLR). This Notice of Intent (NOI) is submitted in order to continue the operation of a groundwater recovery and treatment system (GWTS) located at 399 Northampton Street, Amherst, Hampshire County, Massachusetts (herein referred to as the Site). The GWTS has been operated at the Site since January 2006 to control and eliminate dissolved-phase hydrocarbons in the groundwater. A Site Locus is provided as Figure 1. The NOI form is attached.

System Design

The system design schematic is attached. The groundwater treatment system consists of a recovery well constructed of 18-inch corrugated stainless steel, which was installed during construction activities in the summer of 1998 for dewatering purposes. This well was subsequently fitted with a submersible sump pump, which is controlled by a float switch. When the groundwater elevation within the well reaches a float on the pump, the groundwater is pumped through two, 200-pound LPGAC canisters. Sample ports are located prior to the first canister, at the midpoint, and at the system effluent. These sample ports are provided to monitor both the system efficiency and required permit guidelines. Following carbon treatment, the groundwater is discharged to the stormwater system via a catch basin east of the car wash building. In August 2006, a particulate filter was added to the system prior to discharge to maintain permit requirements.

Following carbon treatment, the groundwater is discharged via 2-inch Schedule 40 polyvinyl chloride (PVC) pipe to a 16-inch PVC roof-drain leader located below grade at the northern corner of the Facility. From this connection, the 16-inch PVC drain discharges to a catch basin located on the north-central portion of the Site on Town of Hadley property, east of the self-service car wash building. From this catch basin, the flow travels northerly to a second catch basin; then travels west to a third catch basin located behind the self-service car wash; then travels south-westerly to a fourth catch basin located northwest of the self-service car wash; then travels southerly along the western boundary of the Site to a fifth catch basin located between the self-service car wash and the automated car wash building; the flow

continues southerly along the western boundary of the Site to a sixth catch basin located west of the southern corner of the automated car wash building; the flow then travels west to a seventh catch basin located in the parking lot of the western abutting strip mall building and continues westerly through three additional catch basins (8, 9, and 10) across the strip mall parking lot; from the tenth catch basin, the flow continues westerly and discharges into an un-named brook, which is a tributary of the Mill River in the Town of Hadley, Massachusetts. A Site plan detailing the location of the groundwater treatment system and the catch basin for the storm water line is attached.

During operation from January 2010 to September 2010, the measured flow rate from the system ranged from 3.0 to 3.6 gallons per minute (gpm) during active operation. The average flow rate during this time period was calculated to be 3.3 gpm.

Influent Sample Analysis

Samples have been collected on a monthly basis of the untreated influent and treated effluent from the GWTS and submitted for analysis of Total Suspended Solids (TSS) by Method SM2540D, the volatile organic compounds (VOCs) benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tert-butyl ether (MtBE), and naphthalene by the United States Environmental Protection Agency (USEPA) Method 8260B, Total Petroleum Hydrocarbons (TPH) by the USEPA Method 1664A, and for total arsenic, copper and iron by the USEPA Method 6010B.

The table of parameters in the NOI was completed based upon 2010 sampling data. The following parameters are believed present in the potential discharge of the GWTS:

- BTEX
- MtBE
- TPH
- Total Suspended Solids
- Arsenic
- Copper
- Iron

The calculations for the dilution factors for the detected metals are attached. Information regarding the receiving waters and environmental receptors is included in the NOI.

Copies of this letter and supporting documentation have been forwarded to Mr. David Slowick at the Western Regional Office of the MassDEP. 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 (413) 789-3530.

Sincerely,
ENVIRONMENTAL COMPLIANCE SERVICES, INC.

Kelly L. Doherty
Project Manager

KLD/kab
Attachments

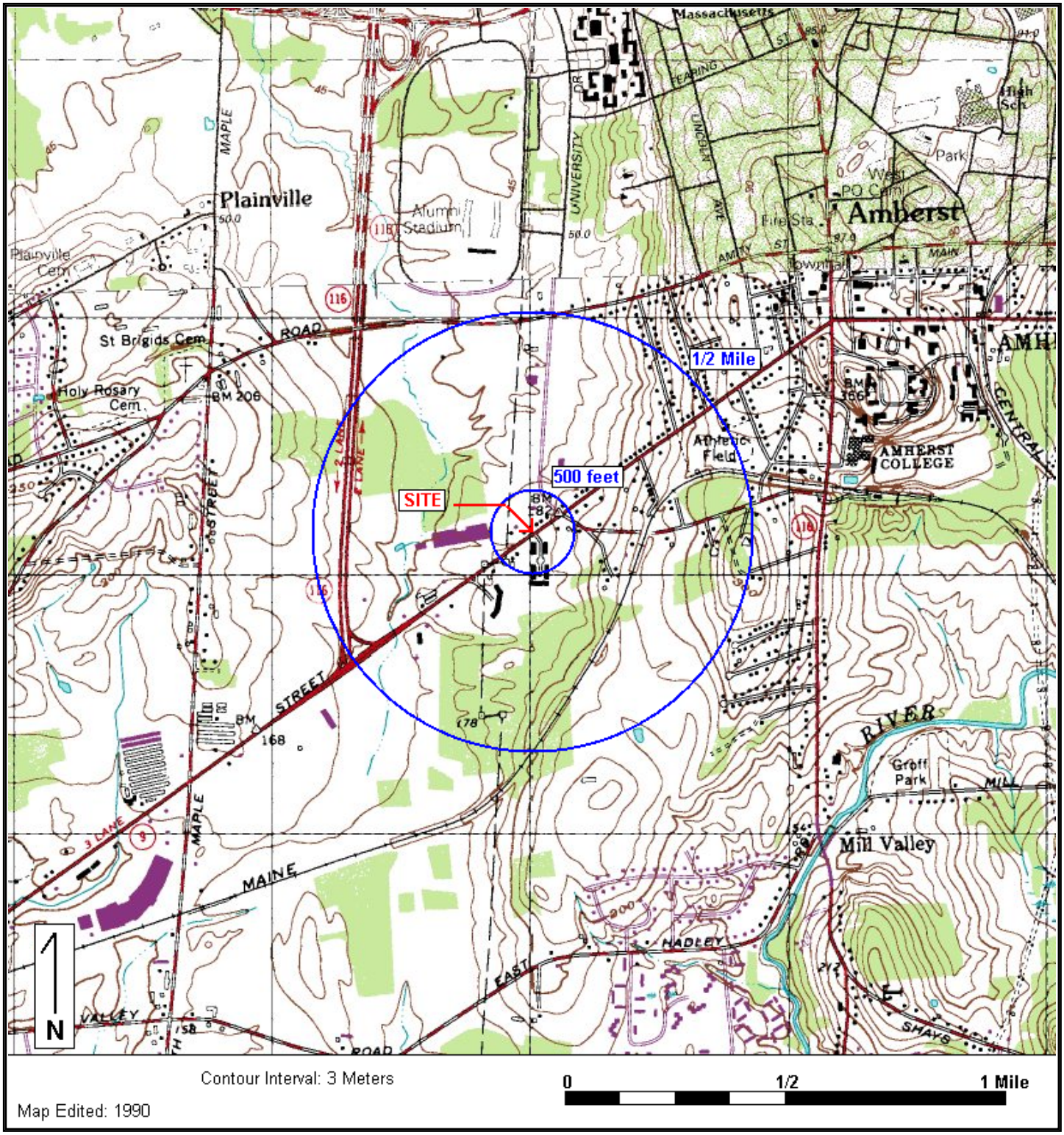
cc: D. Slowick, MassDEP, WERO

FIGURES

Environmental Compliance Services, Inc.
588 Silver Street
Agawam, MA 01001
Phone 413.789.3530 Fax 413.789.2776
www.ecsconsult.com

399 Northampton Street, Amherst, MA
399 Northampton Street
Amherst, MA 01002-2547

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Mount Holyoke, MA
Lat/Lon: 42º 21' 58" NORTH, 72º 32' 3" WEST - UTM Coordinates: 18 703042 EAST / 4693382 NORTH
Generated By: Christine DiMaio

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:** F.L. Roberts and Company Inc.		**Facility/site** mailing address:			
Location of **facility/site:** longitude: 72 32' 08" latitude: 42 21' 57"	Facility SIC code(s): 5541	Street: 399 Northampton Street (Route 9)			
b) Name of **facility/site owner:**		Town: Amherst			
Email address of facility/site owner:		State: MA	Zip: 01002	County: Hampshire	
Telephone no. of facility/site **owner:** (413)781-7444					
Fax no. of facility/site **owner:** (413)781-4328		**Owner** is (check one): 1. Federal ○ 2. State/Tribal ○ 3. Private ⊙ 4. Other ○ if so, describe:			
Address of **owner** (if different from site):					
Street: 93 West Broad Street					
Town: Springfield	State: MA	Zip: 01101	County: Hampden		
c) Legal name of **operator:**	**Operator** telephone no: (413)789-3530				
Environmental Compliance Services Inc.	**Operator** fax no.: (413)789-2776	**Operator** email: kdoherty@ecsconsult.com			
Operator contact name and title: Kelly Doherty - Project Manager					
Address of **operator** (if different from owner):	Street: 588 Silver Street				
Town: Agawam	State: MA	Zip: 01001	County: Hampden		

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: 99-033
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge?
Y ⊙ N ○, if Y, date and tracking #: forms filed for permit exclusion
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: Release Tracking Number 1-687
2. permit or license # assigned:
3. state agency contact information: name, location, and telephone number:

MassDEP - WERO
436 Dwight St.
Springfield, MA 01103 (413) 784-1149

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:

An 18-inch diameter perforated stainless steel pipe was installed at 12 feet below grade adjacent to the foundation of the eastern corner of the building. The pipe is fitted with a float device and sump pump, connected to a liquid phase granulated activated carbon filtration system. Cont. Att. I

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 0.01196 Is maximum flow a **design value**? Y ○ N ⊙
Average flow (include units) 0.0076 cfs Is average flow a design value or estimate? estimate

3) Latitude and longitude of each discharge within 100 feet:

pt.1: lat	42 21' 54"	long	72 32' 24"	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 Oct 10, 1998 end Aug 31, 2011

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

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)		☐	☒	9	grab	SM25400	5.0 mg/L	0.006	0.012		
2. Total Residual Chlorine (TRC)		☒	☐								
3. Total Petroleum Hydrocarbons (TPH)		☐	☒	9	grab	1664	1.0 mg/L	<0.001	NA		
4. Cyanide (CN)	57125	☒	☐								
5. Benzene (B)	71432	☐	☒	9	grab	8260B	1.0 ug/L	<1.0	NA		
6. Toluene (T)	108883	☐	☒	9	grab	8260B	1.0 ug/L	<1.0	NA		
7. Ethylbenzene (E)	100414	☐	☒	9	grab	8260B	1.0 ug/L	<1.0	NA		
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☐	☒	9	grab	8260B	1.0 ug/L	<1.0	NA		
9. Total BTEX [2]	n/a	☐	☒	9	grab	8260B	1.0 ug/L	<1.0	NA		
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) [3]	106934	☒	☐								
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☐	☒	9	grab	8260B	1.0 ug/L	<1.0	NA		
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐								

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

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

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

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

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

[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	☒	☐								
i. Acenaphthylene	208968	☒	☐								
j. Anthracene	120127	☒	☐								
k. Benzo(ghi) Perylene	191242	☒	☐								
l. Fluoranthene	206440	☒	☐								
m. Fluorene	86737	☒	☐								
n. Naphthalene	91203	☒	☐								
o. Phenanthrene	85018	☒	☐								
p. Pyrene	129000	☒	☐								
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐								
38. Chloride	16887006	☒	☐								
39. Antimony	7440360	☒	☐								
40. Arsenic	7440382	☐	☒	9	grab	6010B	0.004 mg/L	17	0.013		
41. Cadmium	7440439	☒	☐								
42. Chromium III (trivalent)	16065831	☒	☐								
43. Chromium VI (hexavalent)	18540299	☒	☐								
44. Copper	7440508	☐	☒	9	grab	6010B	0.005 mg/L	8.6	0.006		
45. Lead	7439921	☒	☐								
46. Mercury	7439976	☒	☐								
47. Nickel	7440020	☒	☐								
48. Selenium	7782492	☒	☐								
49. Silver	7440224	☒	☐								
50. Zinc	7440666	☒	☐								
51. Iron	7439896	☐	☒	9	grab	6010B	0.015 mg/L	178	0.135		
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? arsenic, copper, 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: arsenic DF: 789 Metal: copper DF: 789 Metal: iron DF: 789 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- however, measured discharge concentration does not exceed

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:

See Attachment I and III

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 3.0 gpm Maximum flow rate of treatment system 3.6 gpm
Design flow rate of treatment system _____ gpm

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

NA

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:

see attached

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 6.31 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.

Discharge is planned to be discontinued in the Spring -Summer of 2011, upon removal of the building.

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:	F.L. Roberts gas station and car wash
Operator signature:	Kelly L Doherty
Printed Name &Title:	Kelly L. Doherty - Project Manager
Date:	12/9/10

Remediation General Permit – Appendix V – Attachment I

2. A.

Continued from text: When groundwater rises to 8 feet the system pumps the groundwater through the carbon to prevent infiltration in the basement of the structure and then discharges to the storm water drainage system.

Maximum Daily Value and Dilution Factor Calculations – 3.

Arsenic (maximum daily value)

0.0002 x 17 x 8.34 = 0.028/2.2 = 0.013 kg

Copper (maximum daily value)

0.002 x 8.6 x 8.34 = 0.014/2.2 = 0.0006 kg

Iron

0.002 x 178 x 8.34 = 0.297/2.2 = 0.135 kg

Dilution Factor

DF= 0.008 + 6.31*/0.008 = 789

*7Q10 of Mill River at Northampton, MA is 6.31 cubic feet per second (cfs) (Reis, 1998) Gage # 0.1171500, obtained from 1 mile downstream of Clement St. (CT River Watershed 2003-2007 Water Quality Assessment Report, Appendix B)

4. A.

The system consists of a submersible sump pump, which is controlled by a float switch. When the water table rises to the float elevation, groundwater is pumped through two, 200-pound liquid phase granular activated carbon (LGAC) canisters. Sample ports are located prior to the first canister, at the midpoint, and at the system effluent. These sample points are provided to monitor both the system efficiency and required permit guidelines. See Attachment III.

5. B.

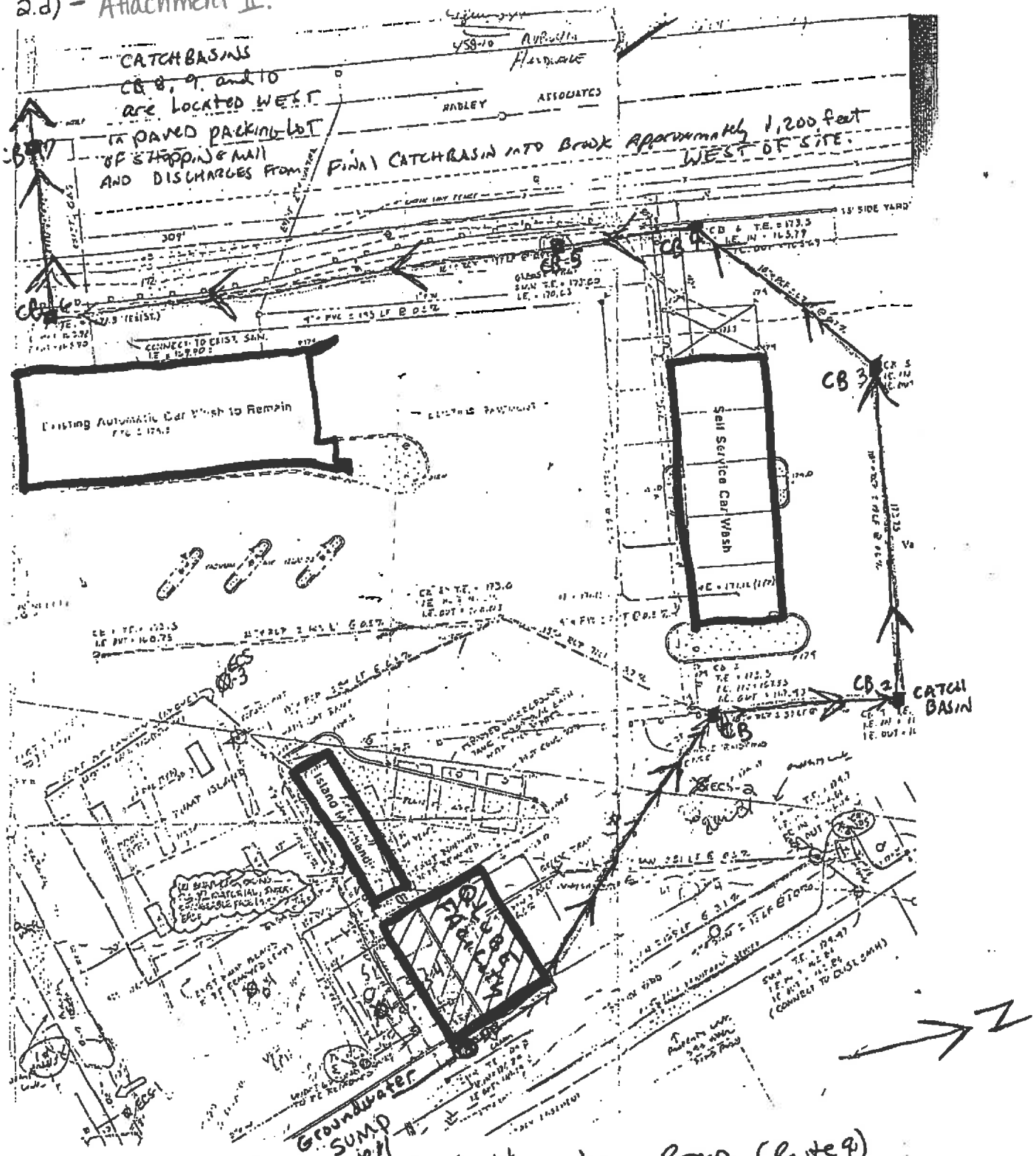
Following carbon treatment, the groundwater is discharged via 2-inch Schedule 40 polyvinyl chloride (PVC) pipe to a 16-inch PVC roof drain leader located below grade at the northern corner of the facility. From this connection, the 16-inch PVC drain discharges to a catch basin located on the north-central portion of the Site on Town of Hadley property, east of the self-service car wash building. From this catch basin, the flow travels northerly to a second catch basin; then travels west to a third catch basin located behind the self-service car wash; then travels south-westerly to a fourth catch basin located northwest of the self-service car wash; then travels southerly along the western boundary of the Site to

a fifth catch basin located between the self-service car wash and the automated car wash building.; the flow then travels west to a seventh catch basin located in the parking lot of the western abutting strip mall building and continues westerly through three additional catch basins (8, 9. And 10) across the strip mall parking lot; from the tenth catch basin, the flow continues westerly and discharges into an un-named brook, which is a tributary of the Mill River in the Town of Hadley, Massachusetts. – See Attachment II for sketches.

5. E.

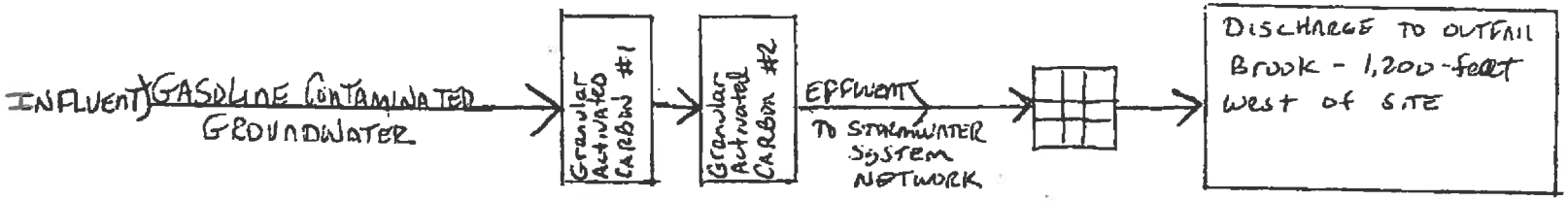
7Q10 of Mill River at Northampton, MA is 6.31 cfs (Reis, 1998) Gage # 0.1171500, obtained from 1 mile downstream of Clement St. (CT River Watershed 2003-2007 Water Quality Assessment Report, Appendix B)

2.d) – Attachment II.



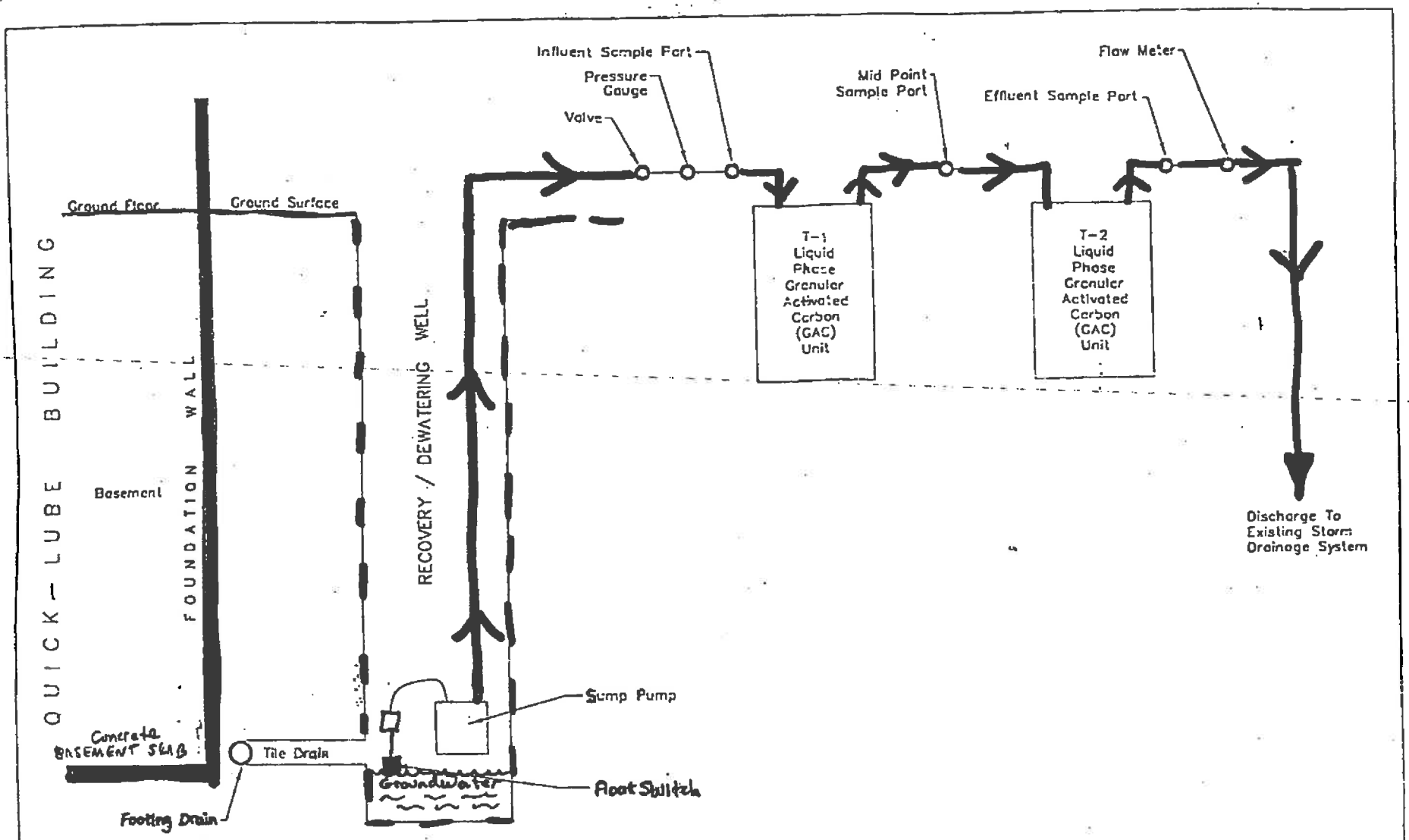
F.L. Roberts Well
399 Northampton Road (Route 9)
Amherst, MA.

2.d) - Attachment II



F. L. Roberts + Co. Inc.
399 Northampton Road - Route 9
Amherst, MA

4a) - Attachment III



ENVIRONMENTAL COMPLIANCE SERVICES, INC.
588 Silver Street • Agawam, MA 01001

REVISIONS

No.	Date	Description

PROJECT:
F. L. Roberts & Co., Inc.
399 Northampton Road – Route 9
Amherst, Massachusetts

TITLE:
System Detail

COMPUTER CADFILE : S1256CRW.DWG

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RAS	WAS	WAS	WAS
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
None	Sept 1998	J12660.15	

Report Date:
28-Jan-10 14:28

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
588 Silver Street
Agawam, MA 01001
Attn: Kelly Doherty

Project: FL Roberts - 399 Northampton Rd - Amherst, MA
Project #: J12660.00

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB06882-01	Influent	Ground Water	18-Jan-10 12:45	18-Jan-10 16:30
SB06882-02	Mdpt	Ground Water	18-Jan-10 12:50	18-Jan-10 16:30
SB06882-03	Effluent	Ground Water	18-Jan-10 13:00	18-Jan-10 16:30
SB06882-04	TB	Deionized Water	18-Jan-10 08:00	18-Jan-10 16:30

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
Vermont # VT-11393

Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Technical Reviewer's Initial:

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 note that this report contains 12 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supercedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report is available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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

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

CASE NARRATIVE:

The samples were received 3.8 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 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.

According to WSC-CAM 5/2004 Rev.4, Table 11 A-1, recovery for some VOC analytes have been deemed potentially difficult. Although they may still be within the recommended 70%-130% recovery range, a range has been set based on historical control limits.

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

SW846 6010B

Samples:

SB06882-01 *Influent*

Data confirmed with duplicate analysis.

Arsenic

SB06882-03 *Effluent*

Data confirmed with duplicate analysis.

Arsenic

SW846 8260B

Samples:

SB06882-01 *Influent*

This sample was not able to be analyzed for client requested reporting limits due to high concentrations of target analytes in the sample.

SB06882-02 *Mdpt*

Insufficient preservative to reduce the sample pH to less than 2.

SB06882-03 *Effluent*

Insufficient preservative to reduce the sample pH to less than 2.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Influent SB06882-01	J12660.00	Ground Water	18-Jan-10 12:45	18-Jan-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Volatile Organic Compounds											
Volatile Organic Aromatics by SW846 8260B			GS								
Prepared by method SW846 5030 Water MS											
71-43-2	Benzene	54.6		µg/l	20.0	20	SW846 8260B	25-Jan-10	25-Jan-10	1002312	
100-41-4	Ethylbenzene	329		µg/l	20.0	20	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	84.8		µg/l	20.0	20	"	"	"	"	
91-20-3	Naphthalene	150		µg/l	20.0	20	"	"	"	"	
108-88-3	Toluene	24.8		µg/l	20.0	20	"	"	"	"	
179601-23-1	m,p-Xylene	962		µg/l	40.0	20	"	"	"	"	
95-47-6	o-Xylene	220		µg/l	20.0	20	"	"	"	"	
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*98*		*70-130 %*			"	"	"	"	
2037-26-5	*Toluene-d8*	*103*		*70-130 %*			"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*96*		*70-130 %*			"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*98*		*70-130 %*			"	"	"	"	
Extractable Petroleum Hydrocarbons											
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	20-Jan-10	21-Jan-10	1002026	
Total Metals by EPA 6000/7000 Series Methods											
7440-38-2	Arsenic	0.0047	V11	mg/l	0.0040	1	SW846 6010B	21-Jan-10	22-Jan-10	1001950	
7440-50-8	Copper	0.0628		mg/l	0.0050	1	"	"	"	"	
7439-89-6	Iron	20.0		mg/l	0.0150	1	"	"	"	"	
General Chemistry Parameters											
	Total Suspended Solids	23.0		mg/l	5.00	1	SM2540D	19-Jan-10	19-Jan-10	1001982	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Mdpt SB06882-02	J12660.00	Ground Water	18-Jan-10 12:50	18-Jan-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Volatile Organic Compounds											
Volatile Organic Aromatics by SW846 8260B			PH								
Prepared by method SW846 5030 Water MS											
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	25-Jan-10	25-Jan-10	1002312	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*95*		*70-130 %*			"	"	"	"	
2037-26-5	*Toluene-d8*	*103*		*70-130 %*			"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*98*		*70-130 %*			"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*99*		*70-130 %*			"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Effluent SB06882-03	J12660.00	Ground Water	18-Jan-10 13:00	18-Jan-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Volatile Organic Compounds											
Volatile Organic Aromatics by SW846 8260B			PH								
Prepared by method SW846 5030 Water MS											
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	25-Jan-10	25-Jan-10	1002312	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*96*		*70-130 %*			"	"	"	"	
2037-26-5	*Toluene-d8*	*104*		*70-130 %*			"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*98*		*70-130 %*			"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*98*		*70-130 %*			"	"	"	"	
Extractable Petroleum Hydrocarbons											
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	20-Jan-10	21-Jan-10	1002026	
Total Metals by EPA 6000/7000 Series Methods											
7440-38-2	Arsenic	0.199	V11	mg/l	0.0400	1	SW846 6010B	21-Jan-10	22-Jan-10	1001950	
7440-50-8	Copper	BRL		mg/l	0.0500	1	"	"	"	"	
7439-89-6	Iron	0.176		mg/l	0.150	1	"	"	"	"	
General Chemistry Parameters											
	Total Suspended Solids	16.0		mg/l	5.00	1	SM2540D	19-Jan-10	19-Jan-10	1001982	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
TB SB06882-04	J12660.00	Deionized Water	18-Jan-10 08:00	18-Jan-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Volatile Organic Compounds											
Volatile Organic Aromatics by SW846 8260B											
Prepared by method SW846 5030 Water MS											
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	25-Jan-10	26-Jan-10	1002318	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*96*		*70-130 %*			"	"	"	"	
2037-26-5	*Toluene-d8*	*104*		*70-130 %*			"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*97*		*70-130 %*			"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*100*		*70-130 %*			"	"	"	"	

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1002312 - SW846 5030 Water MS										
Blank (1002312-BLK1)										
Prepared & Analyzed: 25-Jan-10										
Benzene	BRL		µg/l	1.0						
Ethylbenzene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
Naphthalene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Chlorobenzene	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*48.2*		µg/l		*50.0*		*96*	*70-130*		
Surrogate: Toluene-d8	*51.3*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*48.5*		µg/l		*50.0*		*97*	*70-130*		
Surrogate: Dibromofluoromethane	*50.4*		µg/l		*50.0*		*101*	*70-130*		
LCS (1002312-BS1)										
Prepared & Analyzed: 25-Jan-10										
Benzene	19.8		µg/l		20.0		99	70-130		
Ethylbenzene	19.5		µg/l		20.0		97	70-130		
Methyl tert-butyl ether	18.4		µg/l		20.0		92	70-130		
Naphthalene	18.6		µg/l		20.0		93	70-130		
Toluene	20.1		µg/l		20.0		100	70-130		
m,p-Xylene	39.9		µg/l		40.0		100	70-130		
o-Xylene	20.8		µg/l		20.0		104	70-130		
Surrogate: 4-Bromofluorobenzene	*49.7*		µg/l		*50.0*		*99*	*70-130*		
Surrogate: Toluene-d8	*51.1*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*47.7*		µg/l		*50.0*		*95*	*70-130*		
Surrogate: Dibromofluoromethane	*50.1*		µg/l		*50.0*		*100*	*70-130*		
LCS Dup (1002312-BSD1)										
Prepared & Analyzed: 25-Jan-10										
Benzene	19.2		µg/l		20.0		96	70-130	3	25
Ethylbenzene	18.8		µg/l		20.0		94	70-130	3	25
Methyl tert-butyl ether	19.1		µg/l		20.0		95	70-130	3	25
Naphthalene	18.3		µg/l		20.0		92	70-130	2	25
Toluene	19.5		µg/l		20.0		98	70-130	3	25
m,p-Xylene	38.8		µg/l		40.0		97	70-130	3	25
o-Xylene	20.3		µg/l		20.0		102	70-130	3	25
Surrogate: 4-Bromofluorobenzene	*49.4*		µg/l		*50.0*		*99*	*70-130*		
Surrogate: Toluene-d8	*51.2*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*47.5*		µg/l		*50.0*		*95*	*70-130*		
Surrogate: Dibromofluoromethane	*49.8*		µg/l		*50.0*		*100*	*70-130*		
Batch 1002318 - SW846 5030 Water MS										
Blank (1002318-BLK1)										
Prepared & Analyzed: 25-Jan-10										
Benzene	BRL		µg/l	1.0						
Ethylbenzene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
Naphthalene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1002318 - SW846 5030 Water MS										
Blank (1002318-BLK1)										
Prepared & Analyzed: 25-Jan-10										
Chlorobenzene	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*47.8*		µg/l		*50.0*		*96*	*70-130*		
Surrogate: Toluene-d8	*52.1*		µg/l		*50.0*		*104*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*48.2*		µg/l		*50.0*		*96*	*70-130*		
Surrogate: Dibromofluoromethane	*49.4*		µg/l		*50.0*		*99*	*70-130*		
LCS (1002318-BS1)										
Prepared & Analyzed: 25-Jan-10										
Benzene	19.6		µg/l		20.0		98	70-130		
Ethylbenzene	19.5		µg/l		20.0		97	70-130		
Methyl tert-butyl ether	19.2		µg/l		20.0		96	70-130		
Naphthalene	18.1		µg/l		20.0		90	70-130		
Toluene	19.9		µg/l		20.0		99	70-130		
m,p-Xylene	40.1		µg/l		40.0		100	70-130		
o-Xylene	20.8		µg/l		20.0		104	70-130		
Surrogate: 4-Bromofluorobenzene	*49.6*		µg/l		*50.0*		*99*	*70-130*		
Surrogate: Toluene-d8	*51.6*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*47.2*		µg/l		*50.0*		*94*	*70-130*		
Surrogate: Dibromofluoromethane	*49.8*		µg/l		*50.0*		*100*	*70-130*		
LCS Dup (1002318-BSD1)										
Prepared & Analyzed: 25-Jan-10										
Benzene	20.5		µg/l		20.0		102	70-130	4	25
Ethylbenzene	20.4		µg/l		20.0		102	70-130	5	25
Methyl tert-butyl ether	20.4		µg/l		20.0		102	70-130	6	25
Naphthalene	18.8		µg/l		20.0		94	70-130	4	25
Toluene	20.8		µg/l		20.0		104	70-130	5	25
m,p-Xylene	42.2		µg/l		40.0		106	70-130	5	25
o-Xylene	21.8		µg/l		20.0		109	70-130	5	25
Surrogate: 4-Bromofluorobenzene	*49.2*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: Toluene-d8	*51.3*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*46.8*		µg/l		*50.0*		*94*	*70-130*		
Surrogate: Dibromofluoromethane	*49.7*		µg/l		*50.0*		*99*	*70-130*		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1002026 - SW846 3510C										
Blank (1002026-BLK1)										
Prepared: 20-Jan-10 Analyzed: 21-Jan-10										
Non-polar material (SGT-HEM)	BRL		mg/l	1.0						
LCS (1002026-BS1)										
Prepared: 20-Jan-10 Analyzed: 21-Jan-10										
Non-polar material (SGT-HEM)	28.8		mg/l		33.3		86	83-101		

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

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1001950 - SW846 3005A										
Blank (1001950-BLK1)										
Prepared: 21-Jan-10 Analyzed: 22-Jan-10										
Iron	BRL		mg/l	0.0150						
Arsenic	BRL		mg/l	0.0040						
Copper	BRL		mg/l	0.0050						
LCS (1001950-BS1)										
Prepared: 21-Jan-10 Analyzed: 22-Jan-10										
Iron	1.28		mg/l	0.0150	1.25		103	85-115		
Copper	1.41		mg/l	0.0050	1.25		113	85-115		
Arsenic	1.29		mg/l	0.0040	1.25		103	85-115		
LCS Dup (1001950-BSD1)										
Prepared: 21-Jan-10 Analyzed: 22-Jan-10										
Iron	1.41		mg/l	0.0150	1.25		113	85-115	9	20
Arsenic	1.29		mg/l	0.0040	1.25		103	85-115	0.3	20
Copper	1.42		mg/l	0.0050	1.25		113	85-115	0.2	20

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1001982 - General Preparation										
Blank (1001982-BLK1)										
Prepared & Analyzed: 19-Jan-10										
Total Suspended Solids	BRL		mg/l	5.00						
Blank (1001982-BLK2)										
Prepared & Analyzed: 19-Jan-10										
Total Suspended Solids	BRL		mg/l	5.00						
LCS (1001982-BS1)										
Prepared & Analyzed: 19-Jan-10										
Total Suspended Solids	86.0		mg/l	10.0	92.3		93	90-110		
LCS (1001982-BS2)										
Prepared & Analyzed: 19-Jan-10										
Total Suspended Solids	96.0		mg/l	10.0	92.3		104	90-110		
Duplicate (1001982-DUP2)	**Source: SB06882-03**									
Prepared & Analyzed: 19-Jan-10										
Total Suspended Solids	14.0		mg/l	5.00		16.0			13	20

Notes and Definitions

GS	This sample was not able to be analyzed for client requested reporting limits due to high concentrations of target analytes in the sample.
PH	Insufficient preservative to reduce the sample pH to less than 2.
V11	Data confirmed with duplicate analysis.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Interpretation of Total Petroleum Hydrocarbon Report

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

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

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

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

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

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

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

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

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

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

Validated by:
Hanibal C. Tayeh, Ph.D.
Nicole Leja

MADEP MCP ANALYTICAL METHOD REPORT CERTIFICATION FORM

Laboratory Name: Spectrum Analytical, Inc. - Agawam, MA	Project #: J12660.00
Project Location: FL Roberts - 399 Northampton Rd - Amherst, MA	MADEP RTN [1]:

This form provides certifications for the following data set:
SB06882-01 through SB06882-04

Sample matrices:	Deionized Water Ground Water				
MCP SW-846 Methods Used	☑ 8260B	☐ 8151A	☐ 8330	☑ 6010B	☐ 7470A/1A
	☐ 8270C	☐ 8081A	☐ VPH	☐ 6020	☐ 9014M [2]
	☐ 8082	☐ 8021B	☐ EPH	☐ 7000S [3]	☐ 7196A

1 List Release Tracking Number (RTN), if known
2 M - SW-846 Method 9014 or MADEP Physiologically Available Cyanide (PAC) Method
3 S - SW-846 Methods 7000 Series List individual method and analyte

An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status

A	Were all samples received by the laboratory in a condition consistent with that described on the Chain of Custody documentation for the data set?	☑ Yes	☐ No
B	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	☑ Yes	☐ No
C	Does the data included in this report meet all the analytical requirements for "Presumptive Certainty", as described in Section 2.0 (a), (b), (c) and (d) of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑ Yes	☐ No
D	***VPH and EPH methods only***: Was the VPH or EPH method conducted without significant modifications (see Section 11.3 of respective methods)?	☐ Yes	☐ No

A response to questions E and F below is required for "Presumptive Certainty" status

E	Were all analytical QC performance standards and recommendations for the specified methods achieved?	☑ Yes	☐ No
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	☐ 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.

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Date: 1/28/2010

SB 06882

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-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS - AGAWAM

Invoice To: ECS - AGAWAM

Project No.: J12660.00

Site Name: F. C. ROBERTS

Location: 399 NORTHAMPTON ROAD, AMHERST State: MA

Telephone #: (413) 789-3530

Project Mgr. KELLY DOHERTY

P.O. No.: _____ RQN: C003

Sampler(s): TIM RUSSIAN

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= 4°C ICE 10= _____ 11= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1= NL WATER X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	TSS SM2540D	TRH (1664)	METHOD 8260B FOR BTEX, MTBE, NAPHTHALENE ONLY	TOTAL ARSENIC (As)	TOTAL COPPER (Cu)	TOTAL IRON (Fe)
06882-01	INFLUENT	1/18/2010	12:45	6	GW	3	1		2	X	X	X	X	X	X
02	MW1		12:50	6	GW	3						X			
03	EFFLUENT		1:00	6	GW	3	1		2	X	X	X	X	X	X
04	TB		8:30	6	X1	1						X			

List preservative code below: 9 | 3,9 | 2,9 | 4,9 | 4,9 | 4,9

QA/QC Reporting Notes: (check as needed)
- [X] Provide MA DEP MCP CAM Report
- [ ] Provide CT DPH RCP Report

QA/QC Reporting Level: [X] Standard [ ] No QC
[ ] Other _____

State specific reporting standards: GW-1, GW-2, GW-3

Relinquished by:	Received by:	Date:	Time:	Temp°C
		1/18/10	1630	3.8

[ ] EDD Format _____
[X] E-mail to KDOHERTY@ECSCONSULT.COM

[ ] Ambient [X] Iced [ ] Refrigerated [ ] Fridge temp ___ °C [ ] Freezer temp ___ °C

F.L. Roberts Amherst MA J12660.00 Phase 05		Groundwater Treatment System Remediation General Permit						
		Glassware						
Parmeters	Matrix	Point of Sample or Measurement	40-ml HCl preserved vials	500 mL preserved with HNO_3	500 mL unpreserved	1 amber liter H_2SO_4 preserved	Reportable Detction Limit	Analytical Method
TSS	GW	influent & effluent			1		5 mg/L	Method SM2540D
Total Arsenic (As)	GW	influent & effluent					5 ug/L	
Total Copper (Cu)	GW	influent & effluent		1			5ug/L	ICP
Total Iron (Fe)	GW	influent & effluent					5ug/L	
TPH	GW	influent & effluent				1	5 mg/L	Method 1664
BTEX, MtBE, naphthalene	GW	influent, midpoint, effluent	3				2 ug/L	Method 8260B for BTEX, MtBE, naphthalene only
Trip Blank	DI	in cooler	1				2 ug/L	Method 8260B for BTEX, MtBE, naphthalene only

Notes:

Method Detection Limits specified

Measure and Record the following:

Instantaneous Flow	3.5 gpm	system	
Total Flow	113757k	system	gpm
pH	6.81	effluent	

Report Date:
01-Mar-10 10:42

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
588 Silver Street
Agawam, MA 01001
Attn: Virginia Irvine

Project: FL Roberts - Amherst, MA
Project #: J12660

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB08071-01	Influent	Ground Water	15-Feb-10 14:15	16-Feb-10 08:40
SB08071-02	Midpt	Ground Water	15-Feb-10 14:17	16-Feb-10 08:40
SB08071-03	Effluent	Ground Water	15-Feb-10 14:18	16-Feb-10 08:40
SB08071-04	Trip	Deionized Water	15-Feb-10 00:00	16-Feb-10 08:40

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
Vermont # VT-11393

Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Technical Reviewer's Initial:

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 note that this report contains 11 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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

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

CASE NARRATIVE:

The samples were received 1.6 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 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.

According to WSC-CAM 5/2004 Rev.4, Table 11 A-1, recovery for some VOC analytes have been deemed potentially difficult. Although they may still be within the recommended 70%-130% recovery range, a range has been set based on historical control limits.

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

SW846 8260B

Samples:

SB08071-01	*Influent*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Influent SB08071-01	J12660	Ground Water	15-Feb-10 14:15	16-Feb-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Volatile Organic Compounds											
Volatile Organic Aromatics by SW846 8260B			GS1								
Prepared by method SW846 5030 Water MS											
71-43-2	Benzene	45.6		µg/l	10.0	10	SW846 8260B	22-Feb-10	23-Feb-10	1004123	
100-41-4	Ethylbenzene	256		µg/l	10.0	10	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	72.3		µg/l	10.0	10	"	"	"	"	
91-20-3	Naphthalene	140		µg/l	10.0	10	"	"	"	"	
108-88-3	Toluene	26.0		µg/l	10.0	10	"	"	"	"	
179601-23-1	m,p-Xylene	857		µg/l	20.0	10	"	"	"	"	
95-47-6	o-Xylene	207		µg/l	10.0	10	"	"	"	"	
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*100*		*70-130 %*			"	"	"	"	
2037-26-5	*Toluene-d8*	*99*		*70-130 %*			"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*94*		*70-130 %*			"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*95*		*70-130 %*			"	"	"	"	
Extractable Petroleum Hydrocarbons											
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	19-Feb-10	22-Feb-10	1003926	
Total Metals by EPA 6000/7000 Series Methods											
7440-38-2	Arsenic	0.0084		mg/l	0.0040	1	SW846 6010B	23-Feb-10	24-Feb-10	1004202	
7440-50-8	Copper	0.322		mg/l	0.0050	1	"	"	"	"	
7439-89-6	Iron	31.8		mg/l	0.0150	1	"	"	"	"	
General Chemistry Parameters											
	Total Suspended Solids	48.0		mg/l	5.00	1	SM2540D	18-Feb-10	18-Feb-10	1003842	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Midpt SB08071-02	J12660	Ground Water	15-Feb-10 14:17	16-Feb-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Volatile Organic Compounds											
Volatile Organic Aromatics by SW846 8260B											
Prepared by method SW846 5030 Water MS											
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	22-Feb-10	23-Feb-10	1004123	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*98*		*70-130 %*			"	"	"	"	
2037-26-5	*Toluene-d8*	*100*		*70-130 %*			"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*100*		*70-130 %*			"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*101*		*70-130 %*			"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Effluent SB08071-03	J12660	Ground Water	15-Feb-10 14:18	16-Feb-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Volatile Organic Compounds											
Volatile Organic Aromatics by SW846 8260B											
Prepared by method SW846 5030 Water MS											
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	22-Feb-10	23-Feb-10	1004123	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*97*		*70-130 %*			"	"	"	"	
2037-26-5	*Toluene-d8*	*100*		*70-130 %*			"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*101*		*70-130 %*			"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*101*		*70-130 %*			"	"	"	"	
Extractable Petroleum Hydrocarbons											
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	19-Feb-10	22-Feb-10	1003926	
Total Metals by EPA 6000/7000 Series Methods											
7440-38-2	Arsenic	BRL		mg/l	0.0040	1	SW846 6010B	23-Feb-10	24-Feb-10	1004202	
7440-50-8	Copper	BRL		mg/l	0.0050	1	"	"	"	"	
7439-89-6	Iron	0.0586		mg/l	0.0150	1	"	"	"	"	
General Chemistry Parameters											
	Total Suspended Solids	BRL		mg/l	5.00	1	SM2540D	18-Feb-10	18-Feb-10	1003842	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Trip SB08071-04	J12660	Deionized Water	15-Feb-10 00:00	16-Feb-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Volatile Organic Compounds											
Volatile Organic Aromatics by SW846 8260B											
Prepared by method SW846 5030 Water MS											
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	22-Feb-10	23-Feb-10	1004123	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*98*		*70-130 %*			"	"	"	"	
2037-26-5	*Toluene-d8*	*100*		*70-130 %*			"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*104*		*70-130 %*			"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*97*		*70-130 %*			"	"	"	"	

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1004123 - SW846 5030 Water MS										
Blank (1004123-BLK1)										
Prepared & Analyzed: 22-Feb-10										
Benzene	BRL		µg/l	1.0						
Ethylbenzene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
Naphthalene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Chlorobenzene	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*49.1*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: Toluene-d8	*50.0*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*49.8*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: Dibromofluoromethane	*51.4*		µg/l		*50.0*		*103*	*70-130*		
LCS (1004123-BS1)										
Prepared & Analyzed: 22-Feb-10										
Benzene	20.8		µg/l		20.0		104	70-130		
Ethylbenzene	20.7		µg/l		20.0		103	70-130		
Methyl tert-butyl ether	21.3		µg/l		20.0		106	70-130		
Naphthalene	22.8		µg/l		20.0		114	70-130		
Toluene	20.4		µg/l		20.0		102	70-130		
m,p-Xylene	43.5		µg/l		40.0		109	70-130		
o-Xylene	21.9		µg/l		20.0		109	70-130		
Surrogate: 4-Bromofluorobenzene	*50.3*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: Toluene-d8	*49.9*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*50.9*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: Dibromofluoromethane	*50.5*		µg/l		*50.0*		*101*	*70-130*		
LCS Dup (1004123-BSD1)										
Prepared: 22-Feb-10 Analyzed: 23-Feb-10										
Benzene	19.1		µg/l		20.0		95	70-130	9	25
Ethylbenzene	19.9		µg/l		20.0		100	70-130	4	25
Methyl tert-butyl ether	20.1		µg/l		20.0		100	70-130	6	25
Naphthalene	22.1		µg/l		20.0		110	70-130	3	25
Toluene	19.5		µg/l		20.0		97	70-130	5	25
m,p-Xylene	42.6		µg/l		40.0		107	70-130	2	25
o-Xylene	21.4		µg/l		20.0		107	70-130	2	25
Surrogate: 4-Bromofluorobenzene	*51.0*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: Toluene-d8	*50.3*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*47.8*		µg/l		*50.0*		*96*	*70-130*		
Surrogate: Dibromofluoromethane	*51.2*		µg/l		*50.0*		*102*	*70-130*		
Matrix Spike (1004123-MS1) **Source: SB08071-01**										
Prepared: 22-Feb-10 Analyzed: 23-Feb-10										
Benzene	22.5		µg/l		20.0	4.6	90	70-130		
Ethylbenzene	46.2		µg/l		20.0	25.6	103	70-130		
Methyl tert-butyl ether	23.5		µg/l		20.0	7.2	81	70-130		
Naphthalene	38.4		µg/l		20.0	14.0	122	70-130		
Toluene	21.9		µg/l		20.0	2.6	97	70-130		
m,p-Xylene	129		µg/l		40.0	85.7	108	70-130		
o-Xylene	42.5		µg/l		20.0	20.7	109	70-130		
Chlorobenzene	25.1		µg/l		20.0	BRL	125	70-130		

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1004123 - SW846 5030 Water MS										
Matrix Spike (1004123-MS1) **Source: SB08071-01**										
Prepared: 22-Feb-10 Analyzed: 23-Feb-10										
1,1-Dichloroethene	23.2		µg/l		20.0	BRL	116	70-130		
Trichloroethene	24.8		µg/l		20.0	BRL	124	70-130		
Surrogate: 4-Bromofluorobenzene	*50.6*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: Toluene-d8	*50.0*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*47.7*		µg/l		*50.0*		*95*	*70-130*		
Surrogate: Dibromofluoromethane	*50.8*		µg/l		*50.0*		*102*	*70-130*		
Matrix Spike Dup (1004123-MSD1) **Source: SB08071-01**										
Prepared: 22-Feb-10 Analyzed: 23-Feb-10										
Benzene	22.8		µg/l		20.0	4.6	91	70-130	1	30
Ethylbenzene	44.2		µg/l		20.0	25.6	93	70-130	10	30
Methyl tert-butyl ether	24.2		µg/l		20.0	7.2	85	70-130	5	30
Naphthalene	38.5		µg/l		20.0	14.0	122	70-130	0.5	30
Toluene	22.1		µg/l		20.0	2.6	98	70-130	1	30
m,p-Xylene	121		µg/l		40.0	85.7	89	70-130	19	30
o-Xylene	40.9		µg/l		20.0	20.7	101	70-130	8	30
Chlorobenzene	24.2		µg/l		20.0	BRL	121	70-130	4	30
1,1-Dichloroethene	22.9		µg/l		20.0	BRL	114	70-130	1	30
Trichloroethene	25.2		µg/l		20.0	BRL	126	70-130	2	30
Surrogate: 4-Bromofluorobenzene	*49.4*		µg/l		*50.0*		*99*	*70-130*		
Surrogate: Toluene-d8	*50.1*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*49.4*		µg/l		*50.0*		*99*	*70-130*		
Surrogate: Dibromofluoromethane	*51.9*		µg/l		*50.0*		*104*	*70-130*		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1003926 - SW846 3510C										
Blank (1003926-BLK1)										
Prepared: 19-Feb-10 Analyzed: 22-Feb-10										
Non-polar material (SGT-HEM)	BRL		mg/l	1.0						
LCS (1003926-BS1)										
Prepared: 19-Feb-10 Analyzed: 22-Feb-10										
Non-polar material (SGT-HEM)	28.8		mg/l		33.3		86	83-101		

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

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1004202 - SW846 3005A										
Blank (1004202-BLK1)										
Prepared: 23-Feb-10 Analyzed: 24-Feb-10										
Iron	BRL		mg/l	0.0150						
Arsenic	BRL		mg/l	0.0040						
Copper	BRL		mg/l	0.0050						
LCS (1004202-BS1)										
Prepared: 23-Feb-10 Analyzed: 24-Feb-10										
Iron	1.19		mg/l	0.0150	1.25		95	85-115		
Copper	1.27		mg/l	0.0050	1.25		101	85-115		
Arsenic	1.30		mg/l	0.0040	1.25		104	85-115		
LCS Dup (1004202-BSD1)										
Prepared: 23-Feb-10 Analyzed: 24-Feb-10										
Iron	1.17		mg/l	0.0150	1.25		94	85-115	1	20
Copper	1.26		mg/l	0.0050	1.25		100	85-115	0.9	20
Arsenic	1.29		mg/l	0.0040	1.25		103	85-115	0.8	20

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1003842 - General Preparation										
Blank (1003842-BLK1)										
Prepared & Analyzed: 18-Feb-10										
Total Suspended Solids	BRL		mg/l	5.00						
Blank (1003842-BLK2)										
Prepared & Analyzed: 18-Feb-10										
Total Suspended Solids	BRL		mg/l	5.00						
LCS (1003842-BS1)										
Prepared & Analyzed: 18-Feb-10										
Total Suspended Solids	86.0		mg/l	10.0	92.3		93	90-110		
LCS (1003842-BS2)										
Prepared & Analyzed: 18-Feb-10										
Total Suspended Solids	88.0		mg/l	10.0	92.3		95	90-110		

Notes and Definitions

GS1 Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

BRL Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

NR Not Reported

RPD Relative Percent Difference

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Interpretation of Total Petroleum Hydrocarbon Report

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

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

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

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

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

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

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

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

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

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

Validated by:
Hanibal C. Tayeh, Ph.D.
Nicole Leja

MADEP MCP ANALYTICAL METHOD REPORT CERTIFICATION FORM

Laboratory Name: Spectrum Analytical, Inc. - Agawam, MA	Project #: J12660
Project Location: FL Roberts - Amherst, MA	MADEP RTN [1]:

This form provides certifications for the following data set:
SB08071-01 through SB08071-04

Sample matrices:	Deionized Water Ground Water				
MCP SW-846 Methods Used	☑ 8260B	☐ 8151A	☐ 8330	☑ 6010B	☐ 7470A/1A
	☐ 8270C	☐ 8081A	☐ VPH	☐ 6020	☐ 9014M [2]
	☐ 8082	☐ 8021B	☐ EPH	☐ 7000S [3]	☐ 7196A

1 List Release Tracking Number (RTN), if known
2 M - SW-846 Method 9014 or MADEP Physiologically Available Cyanide (PAC) Method
3 S - SW-846 Methods 7000 Series List individual method and analyte

An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status

A	Were all samples received by the laboratory in a condition consistent with that described on the Chain of Custody documentation for the data set?	☑ Yes	☐ No
B	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	☑ Yes	☐ No
C	Does the data included in this report meet all the analytical requirements for "Presumptive Certainty", as described in Section 2.0 (a), (b), (c) and (d) of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑ Yes	☐ No
D	***VPH and EPH methods only***: Was the VPH or EPH method conducted without significant modifications (see Section 11.3 of respective methods)?	☐ Yes	☐ No

A response to questions E and F below is required for "Presumptive Certainty" status

E	Were all analytical QC performance standards and recommendations for the specified methods achieved?	☑ Yes	☐ No
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	☐ 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.

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Date: 3/1/2010

SB08071 CL

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: KELLY D.

Telephone #:

Project Mgr. K.D.

Invoice To: ECS-AGAWAM

P.O. No.: RQN: 0003

Project No.: 512660

Site Name: F.L. ROBERT'S

Location: AMHERST State: MA

Sampler(s): ROB H.

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= ICE 10= 11=

List preservative code below: 2 3 9 4

QA/QC Reporting Notes: (check as needed)

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= X2= X3=

G=Grab C=Composite

☒ Provide MA DEP MCP CAM Report
☐ Provide CT DEP RCP Report

QA/QC Reporting Level
☒ Standard ☐ No QC
☐ Other

State specific reporting standards:

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: BTEX + MTBE + Naphthalene by 8260B	TPH 1664	TSS	TOTAL Pb, Cu, Fe
SB08071 01	INFLUENT	2/15/10	2:15	G	GW	3	1		2	✓	✓	✓	✓
02	MID PT	2/15	2:17	G	GW	3				✓			
03	EFFLUENT	2/15	2:18	G	GW	3	1		2	✓	✓	✓	✓
04	TRIP	2/15	AM	G	DI	1				✓			

Relinquished by:	Received by:	Date:	Time:	Temp°C
Rob Haynes	Toby Dudley			
Toby Dudley		2/16/10	8:40	1.6

☐ EDD Format
☒ E-mail to Kdoherty@ecsconsult.com

☐ Ambient ☒ Iced ☒ Refrigerated ☐ Fridge temp ___ °C ☐ Freezer temp ___ °C

F.L. Roberts Amherst MA J12660.00 Phase 05		Groundwater Treatment System Remediation General Permit						
			Glassware					
Parmeters	Matrix	Point of Sample or Measurement	40-ml HCl preserved vials	500 mL preserved with HNO_3	500 mL unpreserved	1 amber liter H_2SO_4 preserved	Reportable Detction Limit	Analytical Method
TSS	GW	influent & effluent			1		5 mg/L	Method SM2540D
Total Arsenic (As)	GW	influent & effluent		1			5 ug/L	ICP
Total Copper (Cu)	GW	influent & effluent					5ug/L	
Total Iron (Fe)	GW	influent & effluent					5ug/L	
TPH	GW	influent & effluent				1	5 mg/L	Method 1664
BTEX, MtBE, naphthalene	GW	influent, midpoint, effluent	3				2 ug/L	Method 8260B for BTEX, MtBE, naphthalene only
Trip Blank	DI	in cooler	1				2 ug/L	Method 8260B for BTEX, MtBE, naphthalene only
Notes: Method Detection Limits specified								
Measure and Record the following:								
Instantaneous Flow	3.5 Gpm	system						
Total Flow	1144252 gal.	system						
pH	6.72	effluent						

Report Date:
01-Apr-10 10:22

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
588 Silver Street
Agawam, MA 01001
Attn: Kelly Doherty

Project: FL Roberts - Amherst, MA
Project #: J12660

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB09472-01	Influent	Ground Water	18-Mar-10 10:45	18-Mar-10 13:15
SB09472-02	Mid Pt	Ground Water	18-Mar-10 10:47	18-Mar-10 13:15
SB09472-03	Effluent	Ground Water	18-Mar-10 10:49	18-Mar-10 13:15
SB09472-04	Trip	Deionized Water	18-Mar-10 00:00	18-Mar-10 13:15

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
Vermont # VT-11393

Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Technical Reviewer's Initial:

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 note that this report contains 15 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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

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

CASE NARRATIVE:

The samples were received 5.4 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 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.

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 6010B

Duplicates:

1006601-DUP1 *Source: SB09472-03*

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

Iron

SW846 8260B

Spikes:

1006490-MS1 *Source: SB09472-03*

The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

Methyl tert-butyl ether

1006490-MSD1 *Source: SB09472-03*

The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

Methyl tert-butyl ether

Samples:

S002625-CCV1

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

Methyl tert-butyl ether (-21.5%)

This affected the following samples:

Effluent
Influent
Mid Pt
Trip

SW846 8260B

Samples:

SB09472-01 *Influent*

Elevated Reporting Limits due to the presence of high levels of non-target analytes.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Influent	J12660	Ground Water	18-Mar-10 10:45	18-Mar-10
SB09472-01				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS			R05									
71-43-2	Benzene	BRL		µg/l	10.0	10	SW846 8260B	26-Mar-10	27-Mar-10	JRO	1006490	
100-41-4	Ethylbenzene	11.2		µg/l	10.0	10	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	10.0	10	"	"	"	"	"	
91-20-3	Naphthalene	12.7		µg/l	10.0	10	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	10.0	10	"	"	"	"	"	
179601-23-1	m,p-Xylene	72.7		µg/l	20.0	10	"	"	"	"	"	
95-47-6	o-Xylene	26.4		µg/l	10.0	10	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*94*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*98*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*91*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*96*			*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	24-Mar-10	24-Mar-10	JK	1006269	
Total Metals by EPA 6000/7000 Series Methods												
7440-38-2	Arsenic	BRL		mg/l	0.0040	1	SW846 6010B	29-Mar-10	31-Mar-10	TBG	1006601	
7440-50-8	Copper	0.0282		mg/l	0.0050	1	"	"	"	"	"	
7439-89-6	Iron	3.58		mg/l	0.0150	1	"	"	"	"	"	
General Chemistry Parameters												
	Total Suspended Solids	24.0		mg/l	5.00	1	SM2540D	24-Mar-10	24-Mar-10	BD	1006317	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Mid Pt	J12660	Ground Water	18-Mar-10 10:47	18-Mar-10
SB09472-02				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	26-Mar-10	27-Mar-10	JRO	1006490	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	1.3		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*91*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*98*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*90*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*94*			*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Effluent SB09472-03	J12660	Ground Water	18-Mar-10 10:49	18-Mar-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	26-Mar-10	27-Mar-10	JRO	1006490	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*92*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*97*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*90*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*92*			*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	24-Mar-10	24-Mar-10	JK	1006269	
Total Metals by EPA 6000/7000 Series Methods												
7440-38-2	Arsenic	BRL		mg/l	0.0040	1	SW846 6010B	29-Mar-10	31-Mar-10	LR	1006601	
7440-50-8	Copper	BRL		mg/l	0.0050	1	"	"	31-Mar-10	"	"	
7439-89-6	Iron	0.0966		mg/l	0.0150	1	"	"	"	"	"	
General Chemistry Parameters												
	Total Suspended Solids	BRL		mg/l	5.00	1	SM2540D	24-Mar-10	24-Mar-10	BD	1006317	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Trip	J12660	Deionized Water	18-Mar-10 00:00	18-Mar-10
SB09472-04				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	26-Mar-10	27-Mar-10	JRO	1006490	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*89*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*99*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*91*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*95*			*70-130 %*		"	"	"	"	"	

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1006490 - SW846 5030 Water MS										
Blank (1006490-BLK1)					Prepared & Analyzed: 26-Mar-10					
Benzene	BRL		µg/l	1.0						
Ethylbenzene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Chlorobenzene	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*45.7*		µg/l		*50.0*		*91*	*70-130*		
Surrogate: Toluene-d8	*49.1*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*46.1*		µg/l		*50.0*		*92*	*70-130*		
Surrogate: Dibromofluoromethane	*45.4*		µg/l		*50.0*		*91*	*70-130*		
LCS (1006490-BS1)					Prepared & Analyzed: 26-Mar-10					
Benzene	21.7		µg/l		20.0		109	70-130		
Ethylbenzene	19.7		µg/l		20.0		99	70-130		
Methyl tert-butyl ether	16.2		µg/l		20.0		81	70-130		
Toluene	20.7		µg/l		20.0		104	70-130		
m,p-Xylene	40.6		µg/l		40.0		101	70-130		
o-Xylene	20.9		µg/l		20.0		104	70-130		
Surrogate: 4-Bromofluorobenzene	*48.3*		µg/l		*50.0*		*97*	*70-130*		
Surrogate: Toluene-d8	*49.8*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*45.6*		µg/l		*50.0*		*91*	*70-130*		
Surrogate: Dibromofluoromethane	*46.5*		µg/l		*50.0*		*93*	*70-130*		
LCS Dup (1006490-BSD1)					Prepared & Analyzed: 26-Mar-10					
Benzene	20.8		µg/l		20.0		104	70-130	4	25
Ethylbenzene	18.8		µg/l		20.0		94	70-130	5	25
Methyl tert-butyl ether	15.8		µg/l		20.0		79	70-130	3	25
Toluene	19.0		µg/l		20.0		95	70-130	8	25
m,p-Xylene	38.9		µg/l		40.0		97	70-130	4	25
o-Xylene	20.8		µg/l		20.0		104	70-130	0.5	25
Surrogate: 4-Bromofluorobenzene	*47.7*		µg/l		*50.0*		*95*	*70-130*		
Surrogate: Toluene-d8	*49.8*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*43.9*		µg/l		*50.0*		*88*	*70-130*		
Surrogate: Dibromofluoromethane	*45.6*		µg/l		*50.0*		*91*	*70-130*		
Matrix Spike (1006490-MS1)			**Source: SB09472-03**		Prepared: 26-Mar-10 Analyzed: 27-Mar-10					
Benzene	17.7		µg/l		20.0	BRL	89	70-130		
Ethylbenzene	18.2		µg/l		20.0	BRL	91	70-130		
Methyl tert-butyl ether	12.5	QM7	µg/l		20.0	BRL	62	70-130		
Toluene	17.7		µg/l		20.0	BRL	89	70-130		
m,p-Xylene	37.7		µg/l		40.0	BRL	94	70-130		
o-Xylene	18.9		µg/l		20.0	BRL	94	70-130		
Chlorobenzene	17.6		µg/l		20.0	BRL	88	70-130		
1,1-Dichloroethene	14.4		µg/l		20.0	BRL	72	70-130		
Trichloroethene	16.9		µg/l		20.0	BRL	84	70-130		
Surrogate: 4-Bromofluorobenzene	*49.1*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: Toluene-d8	*49.2*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*44.2*		µg/l		*50.0*		*88*	*70-130*		
Surrogate: Dibromofluoromethane	*45.8*		µg/l		*50.0*		*92*	*70-130*		
Matrix Spike Dup (1006490-MSD1)			**Source: SB09472-03**		Prepared: 26-Mar-10 Analyzed: 27-Mar-10					

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1006490 - SW846 5030 Water MS										
Matrix Spike Dup (1006490-MSD1)			**Source: SB09472-03**		Prepared: 26-Mar-10 Analyzed: 27-Mar-10					
Benzene	18.3		µg/l		20.0	BRL	91	70-130	3	30
Ethylbenzene	17.7		µg/l		20.0	BRL	89	70-130	3	30
Methyl tert-butyl ether	12.9	QM7	µg/l		20.0	BRL	64	70-130	3	30
Toluene	18.0		µg/l		20.0	BRL	90	70-130	2	30
m,p-Xylene	36.1		µg/l		40.0	BRL	90	70-130	4	30
o-Xylene	17.8		µg/l		20.0	BRL	89	70-130	6	30
Chlorobenzene	17.0		µg/l		20.0	BRL	85	70-130	3	30
1,1-Dichloroethene	14.2		µg/l		20.0	BRL	71	70-130	1	30
Trichloroethene	17.1		µg/l		20.0	BRL	86	70-130	2	30
Surrogate: 4-Bromofluorobenzene	*46.7*		µg/l		*50.0*		*93*	*70-130*		
Surrogate: Toluene-d8	*49.4*		µg/l		*50.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*44.5*		µg/l		*50.0*		*89*	*70-130*		
Surrogate: Dibromofluoromethane	*46.8*		µg/l		*50.0*		*94*	*70-130*		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1006269 - SW846 3510C										
Blank (1006269-BLK1)						Prepared & Analyzed: 24-Mar-10				
Non-polar material (SGT-HEM)	BRL		mg/l	1.0						
LCS (1006269-BS1)						Prepared & Analyzed: 24-Mar-10				
Non-polar material (SGT-HEM)	17.7		mg/l		20.7		86	83-101		

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

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1006601 - SW846 3005A										
Blank (1006601-BLK1)					Prepared: 29-Mar-10 Analyzed: 31-Mar-10					
Iron	BRL		mg/l	0.0150						
Arsenic	BRL		mg/l	0.0040						
Copper	BRL		mg/l	0.0050						
LCS (1006601-BS1)					Prepared: 29-Mar-10 Analyzed: 30-Mar-10					
Iron	1.38		mg/l	0.0150	1.25		110	85-115		
Arsenic	1.25		mg/l	0.0040	1.25		100	85-115		
Copper	1.41		mg/l	0.0050	1.25		113	85-115		
LCS Dup (1006601-BSD1)					Prepared: 29-Mar-10 Analyzed: 30-Mar-10					
Iron	1.27		mg/l	0.0150	1.25		102	85-115	8	20
Copper	1.35		mg/l	0.0050	1.25		108	85-115	4	20
Arsenic	1.21		mg/l	0.0040	1.25		97	85-115	4	20
Duplicate (1006601-DUP1)			**Source: SB09472-03**		Prepared: 29-Mar-10 Analyzed: 31-Mar-10					
Iron	0.0511	QR8	mg/l	0.0150		0.0966			62	20
Arsenic	0.0026	J	mg/l	0.0040		BRL				20
Copper	BRL		mg/l	0.0050		0.0026				20
Matrix Spike (1006601-MS1)			**Source: SB09472-01**		Prepared: 29-Mar-10 Analyzed: 31-Mar-10					
Iron	4.91		mg/l	0.0150	1.25	3.58	107	75-125		
Arsenic	1.28		mg/l	0.0040	1.25	BRL	102	75-125		
Copper	1.46		mg/l	0.0050	1.25	0.0282	114	75-125		
Matrix Spike Dup (1006601-MSD1)			**Source: SB09472-01**		Prepared: 29-Mar-10 Analyzed: 31-Mar-10					
Iron	4.75		mg/l	0.0150	1.25	3.58	94	75-125	3	20
Arsenic	1.28		mg/l	0.0040	1.25	BRL	102	75-125	0.08	20
Copper	1.44		mg/l	0.0050	1.25	0.0282	113	75-125	0.9	20
Post Spike (1006601-PS1)			**Source: SB09472-01**		Prepared: 29-Mar-10 Analyzed: 31-Mar-10					
Iron	5.00		mg/l	0.0150	1.25	3.58	114	80-120		
Arsenic	1.26		mg/l	0.0040	1.25	BRL	101	80-120		
Copper	1.44		mg/l	0.0050	1.25	0.0282	113	80-120		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1006317 - General Preparation										
Blank (1006317-BLK1)						Prepared & Analyzed: 24-Mar-10				
Total Suspended Solids	BRL		mg/l	5.00						
Blank (1006317-BLK2)						Prepared & Analyzed: 24-Mar-10				
Total Suspended Solids	BRL		mg/l	5.00						
LCS (1006317-BS1)						Prepared & Analyzed: 24-Mar-10				
Total Suspended Solids	92.0		mg/l	10.0	91.3		101	90-110		
LCS (1006317-BS2)						Prepared & Analyzed: 24-Mar-10				
Total Suspended Solids	96.0		mg/l	10.0	91.3		105	90-110		
Duplicate (1006317-DUP1)			**Source: SB09472-03**			Prepared & Analyzed: 24-Mar-10				
Total Suspended Solids	BRL		mg/l	5.00		BRL				20

Notes and Definitions

QM7	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QR8	Analyses are not controlled on RPD values from sample concentrations that are less than 5 times the reporting level. The batch is accepted based upon the difference between the sample and duplicate is less than or equal to the reporting limit.
R05	Elevated Reporting Limits due to the presence of high levels of non-target analytes.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Interpretation of Total Petroleum Hydrocarbon Report

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

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

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

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

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

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

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

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

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

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

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic

Validated by:
Hanibal C. Tayeh, Ph.D.
Nicole Leja

MassDEP Analytical Protocol Certification Form

Laboratory Name: Spectrum Analytical, Inc.	**Project #:** J12660
Project Location: FL Roberts - Amherst, MA	**RTN:**
This form provides certifications for the following data set:	SB09472-01 through SB09472-04
Matrices: Deionized Water 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	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	✓ Yes No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	✓ Yes No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	✓ Yes No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	✓ Yes No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes No Yes No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)?	✓ Yes No

Responses to questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	Yes ✓ No

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

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

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

I, 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.

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director
Date: 4/1/2010

SB09472

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-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: KELLY D.

Telephone #: 1

Project Mgr. KD

Invoice To: ECS - AGAWAM

P.O. No.: _____ RQN: 0003

Project No.: J12660

Site Name: F.L ROBERT'S

Location: AMHERST State: MA

Sampler(s): ROB A.

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= ICE 10= _____ 11= _____

List preservative code below: 2 3 9 4

QA/QC Reporting Notes: (check as needed)

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Containers:	Analyses: BTEX, MTBE + 8260B NAPTHALENE ONLY	TPH 1664	TSS	TOTAL As, Cu, Fe
B9472-01	INFLUENT	3-18-10	10:45	G	GW	3	1		2		X	X	X	X
-02	MID PT	3-18	10:47	G	GW	3					X			
-03	EFFLUENT	3-18	10:49	G	GW	3	1		2		X	X	X	X
-04	TRIP	3-18	AM	G	DI	1					X			

QA/QC Reporting Notes:
- [x] Provide MA DEP MCP CAM Report
- [ ] Provide CT DPH RCP Report

QA/QC Reporting Level
- [x] Standard
- [ ] No QC
- [ ] Other _____

State specific reporting standards: _____

* SEE ATTACHED PROTOCOLS

Relinquished by:	Received by:	Date:	Time:	Temp°C
Robert Haynes		3/18/10	1315	5.4

- [ ] EDD Format _____
- [x] E-mail to kdoherty@ecsconsult.com

- [ ] Ambient [x] Iced [ ] Refrigerated [ ] Fridge temp ____ °C [ ] Freezer temp ____ °C

F.L. Roberts Amherst MA J12660.00 Phase 05		Groundwater Treatment System Remediation General Permit						
		Glassware						
Parmeters	Matrix	Point of Sample or Measurement	40-ml HCl preserved vials	500 mL preserved with HNO_3	500 mL unpreserved	1 amber liter H_2SO_4 preserved	Reportable Detction Limit	Analytical Method
TSS	GW	influent & effluent			1		5 mg/L	Method SM2540D
Total Arsenic (As)	GW	influent & effluent		1			5 ug/L	ICP
Total Copper (Cu)	GW	influent & effluent					5ug/L	
Total Iron (Fe)	GW	influent & effluent					5ug/L	
TPH	GW	influent & effluent				1	5 mg/L	Method 1664
BTEX, MtBE, naphthalene	GW	influent, midpoint, effluent	3				2 ug/L	Method 8260B for BTEX, MtBE, naphthalene only
Trip Blank	DI	in cooler	1				2 ug/L	Method 8260B for BTEX, MtBE, naphthalene only
Notes: Method Detection Limits specified								
Measure and Record the following:								
Instantaneous Flow	3.0 GPM	system						
Total Flow	1157040 gal.	system						
pH	6.56	effluent						

Report Date:
12-May-10 14:31

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
588 Silver Street
Agawam, MA 01001
Attn: Kelly Doherty

Project: FL Roberts - 399 Northampton Rd - Amherst, MA
Project #: J12660.00 Phase 5

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB11238-01	Influent	Ground Water	26-Apr-10 10:40	26-Apr-10 12:40
SB11238-02	Effluent	Ground Water	26-Apr-10 10:45	26-Apr-10 12:40
SB11238-03	Trip Blank	Aqueous	26-Apr-10 09:10	26-Apr-10 12:40
SB11238-04	Midpoint	Ground Water	26-Apr-10 10:40	26-Apr-10 12:40

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
Vermont # VT-11393

Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Technical Reviewer's Initial:

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 note that this report contains 12 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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

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

CASE NARRATIVE:

The samples were received 3.6 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 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.

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

EPA 200.7

Samples:

SB11238-02 *Effluent*

Data confirmed with duplicate analysis.

Arsenic

SW846 8260B

Spikes:

1009480-MS1 *Source: SB11238-02*

The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

Naphthalene

1009480-MSD1 *Source: SB11238-02*

The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

Naphthalene

Samples:

S003940-CCV1

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

1,1-Dichloroethene (-24.3%)
Trichloroethene (-21.2%)

This affected the following samples:

1009480-BLK1
1009480-MS1
1009480-MSD1

SB11238-01 *Influent*

Elevated Reporting Limits due to the presence of high levels of non-target analytes.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Influent	J12660.00 Phase 5	Ground Water	26-Apr-10 10:40	26-Apr-10
SB11238-01				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS			R05									
71-43-2	Benzene	BRL		µg/l	20.0	20	SW846 8260B	05-May-10	05-May-10	JLG	1009480	
100-41-4	Ethylbenzene	73.6		µg/l	20.0	20	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	25.2		µg/l	20.0	20	"	"	"	"	"	
91-20-3	Naphthalene	58.0		µg/l	20.0	20	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	20.0	20	"	"	"	"	"	
179601-23-1	m,p-Xylene	292		µg/l	40.0	20	"	"	"	"	"	
95-47-6	o-Xylene	98.8		µg/l	20.0	20	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*103*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*103*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*96*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*97*			*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	03-May-10	04-May-10	JK	1009201	
Total Metals by EPA 200 Series Methods												
7440-38-2	Arsenic	BRL		mg/l	0.0040	1	EPA 200.7	07-May-10	10-May-10	TBG	1009706	X
7440-50-8	Copper	0.0420		mg/l	0.0050	1	"	"	"	"	"	X
7439-89-6	Iron	14.8		mg/l	0.0150	1	"	11-May-10	12-May-10	"	1009906	X
General Chemistry Parameters												
	Total Suspended Solids	30.0		mg/l	5.00	1	SM2540D	30-Apr-10	30-Apr-10	BD	1009163	X

Sample Identification
Effluent
SB11238-02

Client Project # J12660.00 Phase 5 | Matrix Ground Water | Collection Date/Time 26-Apr-10 10:45 | Received 26-Apr-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	05-May-10	05-May-10	JLG	1009480	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*97*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*102*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*105*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*96*			*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	03-May-10	04-May-10	JK	1009201	
Total Metals by EPA 200 Series Methods												
7440-38-2	Arsenic	0.0170	V11	mg/l	0.0040	1	EPA 200.7	07-May-10	10-May-10	TBG	1009706	X
7440-50-8	Copper	BRL		mg/l	0.0050	1	"	"	"	"	"	X
7439-89-6	Iron	BRL		mg/l	0.0150	1	"	11-May-10	12-May-10	"	1009906	X
General Chemistry Parameters												
	Total Suspended Solids	BRL		mg/l	5.00	1	SM2540D	30-Apr-10	30-Apr-10	BD	1009163	X

Sample Identification
Trip Blank
SB11238-03

Client Project # J12660.00 Phase 5 | Matrix Aqueous | Collection Date/Time 26-Apr-10 09:10 | Received 26-Apr-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	05-May-10	05-May-10	JLG	1009480	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*96*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*103*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*103*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*97*			*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Midpoint	J12660.00 Phase 5	Ground Water	26-Apr-10 10:40	26-Apr-10
SB11238-04				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	05-May-10	05-May-10	JLG	1009480	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*96*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*100*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*99*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*93*			*70-130 %*		"	"	"	"	"	

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1009480 - SW846 5030 Water MS										
Blank (1009480-BLK1)					Prepared & Analyzed: 05-May-10					
Benzene	BRL		µg/l	1.0						
Ethylbenzene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
Naphthalene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Chlorobenzene	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*47.5*		µg/l		*50.0*		*95*	*70-130*		
Surrogate: Toluene-d8	*50.6*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*51.2*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: Dibromofluoromethane	*48.3*		µg/l		*50.0*		*97*	*70-130*		
LCS (1009480-BS1)					Prepared & Analyzed: 05-May-10					
Benzene	18.1		µg/l		20.0		91	70-130		
Ethylbenzene	21.4		µg/l		20.0		107	70-130		
Methyl tert-butyl ether	17.6		µg/l		20.0		88	70-130		
Naphthalene	22.2		µg/l		20.0		111	70-130		
Toluene	17.2		µg/l		20.0		86	70-130		
m,p-Xylene	42.7		µg/l		40.0		107	70-130		
o-Xylene	20.4		µg/l		20.0		102	70-130		
Surrogate: 4-Bromofluorobenzene	*52.9*		µg/l		*50.0*		*106*	*70-130*		
Surrogate: Toluene-d8	*50.8*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*48.6*		µg/l		*50.0*		*97*	*70-130*		
Surrogate: Dibromofluoromethane	*47.0*		µg/l		*50.0*		*94*	*70-130*		
LCS Dup (1009480-BSD1)					Prepared & Analyzed: 05-May-10					
Benzene	18.4		µg/l		20.0		92	70-130	2	25
Ethylbenzene	23.5		µg/l		20.0		117	70-130	9	25
Methyl tert-butyl ether	17.8		µg/l		20.0		89	70-130	1	25
Naphthalene	25.5		µg/l		20.0		127	70-130	14	25
Toluene	18.4		µg/l		20.0		92	70-130	7	25
m,p-Xylene	47.2		µg/l		40.0		118	70-130	10	25
o-Xylene	23.2		µg/l		20.0		116	70-130	12	25
Surrogate: 4-Bromofluorobenzene	*51.9*		µg/l		*50.0*		*104*	*70-130*		
Surrogate: Toluene-d8	*51.3*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*48.2*		µg/l		*50.0*		*96*	*70-130*		
Surrogate: Dibromofluoromethane	*47.7*		µg/l		*50.0*		*95*	*70-130*		
Matrix Spike (1009480-MS1)			**Source: SB11238-02**		Prepared & Analyzed: 05-May-10					
Benzene	16.1		µg/l		20.0	BRL	81	70-130		
Ethylbenzene	23.2		µg/l		20.0	BRL	116	70-130		
Methyl tert-butyl ether	15.5		µg/l		20.0	BRL	77	70-130		
Naphthalene	29.3	QM7	µg/l		20.0	BRL	146	70-130		
Toluene	17.4		µg/l		20.0	BRL	87	70-130		
m,p-Xylene	47.6		µg/l		40.0	BRL	119	70-130		
o-Xylene	23.1		µg/l		20.0	BRL	115	70-130		
Surrogate: 4-Bromofluorobenzene	*52.1*		µg/l		*50.0*		*104*	*70-130*		
Surrogate: Toluene-d8	*50.6*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*47.1*		µg/l		*50.0*		*94*	*70-130*		
Surrogate: Dibromofluoromethane	*47.3*		µg/l		*50.0*		*95*	*70-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1009480 - SW846 5030 Water MS										
Matrix Spike Dup (1009480-MSD1)			**Source: SB11238-02**		Prepared & Analyzed: 05-May-10					
Benzene	16.4		µg/l		20.0	BRL	82	70-130	2	30
Ethylbenzene	22.6		µg/l		20.0	BRL	113	70-130	2	30
Methyl tert-butyl ether	16.0		µg/l		20.0	BRL	80	70-130	4	30
Naphthalene	29.4	QM7	µg/l		20.0	BRL	147	70-130	0.3	30
Toluene	17.0		µg/l		20.0	BRL	85	70-130	2	30
m,p-Xylene	47.0		µg/l		40.0	BRL	118	70-130	1	30
o-Xylene	22.7		µg/l		20.0	BRL	113	70-130	2	30
Surrogate: 4-Bromofluorobenzene	*51.4*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: Toluene-d8	*50.1*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*47.8*		µg/l		*50.0*		*96*	*70-130*		
Surrogate: Dibromofluoromethane	*47.0*		µg/l		*50.0*		*94*	*70-130*		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1009201 - SW846 3510C										
Blank (1009201-BLK1)						Prepared: 03-May-10 Analyzed: 04-May-10				
Non-polar material (SGT-HEM)	BRL		mg/l	1.0						
LCS (1009201-BS1)						Prepared: 03-May-10 Analyzed: 04-May-10				
Non-polar material (SGT-HEM)	18.3		mg/l		20.7		88	83-101		

Total Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1009706 - EPA 200 Series										
Blank (1009706-BLK1)						Prepared: 07-May-10		Analyzed: 10-May-10		
Arsenic	BRL		mg/l	0.0040						
Copper	BRL		mg/l	0.0050						
LCS (1009706-BS1)						Prepared: 07-May-10		Analyzed: 10-May-10		
Copper	1.35		mg/l	0.0050	1.25		108	85-115		
Arsenic	1.30		mg/l	0.0040	1.25		104	85-115		
Duplicate (1009706-DUP1)			**Source: SB11238-02**			Prepared: 07-May-10		Analyzed: 10-May-10		
Copper	BRL		mg/l	0.0050		BRL				20
Arsenic	0.0162		mg/l	0.0040		0.0170			5	20
Batch 1009906 - EPA 200 Series										
Blank (1009906-BLK1)						Prepared: 11-May-10		Analyzed: 12-May-10		
Iron	BRL		mg/l	0.0150						
LCS (1009906-BS1)						Prepared: 11-May-10		Analyzed: 12-May-10		
Iron	1.43		mg/l	0.0150	1.25		115	85-115		
Duplicate (1009906-DUP1)			**Source: SB11238-02**			Prepared: 11-May-10		Analyzed: 12-May-10		
Iron	0.0170		mg/l	0.0150		BRL				20

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1009163 - General Preparation										
Blank (1009163-BLK1)						Prepared & Analyzed: 30-Apr-10				
Total Suspended Solids	BRL		mg/l	5.00						
Blank (1009163-BLK2)						Prepared & Analyzed: 30-Apr-10				
Total Suspended Solids	BRL		mg/l	5.00						
LCS (1009163-BS1)						Prepared & Analyzed: 30-Apr-10				
Total Suspended Solids	84.0		mg/l	10.0	91.3		92	90-110		
LCS (1009163-BS2)						Prepared & Analyzed: 30-Apr-10				
Total Suspended Solids	82.0		mg/l	10.0	91.3		90	90-110		

Notes and Definitions

QM7	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
R05	Elevated Reporting Limits due to the presence of high levels of non-target analytes.
V11	Data confirmed with duplicate analysis.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Interpretation of Total Petroleum Hydrocarbon Report

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

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

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

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

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

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

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

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

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

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

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic

Validated by:
Hanibal C. Tayeh, Ph.D.
Kimberly Wisk
Rebecca Merz

SB: 11238 SM

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☒ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS

Telephone #: 413-789-3530

Project Mgr. Kelly Doherty

Invoice To: ECS

P.O. No.: _____ RQN: _____

Project No.: 312660.00 Phase 5

Site Name: FL Roberts

Location: 399 Northampton St Amherst State: MA

Sampler(s): Phil Serra

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= _____ 10= _____ 11= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	List preservative code below: 1	4	3	2	Analyses: TSS (SM 2540D)	Total As, Cu, Fe (ICP)	TPH (1664)	BTEX, MTBE (8260B) Naphthalene
11238-01	Influent	4/26/10	10:40A	G	GW	3	2		1					X	X	X	X
02	Effluent	4/26/10	10:45A	G	GW	3	2		1					X	X	X	X
03	Trip Blank	4/26/10	9:10A	G		1	~~2~~	~~1~~	~~1~~								X
04	Mid Point	4/26/10	10:40 A	G	GW	3											X

QA/QC Reporting Notes: (check as needed)
- ☐ Provide MA DEP MCP CAM Report
- ☐ Provide CT DPH RCP Report

QA/QC Reporting Level
☐ Standard ☐ No QC
☐ Other _____

State specific reporting standards: _____

No.

Relinquished by:	Received by:	Date:	Time:	Temp°C
		4/26/10	12:40	3.6

☐ EDD Format _____
☐ E-mail to _____

☐ Ambient ☒ Iced ☐ Refrigerated ☐ Fridge temp ____ °C ☐ Freezer temp ____ °C

Report Date:
11-Jun-10 11:50

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
588 Silver Street
Agawam, MA 01001
Attn: Kelly Doherty

Project: FLR- 399 Northampton Road - Amherst, MA
Project #: J12660.05

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB12930-01	SYSINF	Waste Water	26-May-10 14:50	27-May-10 10:45
SB12930-02	GACMID	Waste Water	26-May-10 14:40	27-May-10 10:45
SB12930-03	SYSEFF	Waste Water	26-May-10 14:30	27-May-10 10:45
SB12930-04	Trip	Deionized Water	26-May-10 00:00	27-May-10 10:45

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
Vermont # VT-11393

Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Technical Reviewer's Initial:

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 note that this report contains 9 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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

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

CASE NARRATIVE:

The samples were received 10.0 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 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.

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

SW846 8260B

Samples:

SB12930-01	*SYSINF*

Elevated Reporting Limits due to the presence of high levels of non-target analytes.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SYSINF	J12660.05	Waste Water	26-May-10 14:50	27-May-10
SB12930-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS			R05									
71-43-2	Benzene	31.6		µg/l	10.0	10	SW846 8260B	01-Jun-10	02-Jun-10	eq	1011506	
100-41-4	Ethylbenzene	298		µg/l	10.0	10	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	47.8		µg/l	10.0	10	"	"	"	"	"	
91-20-3	Naphthalene	131		µg/l	10.0	10	"	"	"	"	"	
108-88-3	Toluene	20.7		µg/l	10.0	10	"	"	"	"	"	
179601-23-1	m,p-Xylene	824		µg/l	20.0	10	"	"	"	"	"	
95-47-6	o-Xylene	191		µg/l	10.0	10	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*100*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*104*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*110*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*99*			*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	03-Jun-10	04-Jun-10	JK	1011676	
Total Metals by EPA 200 Series Methods												
7440-38-2	Arsenic	BRL		mg/l	0.0040	1	EPA 200.7	07-Jun-10	10-Jun-10	TBG	1011760	X
7440-50-8	Copper	0.0255		mg/l	0.0050	1	"	"	10-Jun-10	"	"	X
7439-89-6	Iron	13.0		mg/l	0.0250	1	"	"	"	"	"	X
General Chemistry Parameters												
	Total Suspended Solids	29.0		mg/l	5.00	1	SM2540D	02-Jun-10	02-Jun-10	BD	1011593	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
GACMID	J12660.05	Waste Water	26-May-10 14:40	27-May-10
SB12930-02				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	01-Jun-10	02-Jun-10	eq	1011506	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*90*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*99*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*110*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*101*			*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SYSEFF SB12930-03	J12660.05	Waste Water	26-May-10 14:30	27-May-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	01-Jun-10	02-Jun-10	eq	1011506	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*90*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*99*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*116*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*107*			*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	03-Jun-10	04-Jun-10	JK	1011676	
Total Metals by EPA 200 Series Methods												
7440-38-2	Arsenic	BRL		mg/l	0.0040	1	EPA 200.7	07-Jun-10	10-Jun-10	TBG	1011760	X
7440-50-8	Copper	BRL		mg/l	0.0050	1	"	"	10-Jun-10	"	"	X
7439-89-6	Iron	BRL		mg/l	0.0250	1	"	"	"	"	"	X
General Chemistry Parameters												
	Total Suspended Solids	BRL		mg/l	5.00	1	SM2540D	02-Jun-10	02-Jun-10	BD	1011593	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Trip SB12930-04	J12660.05	Deionized Water	26-May-10 00:00	27-May-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B	01-Jun-10	02-Jun-10	eq	1011506	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*89*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*101*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*117*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*99*			*70-130 %*		"	"	"	"	"	

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1011506 - SW846 5030 Water MS										
Blank (1011506-BLK1)					Prepared & Analyzed: 01-Jun-10					
Benzene	BRL		µg/l	1.0						
Ethylbenzene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
Naphthalene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Chlorobenzene	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*26.7*		µg/l		*30.0*		*89*	*70-130*		
Surrogate: Toluene-d8	*30.7*		µg/l		*30.0*		*102*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*37.1*		µg/l		*30.0*		*124*	*70-130*		
Surrogate: Dibromofluoromethane	*32.8*		µg/l		*30.0*		*109*	*70-130*		
LCS (1011506-BS1)					Prepared & Analyzed: 01-Jun-10					
Benzene	20.6		µg/l		20.0		103	70-130		
Ethylbenzene	20.9		µg/l		20.0		104	70-130		
Methyl tert-butyl ether	21.1		µg/l		20.0		105	70-130		
Naphthalene	21.2		µg/l		20.0		106	70-130		
Toluene	19.6		µg/l		20.0		98	70-130		
m,p-Xylene	44.7		µg/l		40.0		112	70-130		
o-Xylene	21.9		µg/l		20.0		110	70-130		
Surrogate: 4-Bromofluorobenzene	*31.7*		µg/l		*30.0*		*106*	*70-130*		
Surrogate: Toluene-d8	*30.6*		µg/l		*30.0*		*102*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*30.8*		µg/l		*30.0*		*103*	*70-130*		
Surrogate: Dibromofluoromethane	*29.4*		µg/l		*30.0*		*98*	*70-130*		
LCS Dup (1011506-BSD1)					Prepared & Analyzed: 01-Jun-10					
Benzene	20.9		µg/l		20.0		104	70-130	1	25
Ethylbenzene	20.0		µg/l		20.0		100	70-130	4	25
Methyl tert-butyl ether	23.5		µg/l		20.0		117	70-130	11	25
Naphthalene	22.0		µg/l		20.0		110	70-130	3	25
Toluene	19.8		µg/l		20.0		99	70-130	1	25
m,p-Xylene	42.5		µg/l		40.0		106	70-130	5	25
o-Xylene	21.2		µg/l		20.0		106	70-130	3	25
Surrogate: 4-Bromofluorobenzene	*30.1*		µg/l		*30.0*		*100*	*70-130*		
Surrogate: Toluene-d8	*30.1*		µg/l		*30.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*29.1*		µg/l		*30.0*		*97*	*70-130*		
Surrogate: Dibromofluoromethane	*29.1*		µg/l		*30.0*		*97*	*70-130*		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1011676 - SW846 3510C										
Blank (1011676-BLK1)						Prepared: 03-Jun-10 Analyzed: 04-Jun-10				
Non-polar material (SGT-HEM)	BRL		mg/l	1.0						
LCS (1011676-BS1)						Prepared: 03-Jun-10 Analyzed: 04-Jun-10				
Non-polar material (SGT-HEM)	25.8		mg/l		31.0		83	83-101		

Total Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1011760 - EPA 200 Series										
Blank (1011760-BLK1)						Prepared: 07-Jun-10 Analyzed: 10-Jun-10				
Iron	BRL		mg/l	0.0250						
Arsenic	BRL		mg/l	0.0040						
Copper	BRL		mg/l	0.0050						
LCS (1011760-BS1)						Prepared: 07-Jun-10 Analyzed: 10-Jun-10				
Iron	1.39		mg/l	0.0250	1.25		111	85-115		
Copper	1.29		mg/l	0.0050	1.25		103	85-115		
Arsenic	1.27		mg/l	0.0040	1.25		101	85-115		
Matrix Spike (1011760-MS2)			**Source: SB12930-01**			Prepared: 07-Jun-10 Analyzed: 10-Jun-10				
Iron	14.4		mg/l	0.0250	1.25	13.0	112	70-130		
Arsenic	1.30		mg/l	0.0040	1.25	BRL	104	70-130		
Copper	1.36		mg/l	0.0050	1.25	0.0255	106	70-130		
Post Spike (1011760-PS2)			**Source: SB12930-01**			Prepared: 07-Jun-10 Analyzed: 10-Jun-10				
Arsenic	1.34		mg/l	0.0040	1.25	BRL	107	85-115		
Copper	1.38		mg/l	0.0050	1.25	0.0255	108	85-115		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1011593 - General Preparation										
Blank (1011593-BLK1)						Prepared & Analyzed: 02-Jun-10				
Total Suspended Solids	BRL		mg/l	5.00						
Blank (1011593-BLK2)						Prepared & Analyzed: 02-Jun-10				
Total Suspended Solids	BRL		mg/l	5.00						
LCS (1011593-BS1)						Prepared & Analyzed: 02-Jun-10				
Total Suspended Solids	84.0		mg/l	20.0	91.3		92	90-110		
LCS (1011593-BS2)						Prepared & Analyzed: 02-Jun-10				
Total Suspended Solids	88.0		mg/l	20.0	91.3		96	90-110		
Duplicate (1011593-DUP2)			**Source: SB12930-03**			Prepared & Analyzed: 02-Jun-10				
Total Suspended Solids	5.00		mg/l	5.00		BRL				20

Notes and Definitions

R05	Elevated Reporting Limits due to the presence of high levels of non-target analytes.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Interpretation of Total Petroleum Hydrocarbon Report

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

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

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

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

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

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

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

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

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

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

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic

Validated by:
Hanibal C. Tayeh, Ph.D.
Nicole Leja

SB12930 SM

SPECTRUM ANALYTICAL, INC.
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CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☒ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS

Project Mgr.: Kelly D.

Invoice To: _____

P.O. No.: _____ RQN: 0003

Project No.: J12660.05

Site Name: FLR CARWASH

Location: 399 Notho Rd Amherst State: MA

Sampler(s): BPS

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=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= DI X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: TSS	Total Arsenic, Copper, Iron	TPH / 1664	BTEX, MTBE, EDB	Naphthalene	8260B			QA Reporting Notes: (check if needed)
12930 01	SYSINF	5/26/10	2:50	G	WW	2/3/4	3	1		2	X	X	X	X	X	X			
02	GACMID	5/26/10	2:40	G	WW	2	3							X	X	X			* See attached sheet for MDL's RDL's
03	SYSEFF	5/26/10	2:30	G	WW	2/3/4	3	1		2	X	X	X	X	X	X			
04	TRIP	5/26/10	AM	G	X1	2	1							X	X	X			

State specific reporting standards
If applicable, please list below.

☐ Provide MCP CAM Report
Were all field QC requirements met as per MADEP CAM Section 2.0?
☐ Yes ☐ No
(Response required for CAM report)

☐ Fax results when available to (_____) _____

☒ E-mail to KDorfety@ECS

EDD Format _____

Condition upon receipt ☐ Iced ☐ Ambient ☐ °C 10.0

Relinquished by:	Received by:	Date:	Time:
Brett Gsell	Danielle Walz	5/27/10	10:45

F.L. Roberts Amherst MA J12660.00 Phase 05		Groundwater Treatment System Remediation General Permit						
		Glassware						
Parmeters	Matrix	Point of Sample or Measurement	40-ml HCl preserved vials	500 mL preserved with HNO_3	500 mL unpreserved	1 amber liter H_2SO_4 preserved	Reportable Detction Limit	Analytical Method
TSS	GW	influent & effluent			1		5 mg/L	Method SM2540D
Total Arsenic (As)	GW	influent & effluent		1			5 ug/L	ICP
Total Copper (Cu)	GW	influent & effluent					5ug/L	
Total Iron (Fe)	GW	influent & effluent					5ug/L	
TPH	GW	influent & effluent				1	5 mg/L	Method 1664
BTEX, MtBE, naphthalene	GW	influent, midpoint, effluent	3				2 ug/L	Method 8260B for BTEX, MtBE, naphthalene only
Trip Blank	DI	in cooler	1				2 ug/L	Method 8260B for BTEX, MtBE, naphthalene only
Notes: Method Detection Limits specified								
Measure and Record the following:								
Instantaneous Flow	3.6	system						
Total Flow		system	1,179,660 gallons					
pH	6.65	effluent						

Report Date:
06-Jul-10 10:52

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
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HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
588 Silver Street
Agawam, MA 01001
Attn: Kelly Doherty

Project: FL Roberts - Albany St - MA
Project #: J12660

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB14174-01	Influent	Ground Water	21-Jun-10 12:00	23-Jun-10 09:30
SB14174-02	Mid Pt	Ground Water	21-Jun-10 12:02	23-Jun-10 09:30
SB14174-03	Effluent	Ground Water	21-Jun-10 12:04	23-Jun-10 09:30
SB14174-04	Trip	Deionized Water	21-Jun-10 00:00	23-Jun-10 09:30

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
Vermont # VT-11393

Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Technical Reviewer's Initial:

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 note that this report contains 15 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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

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

CASE NARRATIVE:

The samples were received 2.4 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 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.

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 6010B

Duplicates:

1013394-DUP1 *Source: SB14174-03*

The RPD exceeded the QC control limits; however precision is demonstrated with acceptable RPD values for MS/MSD.

Iron

SW846 8260B/C

Samples:

S005881-CCV1

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

Methyl tert-butyl ether (-21.0%)

This affected the following samples:

1013871-BLK1
1013871-BS1
1013871-BSD1
Trip

S005915-CCV1

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

Methyl tert-butyl ether (-29.4%)

This affected the following samples:

1013887-BLK1
1013887-BS1
1013887-BSD1
Effluent
Influent
Mid Pt

SB14174-01 *Influent*

SW846 8260B/C

Samples:

SB14174-01	*Influent*

Elevated Reporting Limits due to the presence of high levels of non-target analytes.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Influent	J12660	Ground Water	21-Jun-10 12:00	23-Jun-10
SB14174-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS			R05									
71-43-2	Benzene	20.6		µg/l	10.0	10	SW846 8260B/C	30-Jun-10	01-Jul-10	eq	1013887	
100-41-4	Ethylbenzene	150		µg/l	10.0	10	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	30.7		µg/l	10.0	10	"	"	"	"	"	
91-20-3	Naphthalene	87.3		µg/l	10.0	10	"	"	"	"	"	
108-88-3	Toluene	13.5		µg/l	10.0	10	"	"	"	"	"	
179601-23-1	m,p-Xylene	476		µg/l	20.0	10	"	"	"	"	"	
95-47-6	o-Xylene	132		µg/l	10.0	10	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*107*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*97*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*80*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*104*			*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	24-Jun-10	28-Jun-10	JK	1013357	
Total Metals by EPA 6000/7000 Series Methods												
7440-38-2	Arsenic	BRL		mg/l	0.0040	1	SW846 6010B	24-Jun-10	01-Jul-10	TBG/J	1013394	
7440-50-8	Copper	0.0882		mg/l	0.0050	1	"	"	"	"	"	
7439-89-6	Iron	16.4		mg/l	0.0150	1	"	"	"	"	"	
General Chemistry Parameters												
	Total Suspended Solids	35.0		mg/l	5.00	1	SM2540D	23-Jun-10	23-Jun-10	BD	1013336	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Mid Pt	J12660	Ground Water	21-Jun-10 12:02	23-Jun-10
SB14174-02				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	30-Jun-10	01-Jul-10	eq	1013887	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*105*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*96*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*75*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*102*			*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Effluent	J12660	Ground Water	21-Jun-10 12:04	23-Jun-10
SB14174-03				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	30-Jun-10	01-Jul-10	eq	1013887	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*105*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*96*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*76*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*101*			*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	24-Jun-10	28-Jun-10	JK	1013357	
Total Metals by EPA 6000/7000 Series Methods												
7440-38-2	Arsenic	BRL		mg/l	0.0040	1	SW846 6010B	24-Jun-10	01-Jul-10	TBG/J	1013394	
7440-50-8	Copper	BRL		mg/l	0.0050	1	"	"	"	"	"	
7439-89-6	Iron	0.0396		mg/l	0.0150	1	"	"	"	"	"	
General Chemistry Parameters												
	Total Suspended Solids	BRL		mg/l	5.00	1	SM2540D	23-Jun-10	23-Jun-10	BD	1013336	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Trip	J12660	Deionized Water	21-Jun-10 00:00	23-Jun-10
SB14174-04				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	30-Jun-10	30-Jun-10	eq	1013871	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*106*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*96*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*75*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*100*			*70-130 %*		"	"	"	"	"	

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1013871 - SW846 5030 Water MS										
Blank (1013871-BLK1)					Prepared & Analyzed: 30-Jun-10					
Benzene	BRL		µg/l	1.0						
Ethylbenzene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
Naphthalene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Chlorobenzene	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*30.8*		µg/l		*30.0*		*102*	*70-130*		
Surrogate: Toluene-d8	*29.4*		µg/l		*30.0*		*98*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*22.7*		µg/l		*30.0*		*76*	*70-130*		
Surrogate: Dibromofluoromethane	*31.2*		µg/l		*30.0*		*104*	*70-130*		
LCS (1013871-BS1)					Prepared & Analyzed: 30-Jun-10					
Benzene	18.3		µg/l		20.0		92	70-130		
Ethylbenzene	19.8		µg/l		20.0		99	70-130		
Methyl tert-butyl ether	15.2		µg/l		20.0		76	70-130		
Naphthalene	21.6		µg/l		20.0		108	70-130		
Toluene	19.0		µg/l		20.0		95	70-130		
m,p-Xylene	41.9		µg/l		40.0		105	70-130		
o-Xylene	20.7		µg/l		20.0		104	70-130		
Surrogate: 4-Bromofluorobenzene	*30.2*		µg/l		*30.0*		*101*	*70-130*		
Surrogate: Toluene-d8	*28.9*		µg/l		*30.0*		*96*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*22.2*		µg/l		*30.0*		*74*	*70-130*		
Surrogate: Dibromofluoromethane	*30.8*		µg/l		*30.0*		*103*	*70-130*		
LCS Dup (1013871-BSD1)					Prepared & Analyzed: 30-Jun-10					
Benzene	19.3		µg/l		20.0		96	70-130	5	25
Ethylbenzene	20.1		µg/l		20.0		101	70-130	2	25
Methyl tert-butyl ether	16.6		µg/l		20.0		83	70-130	9	25
Naphthalene	22.3		µg/l		20.0		111	70-130	3	25
Toluene	19.2		µg/l		20.0		96	70-130	0.9	25
m,p-Xylene	42.4		µg/l		40.0		106	70-130	1	25
o-Xylene	21.2		µg/l		20.0		106	70-130	2	25
Surrogate: 4-Bromofluorobenzene	*30.1*		µg/l		*30.0*		*100*	*70-130*		
Surrogate: Toluene-d8	*28.8*		µg/l		*30.0*		*96*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*27.1*		µg/l		*30.0*		*90*	*70-130*		
Surrogate: Dibromofluoromethane	*31.4*		µg/l		*30.0*		*105*	*70-130*		
Batch 1013887 - SW846 5030 Water MS										
Blank (1013887-BLK1)					Prepared & Analyzed: 30-Jun-10					
Benzene	BRL		µg/l	1.0						
Ethylbenzene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
Naphthalene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Chlorobenzene	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1013887 - SW846 5030 Water MS										
Blank (1013887-BLK1)						Prepared & Analyzed: 30-Jun-10				
Surrogate: 4-Bromofluorobenzene	*31.0*		µg/l		*30.0*		*103*	*70-130*		
Surrogate: Toluene-d8	*29.0*		µg/l		*30.0*		*97*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*26.1*		µg/l		*30.0*		*87*	*70-130*		
Surrogate: Dibromofluoromethane	*31.2*		µg/l		*30.0*		*104*	*70-130*		
LCS (1013887-BS1)						Prepared & Analyzed: 30-Jun-10				
Benzene	17.7		µg/l		20.0		89	70-130		
Ethylbenzene	19.3		µg/l		20.0		96	70-130		
Methyl tert-butyl ether	14.3		µg/l		20.0		72	70-130		
Naphthalene	20.0		µg/l		20.0		100	70-130		
Toluene	18.3		µg/l		20.0		92	70-130		
m,p-Xylene	41.1		µg/l		40.0		103	70-130		
o-Xylene	20.8		µg/l		20.0		104	70-130		
Surrogate: 4-Bromofluorobenzene	*31.0*		µg/l		*30.0*		*103*	*70-130*		
Surrogate: Toluene-d8	*29.6*		µg/l		*30.0*		*98*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*26.1*		µg/l		*30.0*		*87*	*70-130*		
Surrogate: Dibromofluoromethane	*32.0*		µg/l		*30.0*		*107*	*70-130*		
LCS Dup (1013887-BSD1)						Prepared & Analyzed: 30-Jun-10				
Benzene	17.6		µg/l		20.0		88	70-130	0.5	25
Ethylbenzene	19.4		µg/l		20.0		97	70-130	0.7	25
Methyl tert-butyl ether	15.0		µg/l		20.0		75	70-130	4	25
Naphthalene	21.8		µg/l		20.0		109	70-130	9	25
Toluene	18.2		µg/l		20.0		91	70-130	0.7	25
m,p-Xylene	41.8		µg/l		40.0		105	70-130	2	25
o-Xylene	20.9		µg/l		20.0		104	70-130	0.1	25
Surrogate: 4-Bromofluorobenzene	*31.0*		µg/l		*30.0*		*103*	*70-130*		
Surrogate: Toluene-d8	*29.4*		µg/l		*30.0*		*98*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*23.0*		µg/l		*30.0*		*77*	*70-130*		
Surrogate: Dibromofluoromethane	*31.2*		µg/l		*30.0*		*104*	*70-130*		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1013357 - SW846 3510C										
Blank (1013357-BLK1)						Prepared: 24-Jun-10 Analyzed: 28-Jun-10				
Non-polar material (SGT-HEM)	BRL		mg/l	1.0						
LCS (1013357-BS1)						Prepared: 24-Jun-10 Analyzed: 28-Jun-10				
Non-polar material (SGT-HEM)	25.9		mg/l		31.0		84	83-101		

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

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1013394 - SW846 3005A										
Blank (1013394-BLK1)					Prepared: 24-Jun-10 Analyzed: 01-Jul-10					
Iron	BRL		mg/l	0.0150						
Arsenic	BRL		mg/l	0.0040						
Copper	BRL		mg/l	0.0050						
LCS (1013394-BS1)					Prepared: 24-Jun-10 Analyzed: 01-Jul-10					
Iron	1.41		mg/l	0.0150	1.25		113	85-115		
Copper	1.36		mg/l	0.0050	1.25		109	85-115		
Arsenic	1.26		mg/l	0.0040	1.25		101	85-115		
LCS Dup (1013394-BSD1)					Prepared: 24-Jun-10 Analyzed: 01-Jul-10					
Iron	1.38		mg/l	0.0150	1.25		110	85-115	2	20
Arsenic	1.27		mg/l	0.0040	1.25		101	85-115	0.3	20
Copper	1.36		mg/l	0.0050	1.25		109	85-115	0.3	20
Duplicate (1013394-DUP1)			**Source: SB14174-03**		Prepared: 24-Jun-10 Analyzed: 01-Jul-10					
Iron	0.0668	QR6	mg/l	0.0150		0.0396			51	20
Copper	BRL		mg/l	0.0050		BRL				20
Arsenic	BRL		mg/l	0.0040		BRL				20

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1013336 - General Preparation										
Blank (1013336-BLK1)						Prepared & Analyzed: 23-Jun-10				
Total Suspended Solids	BRL		mg/l	5.00						
Blank (1013336-BLK2)						Prepared & Analyzed: 23-Jun-10				
Total Suspended Solids	BRL		mg/l	5.00						
LCS (1013336-BS1)						Prepared & Analyzed: 23-Jun-10				
Total Suspended Solids	90.0		mg/l	10.0	91.3		99	90-110		
LCS (1013336-BS2)						Prepared & Analyzed: 23-Jun-10				
Total Suspended Solids	86.0		mg/l	10.0	91.3		94	90-110		

Notes and Definitions

QR6	The RPD exceeded the QC control limits; however precision is demonstrated with acceptable RPD values for MS/MSD.
R05	Elevated Reporting Limits due to the presence of high levels of non-target analytes.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Interpretation of Total Petroleum Hydrocarbon Report

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

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

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

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

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

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

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

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

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

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

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic

Validated by:
Hanibal C. Tayeh, Ph.D.
Nicole Leja

MassDEP Analytical Protocol Certification Form

Laboratory Name: Spectrum Analytical, Inc.	**Project #:** J12660
Project Location: FL Roberts - Albany St - MA	**RTN:**
This form provides certifications for the following data set:	SB14174-01 through SB14174-04
Matrices: Deionized Water 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	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	✓ Yes No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	✓ Yes No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	✓ Yes No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	✓ Yes No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes No Yes No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)?	✓ Yes No

Responses to questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	Yes ✓ No

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

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

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

I, 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.

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director
Date: 7/6/2010

SB14174 CK

SPECTRUM ANALYTICAL, INC.
Fostering
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-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: KELLY D.
Telephone #:
Project Mgr. KD.

Invoice To: ECS AGAWAM
P.O. No.: RQN: 0003

Project No.: J12660
Site Name: F.L. ROBERTS
Location: AMHERST State: MA
Sampler(s): ROB H

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= _____ 10= _____ 11= _____

List preservative code below: 2 | | 3 | | 4 | | | |

QA/QC Reporting Notes: (check as needed)

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: BTEX, MTBE + NAPTHALENE ONLY 8260B		TPH 1664	TSS	TOTAL ASFE + CU			
SB14174-01	INFLUENT	6/21/10	12:00	G	GW	3	1		2	X		X	X	X			
-02	MID PT	6/21	12:02	G	GW	3				X							
-03	EFFLUENT	6/21	12:04	G	GW	3	1		2	X		X	X	X			
-04	TRIP	6/21	AM	G	DI	1				X							

[X] Provide MA DEP MCP CAM Report
[ ] Provide CT DPH RCP Report

QA/QC Reporting Level
[X] Standard [ ] No QC
[ ] Other _____

State specific reporting standards: _____

Relinquished by:	Received by:	Date:	Time:	Temp°C
Rob Haynes		6/23/10	9:30	2.4

[ ] EDD Format _____
[ ] E-mail to _____

[ ] Ambient [X] Iced [ ] Refrigerated [ ] Fridge temp ___ °C [ ] Freezer temp ___ °C

11 Almgren Drive • Agawam, MA 01001 • 413-789-9018 • FAX 413-789-4076 • www.spectrum-analytical.com

F.L. Roberts Amherst MA J12660.00 Phase 05		Groundwater Treatment System Remediation General Permit						
			Glassware					
Parmeters	Matrix	Point of Sample or Measurement	40-ml HCl preserved vials	500 mL preserved with HNO_3	500 mL unpreserved	1 amber liter H_2SO_4 preserved	Reportable Detction Limit	Analytical Method
TSS	GW	influent & effluent			1		5 mg/L	Method SM2540D
Total Arsenic (As)	GW	influent & effluent		1			5 ug/L	ICP
Total Copper (Cu)	GW	influent & effluent					5ug/L	
Total Iron (Fe)	GW	influent & effluent					5ug/L	
TPH	GW	influent & effluent				1	5 mg/L	Method 1664
BTEX, MtBE, naphthalene	GW	influent, midpoint, effluent	3				2 ug/L	Method 8260B for BTEX, MtBE, naphthalene only
Trip Blank	DI	in cooler	1				2 ug/L	Method 8260B for BTEX, MtBE, naphthalene only
Notes: Method Detection Limits specified								
Measure and Record the following:								
Instantaneous Flow		system						
Total Flow		system						
pH		effluent						

Report Date:
30-Sep-10 16:14

☐ Final Report
☐ Re-Issued Report
☑ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
588 Silver Street
Agawam, MA 01001
Attn: Kelly Doherty

Project: FL Roberts - Amherst, MA
Project #: J12660.94

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB15497-01	Influent	Ground Water	19-Jul-10 13:30	20-Jul-10 09:02
SB15497-02	Mid PT	Ground Water	19-Jul-10 13:32	20-Jul-10 09:02
SB15497-03	Effluent	Ground Water	19-Jul-10 13:34	20-Jul-10 09:02
SB15497-04	Trip	Ground Water	19-Jul-10 00:00	20-Jul-10 09:02

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:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Technical Reviewer's Initial:

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 note that this report contains 15 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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

CASE NARRATIVE:

The samples were received 2.9 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 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.

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.

The chain of custody requested TSS for both the Influent and Effluent samples. Due to laboratory error only the Influent sample was analyzed for this test.

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

SW846 8260B/C

Laboratory Control Samples:

1016009 BS/BSD

Methyl tert-butyl ether percent recoveries (62/63) are outside individual acceptance criteria (70-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

Effluent
Influent
Trip

1016067 BS/BSD

Methyl tert-butyl ether percent recoveries (63/63) are outside individual acceptance criteria (70-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

Mid PT

Samples:

S006962-CCV1

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

Methyl tert-butyl ether (-38.2%)

This affected the following samples:

1016009-BLK1
1016009-BS1
1016009-BSD1
Effluent
Influent
Trip

S006991-CCV1

SW846 8260B/C

Samples:

S006991-CCV1

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

Methyl tert-butyl ether (-35.7%)

This affected the following samples:

1016067-BLK1
1016067-BS1
1016067-BSD1
Mid PT

SB15497-01 *Influent*

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Ethylbenzene
m,p-Xylene
Naphthalene
o-Xylene

SB15497-01RE1 *Influent*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Influent SB15497-01	J12660.94	Ground Water	19-Jul-10 13:30	20-Jul-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	26.8		µg/l	1.0	1	SW846 8260B/C	28-Jul-10	29-Jul-10	eq	1016009	
100-41-4	Ethylbenzene	247	E	µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	32.9		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	131	E	µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	16.5		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	597	E	µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	157	E	µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*102*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*102*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*105*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*98*			*70-130 %*		"	"	"	"	"	
Re-analysis of Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS			GS1									
100-41-4	Ethylbenzene	202		µg/l	25.0	25	SW846 8260B/C	29-Jul-10	29-Jul-10	eq	1016067	
91-20-3	Naphthalene	94.8		µg/l	25.0	25	"	"	"	"	"	
179601-23-1	m,p-Xylene	554		µg/l	50.0	25	"	"	"	"	"	
95-47-6	o-Xylene	127		µg/l	25.0	25	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*96*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*100*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*100*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*98*			*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	22-Jul-10	23-Jul-10	JK	1015527	
Total Metals by EPA 6000/7000 Series Methods												
7440-38-2	Arsenic	0.0079		mg/l	0.0040	1	SW846 6010B	28-Jul-10	30-Jul-10	TBG	1016042	
7440-50-8	Copper	0.0188		mg/l	0.0050	1	"	"	29-Jul-10	"	"	
7439-89-6	Iron	17.7		mg/l	0.0150	1	"	"	"	"	"	
General Chemistry Parameters												
	Total Suspended Solids	32.0		mg/l	10.0	1	SM2540D	21-Jul-10	21-Jul-10	SJL	1015486	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Mid PT	J12660.94	Ground Water	19-Jul-10 13:32	20-Jul-10
SB15497-02				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	29-Jul-10	29-Jul-10	eq	1016067	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*93*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*99*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*112*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*94*			*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Effluent	J12660.94	Ground Water	19-Jul-10 13:34	20-Jul-10
SB15497-03				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	28-Jul-10	29-Jul-10	eq	1016009	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*100*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*97*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*102*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*96*			*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	22-Jul-10	23-Jul-10	JK	1015527	
Total Metals by EPA 6000/7000 Series Methods												
7440-38-2	Arsenic	BRL		mg/l	0.0040	1	SW846 6010B	28-Jul-10	30-Jul-10	TBG	1016042	
7440-50-8	Copper	BRL		mg/l	0.0050	1	"	"	29-Jul-10	"	"	
7439-89-6	Iron	BRL		mg/l	0.0150	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Trip	J12660.94	Ground Water	19-Jul-10 00:00	20-Jul-10
SB15497-04				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	28-Jul-10	29-Jul-10	eq	1016009	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*93*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*98*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*113*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*101*			*70-130 %*		"	"	"	"	"	

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1016009 - SW846 5030 Water MS										
Blank (1016009-BLK1)					Prepared & Analyzed: 28-Jul-10					
Benzene	BRL		µg/l	1.0						
Ethylbenzene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
Naphthalene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*28.9*		µg/l		*30.0*		*96*	*70-130*		
Surrogate: Toluene-d8	*30.0*		µg/l		*30.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*32.4*		µg/l		*30.0*		*108*	*70-130*		
Surrogate: Dibromofluoromethane	*30.9*		µg/l		*30.0*		*103*	*70-130*		
LCS (1016009-BS1)					Prepared & Analyzed: 28-Jul-10					
Benzene	20.6		µg/l		20.0		103	70-130		
Ethylbenzene	20.8		µg/l		20.0		104	70-130		
Methyl tert-butyl ether	12.4	QC2	µg/l		20.0		62	70-130		
Naphthalene	18.9		µg/l		20.0		95	70-130		
Toluene	19.4		µg/l		20.0		97	70-130		
m,p-Xylene	42.0		µg/l		40.0		105	70-130		
o-Xylene	21.4		µg/l		20.0		107	70-130		
Surrogate: 4-Bromofluorobenzene	*30.6*		µg/l		*30.0*		*102*	*70-130*		
Surrogate: Toluene-d8	*29.8*		µg/l		*30.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*31.2*		µg/l		*30.0*		*104*	*70-130*		
Surrogate: Dibromofluoromethane	*29.2*		µg/l		*30.0*		*97*	*70-130*		
LCS Dup (1016009-BSD1)					Prepared & Analyzed: 28-Jul-10					
Benzene	20.4		µg/l		20.0		102	70-130	1	25
Ethylbenzene	21.1		µg/l		20.0		106	70-130	1	25
Methyl tert-butyl ether	12.6	QC2	µg/l		20.0		63	70-130	2	25
Naphthalene	21.0		µg/l		20.0		105	70-130	10	25
Toluene	20.7		µg/l		20.0		104	70-130	6	25
m,p-Xylene	42.1		µg/l		40.0		105	70-130	0.2	25
o-Xylene	22.6		µg/l		20.0		113	70-130	6	25
Surrogate: 4-Bromofluorobenzene	*30.7*		µg/l		*30.0*		*102*	*70-130*		
Surrogate: Toluene-d8	*30.0*		µg/l		*30.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*30.9*		µg/l		*30.0*		*103*	*70-130*		
Surrogate: Dibromofluoromethane	*31.3*		µg/l		*30.0*		*104*	*70-130*		
Batch 1016067 - SW846 5030 Water MS										
Blank (1016067-BLK1)					Prepared & Analyzed: 29-Jul-10					
Benzene	BRL		µg/l	1.0						
Ethylbenzene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
Naphthalene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*29.8*		µg/l		*30.0*		*99*	*70-130*		
Surrogate: Toluene-d8	*30.6*		µg/l		*30.0*		*102*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*33.3*		µg/l		*30.0*		*111*	*70-130*		
Surrogate: Dibromofluoromethane	*31.4*		µg/l		*30.0*		*105*	*70-130*		
LCS (1016067-BS1)					Prepared & Analyzed: 29-Jul-10					
Benzene	20.6		µg/l		20.0		103	70-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1016067 - SW846 5030 Water MS										
LCS (1016067-BS1)					Prepared & Analyzed: 29-Jul-10					
Ethylbenzene	22.0		µg/l		20.0		110	70-130		
Methyl tert-butyl ether	12.6	QC2	µg/l		20.0		63	70-130		
Naphthalene	20.1		µg/l		20.0		100	70-130		
Toluene	20.2		µg/l		20.0		101	70-130		
m,p-Xylene	44.4		µg/l		40.0		111	70-130		
o-Xylene	22.5		µg/l		20.0		113	70-130		
Surrogate: 4-Bromofluorobenzene	*31.5*		µg/l		*30.0*		*105*	*70-130*		
Surrogate: Toluene-d8	*29.6*		µg/l		*30.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*29.8*		µg/l		*30.0*		*99*	*70-130*		
Surrogate: Dibromofluoromethane	*29.5*		µg/l		*30.0*		*98*	*70-130*		
LCS Dup (1016067-BSD1)					Prepared & Analyzed: 29-Jul-10					
Benzene	21.4		µg/l		20.0		107	70-130	4	25
Ethylbenzene	22.1		µg/l		20.0		110	70-130	0.2	25
Methyl tert-butyl ether	12.6	QC2	µg/l		20.0		63	70-130	0.7	25
Naphthalene	20.0		µg/l		20.0		100	70-130	0.4	25
Toluene	20.8		µg/l		20.0		104	70-130	3	25
m,p-Xylene	43.9		µg/l		40.0		110	70-130	1	25
o-Xylene	22.2		µg/l		20.0		111	70-130	2	25
Surrogate: 4-Bromofluorobenzene	*30.0*		µg/l		*30.0*		*100*	*70-130*		
Surrogate: Toluene-d8	*29.5*		µg/l		*30.0*		*98*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*28.3*		µg/l		*30.0*		*94*	*70-130*		
Surrogate: Dibromofluoromethane	*28.8*		µg/l		*30.0*		*96*	*70-130*		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1015527 - SW846 3510C										
Blank (1015527-BLK1)						Prepared: 22-Jul-10 Analyzed: 23-Jul-10				
Non-polar material (SGT-HEM)	BRL		mg/l	1.0						
LCS (1015527-BS1)						Prepared: 22-Jul-10 Analyzed: 23-Jul-10				
Non-polar material (SGT-HEM)	25.9		mg/l		31.0		84	83-101		

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

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1016042 - SW846 3005A										
Blank (1016042-BLK1)					Prepared: 28-Jul-10 Analyzed: 29-Jul-10					
Iron	BRL		mg/l	0.0150						
Copper	BRL		mg/l	0.0050						
Arsenic	BRL		mg/l	0.0040						
LCS (1016042-BS1)					Prepared: 28-Jul-10 Analyzed: 29-Jul-10					
Iron	1.19		mg/l	0.0150	1.25		95	85-115		
Arsenic	1.14		mg/l	0.0040	1.25		91	85-115		
Copper	1.35		mg/l	0.0050	1.25		108	85-115		
LCS Dup (1016042-BSD1)					Prepared: 28-Jul-10 Analyzed: 29-Jul-10					
Iron	1.21		mg/l	0.0150	1.25		97	85-115	2	20
Copper	1.36		mg/l	0.0050	1.25		109	85-115	1	20
Arsenic	1.16		mg/l	0.0040	1.25		93	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 1015486 - General Preparation										
Blank (1015486-BLK1)						Prepared & Analyzed: 21-Jul-10				
Total Suspended Solids	BRL		mg/l	5.00						
LCS (1015486-BS1)						Prepared & Analyzed: 21-Jul-10				
Total Suspended Solids	88.0		mg/l	10.0	91.3		96	90-110		

Notes and Definitions

E	The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).
GS1	Sample dilution required for high concentration of target analytes to be within the instrument calibration range.
QC2	Analyte out of acceptance range in QC spike but no reportable concentration present in sample.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Interpretation of Total Petroleum Hydrocarbon Report

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

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

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

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

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

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

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

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

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

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

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic

Validated by:
Hanibal C. Tayeh, Ph.D.
June O'Connor
Kimberly Wisk
Nicole Leja

MassDEP Analytical Protocol Certification Form

Laboratory Name: Spectrum Analytical, Inc.	**Project #:** J12660.94
Project Location: FL Roberts - Amherst, MA	**RTN:**
This form provides certifications for the following data set:	SB15497-01 through SB15497-04
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	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.

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director
Date: 9/30/2010

SB15497.GW

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-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: KD

Telephone #: _____

Project Mgr. KD

Invoice To: ECS Agawam

P.O. No.: _____ RQN: 0003

Project No.: J12660

Site Name: FL ROBERTS

Location: AMHERST State: MA

Sampler(s): Rob H.

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= ICE 10= _____ 11= _____

List preservative code below: 2 3 9 4

QA/QC Reporting Notes: (check as needed)

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: BTEX, MTBE + NAPTHALENE by 8260b	TPH 1664	TSS	RCRA As, Cu, Fe
SB15497-01	INFLUENT	7/19/10	1:30	G	GW	3	1		2	X	X	X	X
02	MID PT	7/19	1:32	G	GW	3				X			
03	EFFLUENT	7/19	1:34	G	GW	3	1		2	X	X	X	X
04	TRIP	7/19	AM	G	DI	1				X			

QA/QC Reporting Notes:
- [x] Provide MA DEP MCP CAM Report
- [ ] Provide CT DPH RCP Report

QA/QC Reporting Level
- [ ] Standard
- [ ] No QC
- [ ] Other _____

State specific reporting standards: _____

Relinquished by:	Received by:	Date:	Time:	Temp°C
Rob Haynes	Jody Dowling			
Jody Dowling		7/20/10	902	2.9

- [ ] EDD Format _____
- [x] E-mail to KdohertyC@ECSCONSULT.com

- [ ] Ambient [x] Iced [ ] Refrigerated [ ] Fridge temp ____ °C [ ] Freezer temp ____ °C

F.L. Roberts Amherst MA J12660.00 Phase 05		Groundwater Treatment System Remediation General Permit						
		Glassware						
Parmeters	Matrix	Point of Sample or Measurement	40-ml HCl preserved vials	500 mL preserved with HNO_3	500 mL unpreserved	1 amber liter H_2SO_4 preserved	Reportable Detction Limit	Analytical Method
TSS	GW	influent & effluent			1		5 mg/L	Method SM2540D
Total Arsenic (As)	GW	influent & effluent					5 ug/L	
Total Copper (Cu)	GW	influent & effluent		1			5ug/L	ICP
Total Iron (Fe)	GW	influent & effluent					5ug/L	
TPH	GW	influent & effluent				1	5 mg/L	Method 1664
BTEX, MtBE, naphthalene	GW	influent, midpoint, effluent	3				2 ug/L	Method 8260B for BTEX, MtBE, naphthalene only
Trip Blank	DI	in cooler	1				2 ug/L	Method 8260B for BTEX, MtBE, naphthalene only
Notes: Method Detection Limits specified								
Measure and Record the following:								
Instantaneous Flow		system						
Total Flow		system						
pH		effluent						

Report Date:
30-Sep-10 16:48

☐ Final Report
☐ Re-Issued Report
☑ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
588 Silver Street
Agawam, MA 01001
Attn: Kelly Doherty

Project: 399 Northampton St-Amherst, MA
Project #: J12660.00

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB16844-01	Influent	Ground Water	17-Aug-10 12:10	17-Aug-10 15:41
SB16844-02	Midpoint	Ground Water	17-Aug-10 12:20	17-Aug-10 15:41
SB16844-03	Effluent	Ground Water	17-Aug-10 12:30	17-Aug-10 15:41
SB16844-04	Trip Blank	Deionized Water	17-Aug-10 08:00	17-Aug-10 15:41

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:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Technical Reviewer's Initial:

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 note that this report contains 14 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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

CASE NARRATIVE:

The samples were received 3.1 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 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.

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.

The chain of custody requested method TPH 8100 for the Influent and Effluent samples. This method was used instead of the permit specified method 1664. The LIMS was updated on September 30, 2010 to reference method 1664 must be used in the future.

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

SW846 8260B/C

Calibration:

S007421-ICV1

Analyte percent recovery is outside individual acceptance criteria (70-130).

Methyl tert-butyl ether (220%)

This affected the following samples:

1017727-BLK1
1017727-BS1
1017727-BSD1
1017727-MS1
1017727-MSD1
1018136-BLK1
1018136-BS1
1018136-BSD1
Effluent
Influent
Midpoint
S007682-CCV1
S007858-CCV1
Trip Blank

Samples:

SB16844-01 *Influent*

Elevated Reporting Limits due to the presence of high levels of non-target analytes.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Influent	J12660.00	Ground Water	17-Aug-10 12:10	17-Aug-10
SB16844-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS			R05									
71-43-2	Benzene	20.0		µg/l	20.0	20	SW846 8260B/C	25-Aug-10	25-Aug-10	JLG	1018136	
100-41-4	Ethylbenzene	187		µg/l	20.0	20	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	51.4		µg/l	20.0	20	"	"	"	"	"	
91-20-3	Naphthalene	91.6		µg/l	20.0	20	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	20.0	20	"	"	"	"	"	
179601-23-1	m,p-Xylene	418		µg/l	40.0	20	"	"	"	"	"	
95-47-6	o-Xylene	95.0		µg/l	20.0	20	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*101*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*101*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*102*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*104*			*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
TPH 8100 by GC Prepared by method SW846 3510C												
8006-61-9	Gasoline	Calculated as		mg/l	0.2	1	+SW846 8100Mod.	20-Aug-10	22-Aug-10	SHM	1017777	
68476-30-2	Fuel Oil #2	BRL		mg/l	0.2	1	"	"	"	"	"	
68476-31-3	Fuel Oil #4	BRL		mg/l	0.2	1	"	"	"	"	"	
68553-00-4	Fuel Oil #6	BRL		mg/l	0.2	1	"	"	"	"	"	
M09800000	Motor Oil	BRL		mg/l	0.2	1	"	"	"	"	"	
8032-32-4	Ligroin	BRL		mg/l	0.2	1	"	"	"	"	"	
J00100000	Aviation Fuel	BRL		mg/l	0.2	1	"	"	"	"	"	
	Hydraulic Oil	BRL		mg/l	0.2	1	"	"	"	"	"	
	Dielectric Fluid	BRL		mg/l	0.2	1	"	"	"	"	"	
	Unidentified	2.3		mg/l	0.2	1	"	"	"	"	"	
	Other Oil	Calculated as		mg/l	0.2	1	"	"	"	"	"	
	Total Petroleum Hydrocarbons	2.3		mg/l	0.2	1	"	"	"	"	"	
Surrogate recoveries:												
3386-33-2	*1-Chlorooctadecane*	*126*			*40-140 %*		"	"	"	"	"	
Total Metals by EPA 6000/7000 Series Methods												
7440-38-2	Arsenic	0.0082		mg/l	0.0040	1	SW846 6010B	25-Aug-10	26-Aug-10	TBG	1018128	
7440-50-8	Copper	0.0182		mg/l	0.0050	1	"	"	"	"	"	
7439-89-6	Iron	19.3		mg/l	0.0150	1	"	"	"	"	"	
General Chemistry Parameters												
	Total Suspended Solids	52.0		mg/l	20.0	1	SM2540D	19-Aug-10	19-Aug-10	SJL	1017760	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Midpoint	J12660.00	Ground Water	17-Aug-10 12:20	17-Aug-10
SB16844-02				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	19-Aug-10	19-Aug-10	JRO	1017727	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*96*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*100*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*109*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*106*			*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Effluent	J12660.00	Ground Water	17-Aug-10 12:30	17-Aug-10
SB16844-03				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	19-Aug-10	19-Aug-10	JRO	1017727	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*97*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*100*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*109*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*103*			*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
TPH 8100 by GC Prepared by method SW846 3510C												
8006-61-9	Gasoline	BRL		mg/l	0.2	1	+SW846 8100Mod.	20-Aug-10	22-Aug-10	SHM	1017777	
68476-30-2	Fuel Oil #2	BRL		mg/l	0.2	1	"	"	"	"	"	
68476-31-3	Fuel Oil #4	BRL		mg/l	0.2	1	"	"	"	"	"	
68553-00-4	Fuel Oil #6	BRL		mg/l	0.2	1	"	"	"	"	"	
M09800000	Motor Oil	BRL		mg/l	0.2	1	"	"	"	"	"	
8032-32-4	Ligroin	BRL		mg/l	0.2	1	"	"	"	"	"	
J00100000	Aviation Fuel	BRL		mg/l	0.2	1	"	"	"	"	"	
	Hydraulic Oil	BRL		mg/l	0.2	1	"	"	"	"	"	
	Dielectric Fluid	BRL		mg/l	0.2	1	"	"	"	"	"	
	Unidentified	BRL		mg/l	0.2	1	"	"	"	"	"	
	Other Oil	BRL		mg/l	0.2	1	"	"	"	"	"	
	Total Petroleum Hydrocarbons	BRL		mg/l	0.2	1	"	"	"	"	"	
Surrogate recoveries:												
3386-33-2	*1-Chlorooctadecane*	*116*			*40-140 %*		"	"	"	"	"	
Total Metals by EPA 6000/7000 Series Methods												
7440-38-2	Arsenic	0.0166		mg/l	0.0040	1	SW846 6010B	25-Aug-10	26-Aug-10	TBG	1018128	
7440-50-8	Copper	BRL		mg/l	0.0050	1	"	"	"	"	"	
7439-89-6	Iron	0.0254		mg/l	0.0150	1	"	"	"	"	"	
General Chemistry Parameters												
	Total Suspended Solids	6.00		mg/l	5.00	1	SM2540D	19-Aug-10	19-Aug-10	SJL	1017760	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Trip Blank	J12660.00	Deionized Water	17-Aug-10 08:00	17-Aug-10
SB16844-04				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	19-Aug-10	19-Aug-10	JRO	1017727	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*97*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*100*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*103*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*103*			*70-130 %*		"	"	"	"	"	

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1017727 - SW846 5030 Water MS										
Blank (1017727-BLK1)					Prepared & Analyzed: 19-Aug-10					
Benzene	BRL		µg/l	1.0						
Ethylbenzene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
Naphthalene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*48.9*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: Toluene-d8	*49.6*		µg/l		*50.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*50.8*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: Dibromofluoromethane	*52.0*		µg/l		*50.0*		*104*	*70-130*		
LCS (1017727-BS1)					Prepared & Analyzed: 19-Aug-10					
Benzene	19.2		µg/l		20.0		96	70-130		
Ethylbenzene	21.1		µg/l		20.0		106	70-130		
Methyl tert-butyl ether	18.5		µg/l		20.0		92	70-130		
Naphthalene	16.1		µg/l		20.0		80	70-130		
Toluene	19.7		µg/l		20.0		99	70-130		
m,p-Xylene	44.7		µg/l		40.0		112	70-130		
o-Xylene	21.9		µg/l		20.0		109	70-130		
Surrogate: 4-Bromofluorobenzene	*53.4*		µg/l		*50.0*		*107*	*70-130*		
Surrogate: Toluene-d8	*50.6*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*48.9*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: Dibromofluoromethane	*51.3*		µg/l		*50.0*		*103*	*70-130*		
LCS Dup (1017727-BSD1)					Prepared & Analyzed: 19-Aug-10					
Benzene	18.7		µg/l		20.0		93	70-130	3	25
Ethylbenzene	20.4		µg/l		20.0		102	70-130	4	25
Methyl tert-butyl ether	18.8		µg/l		20.0		94	70-130	1	25
Naphthalene	16.1		µg/l		20.0		81	70-130	0.1	25
Toluene	18.8		µg/l		20.0		94	70-130	5	25
m,p-Xylene	42.0		µg/l		40.0		105	70-130	6	25
o-Xylene	21.5		µg/l		20.0		108	70-130	2	25
Surrogate: 4-Bromofluorobenzene	*52.9*		µg/l		*50.0*		*106*	*70-130*		
Surrogate: Toluene-d8	*49.8*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*48.8*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: Dibromofluoromethane	*51.0*		µg/l		*50.0*		*102*	*70-130*		
Matrix Spike (1017727-MS1)			**Source: SB16844-02**		Prepared & Analyzed: 19-Aug-10					
Benzene	19.2		µg/l		20.0	BRL	96	70-130		
Ethylbenzene	24.3		µg/l		20.0	BRL	122	70-130		
Methyl tert-butyl ether	17.9		µg/l		20.0	BRL	90	70-130		
Naphthalene	21.2		µg/l		20.0	BRL	106	70-130		
Toluene	21.2		µg/l		20.0	BRL	106	70-130		
m,p-Xylene	50.4		µg/l		40.0	BRL	126	70-130		
o-Xylene	24.9		µg/l		20.0	BRL	125	70-130		
Surrogate: 4-Bromofluorobenzene	*52.3*		µg/l		*50.0*		*105*	*70-130*		
Surrogate: Toluene-d8	*49.8*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*49.9*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: Dibromofluoromethane	*50.5*		µg/l		*50.0*		*101*	*70-130*		
Matrix Spike Dup (1017727-MSD1)			**Source: SB16844-02**		Prepared & Analyzed: 19-Aug-10					
Benzene	19.8		µg/l		20.0	BRL	99	70-130	3	30
Ethylbenzene	24.8		µg/l		20.0	BRL	124	70-130	2	30

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1017727 - SW846 5030 Water MS										
Matrix Spike Dup (1017727-MSD1)			**Source: SB16844-02**		Prepared & Analyzed: 19-Aug-10					
Methyl tert-butyl ether	18.3		µg/l		20.0	BRL	92	70-130	2	30
Naphthalene	22.2		µg/l		20.0	BRL	111	70-130	5	30
Toluene	21.4		µg/l		20.0	BRL	107	70-130	0.8	30
m,p-Xylene	51.3		µg/l		40.0	BRL	128	70-130	2	30
o-Xylene	24.4		µg/l		20.0	BRL	122	70-130	2	30
Surrogate: 4-Bromofluorobenzene	*53.3*		µg/l		*50.0*		*107*	*70-130*		
Surrogate: Toluene-d8	*49.5*		µg/l		*50.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*51.8*		µg/l		*50.0*		*104*	*70-130*		
Surrogate: Dibromofluoromethane	*51.4*		µg/l		*50.0*		*103*	*70-130*		
Batch 1018136 - SW846 5030 Water MS										
Blank (1018136-BLK1)					Prepared & Analyzed: 25-Aug-10					
Benzene	BRL		µg/l	1.0						
Ethylbenzene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
Naphthalene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*47.8*		µg/l		*50.0*		*96*	*70-130*		
Surrogate: Toluene-d8	*49.8*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*54.5*		µg/l		*50.0*		*109*	*70-130*		
Surrogate: Dibromofluoromethane	*52.1*		µg/l		*50.0*		*104*	*70-130*		
LCS (1018136-BS1)					Prepared & Analyzed: 25-Aug-10					
Benzene	20.3		µg/l		20.0		102	70-130		
Ethylbenzene	22.7		µg/l		20.0		114	70-130		
Methyl tert-butyl ether	20.5		µg/l		20.0		103	70-130		
Naphthalene	18.2		µg/l		20.0		91	70-130		
Toluene	20.7		µg/l		20.0		103	70-130		
m,p-Xylene	47.8		µg/l		40.0		119	70-130		
o-Xylene	23.7		µg/l		20.0		118	70-130		
Surrogate: 4-Bromofluorobenzene	*53.9*		µg/l		*50.0*		*108*	*70-130*		
Surrogate: Toluene-d8	*50.3*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*50.1*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: Dibromofluoromethane	*51.6*		µg/l		*50.0*		*103*	*70-130*		
LCS Dup (1018136-BSD1)					Prepared & Analyzed: 25-Aug-10					
Benzene	18.9		µg/l		20.0		95	70-130	7	25
Ethylbenzene	20.8		µg/l		20.0		104	70-130	9	25
Methyl tert-butyl ether	20.0		µg/l		20.0		100	70-130	3	25
Naphthalene	17.4		µg/l		20.0		87	70-130	4	25
Toluene	19.2		µg/l		20.0		96	70-130	8	25
m,p-Xylene	42.9		µg/l		40.0		107	70-130	11	25
o-Xylene	21.1		µg/l		20.0		106	70-130	11	25
Surrogate: 4-Bromofluorobenzene	*51.5*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: Toluene-d8	*49.1*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*51.1*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: Dibromofluoromethane	*50.6*		µg/l		*50.0*		*101*	*70-130*		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1017777 - SW846 3510C										
Blank (1017777-BLK1)					Prepared & Analyzed: 20-Aug-10					
Gasoline	BRL		mg/l	0.1						
Fuel Oil #2	BRL		mg/l	0.1						
Fuel Oil #4	BRL		mg/l	0.1						
Fuel Oil #6	BRL		mg/l	0.1						
Motor Oil	BRL		mg/l	0.1						
Ligroin	BRL		mg/l	0.1						
Aviation Fuel	BRL		mg/l	0.1						
Hydraulic Oil	BRL		mg/l	0.1						
Dielectric Fluid	BRL		mg/l	0.1						
Unidentified	BRL		mg/l	0.1						
Other Oil	BRL		mg/l	0.1						
Total Petroleum Hydrocarbons	BRL		mg/l	0.1						
Surrogate: 1-Chlorooctadecane	*0.0373*		mg/l		*0.0500*		*75*	*40-140*		
LCS (1017777-BS1)					Prepared & Analyzed: 20-Aug-10					
Fuel Oil #2	9.6		mg/l	0.1	10.0		96	40-140		
Surrogate: 1-Chlorooctadecane	*0.0410*		mg/l		*0.0500*		*82*	*40-140*		
Duplicate (1017777-DUP1)			**Source: SB16844-01**		Prepared: 20-Aug-10 Analyzed: 22-Aug-10					
Gasoline	Calculated as		mg/l	0.2		alculated a				50
Fuel Oil #2	BRL		mg/l	0.2		BRL				50
Fuel Oil #4	BRL		mg/l	0.2		BRL				50
Fuel Oil #6	BRL		mg/l	0.2		BRL				50
Motor Oil	BRL		mg/l	0.2		BRL				50
Ligroin	BRL		mg/l	0.2		BRL				50
Aviation Fuel	BRL		mg/l	0.2		BRL				50
Hydraulic Oil	BRL		mg/l	0.2		BRL				50
Dielectric Fluid	BRL		mg/l	0.2		BRL				50
Unidentified	2.4		mg/l	0.2		2.3			4	50
Other Oil	Calculated as		mg/l	0.2		alculated a				50
Total Petroleum Hydrocarbons	2.4		mg/l	0.2		2.3			4	50
Surrogate: 1-Chlorooctadecane	*0.0631*		mg/l		*0.0521*		*121*	*40-140*		

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

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1018128 - SW846 3005A										
Blank (1018128-BLK1)					Prepared: 25-Aug-10 Analyzed: 26-Aug-10					
Iron	BRL		mg/l	0.0150						
Arsenic	BRL		mg/l	0.0040						
Copper	BRL		mg/l	0.0050						
LCS (1018128-BS1)					Prepared: 25-Aug-10 Analyzed: 26-Aug-10					
Iron	1.19		mg/l	0.0150	1.25		95	85-115		
Arsenic	1.26		mg/l	0.0040	1.25		101	85-115		
Copper	1.34		mg/l	0.0050	1.25		107	85-115		
LCS Dup (1018128-BSD1)					Prepared: 25-Aug-10 Analyzed: 26-Aug-10					
Iron	1.20		mg/l	0.0150	1.25		96	85-115	0.3	20
Arsenic	1.28		mg/l	0.0040	1.25		102	85-115	1	20
Copper	1.35		mg/l	0.0050	1.25		108	85-115	0.4	20
Duplicate (1018128-DUP1)			**Source: SB16844-03**		Prepared: 25-Aug-10 Analyzed: 26-Aug-10					
Iron	0.0216		mg/l	0.0150		0.0254			16	20
Copper	0.0020	J	mg/l	0.0050		BRL				20
Arsenic	0.0164		mg/l	0.0040		0.0166			2	20

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1017760 - General Preparation										
Blank (1017760-BLK1)						Prepared & Analyzed: 19-Aug-10				
Total Suspended Solids	BRL		mg/l	5.00						
LCS (1017760-BS1)						Prepared & Analyzed: 19-Aug-10				
Total Suspended Solids	98.0		mg/l	10.0	91.3		107	90-110		

Notes and Definitions

R05	Elevated Reporting Limits due to the presence of high levels of non-target analytes.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Interpretation of Total Petroleum Hydrocarbon Report

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

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

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

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

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

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

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

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

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

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

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic

Validated by:
Hanibal C. Tayeh, Ph.D.
Kimberly Wisk

MassDEP Analytical Protocol Certification Form

Laboratory Name: Spectrum Analytical, Inc.	**Project #:** J12660.00
Project Location: 399 Northampton St-Amherst, MA	**RTN:**
This form provides certifications for the following data set:	SB16844-01 through SB16844-04
Matrices: Deionized Water 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	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	✓ Yes No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	✓ Yes No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes ✓ No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	✓ Yes No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes No Yes No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)?	✓ Yes No

Responses to questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	Yes ✓ No

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

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

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

I, 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.

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director
Date: 9/30/2010

SB16844

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-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS - Agawam

Telephone #: 413-789-3530
Project Mgr. Kelly Doherty

Invoice To: same (2IT)

P.O. No.: _____ RQN: 0003

Project No.: 512660.00
Site Name: 399 Northampton Road
Location: Amherst State: MA
Sampler(s): Jake

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= Ice 10= _____ 11= _____

List preservative code below: 2 | | 3 | 4 | 4 | 4 | 4

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= DI H2O X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: BTEX, MtBE + Naphthalene	TPH 8100	Total Iron	Total Arsenic	Total Copper	TSS
SB16844-01	Influent	8/17/10	12:10	G	GW	3	2		4	X	X	X	X	X	X
02	Midpoint		12:20			3				X					
03	effluent		12:30			3	2		4	X	X	X	X	X	X
04	Trip Blank		0800		X1	1				X					

QA/QC Reporting Notes: (check as needed)
- [x] Provide MA DEP MCP CAM Report
- [ ] Provide CT DPH RCP Report

QA/QC Reporting Level
- [x] Standard
- [ ] No QC
- [ ] Other _____

State specific reporting standards: _____

Number RGP Permit

Relinquished by:	Received by:	Date:	Time:	Temp°C
	Daniella Rad	8/17/10	15:41	3.1

- [x] EDD Format pdf
- [x] E-mail to KDoherty@ecsconsult.com

- [ ] Ambient [x] Iced [ ] Refrigerated [ ] Fridge temp ____ °C [ ] Freezer temp ____ °C

Report Date:
30-Sep-10 15:26

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
588 Silver Street
Agawam, MA 01001
Attn: Kelly Doherty

Project: FL Roberts - 399 Northampton Rd - Amherst, MA
Project #: J12660

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB18264-01	Influent	Ground Water	17-Sep-10 10:30	17-Sep-10 12:10
SB18264-02	Mid Pt	Ground Water	17-Sep-10 10:32	17-Sep-10 12:10
SB18264-03	Effluent	Ground Water	17-Sep-10 10:34	17-Sep-10 12:10
SB18264-04	Trip	Deionized Water	16-Sep-10 00:00	17-Sep-10 12:10

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:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Technical Reviewer's Initial:

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 note that this report contains 14 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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

CASE NARRATIVE:

The samples were received 6.0 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 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.

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 8260B/C

Calibration:

S008252-ICV1

Analyte percent recovery is outside individual acceptance criteria (70-130).

Methyl tert-butyl ether (185%)

This affected the following samples:

1020082-BLK1
1020082-BS1
1020082-BSD1
1020082-MS1
1020082-MSD1
Effluent
Influent
Mid Pt
S008705-CCV1
Trip

Samples:

SB18264-01 *Influent*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Influent	J12660	Ground Water	17-Sep-10 10:30	17-Sep-10
SB18264-01				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS			GS1									
71-43-2	Benzene	23.6		µg/l	20.0	20	SW846 8260B/C	23-Sep-10	23-Sep-10	EK/	1020082	
100-41-4	Ethylbenzene	264		µg/l	20.0	20	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	56.6		µg/l	20.0	20	"	"	"	"	"	
91-20-3	Naphthalene	101		µg/l	20.0	20	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	20.0	20	"	"	"	"	"	
179601-23-1	m,p-Xylene	533		µg/l	40.0	20	"	"	"	"	"	
95-47-6	o-Xylene	133		µg/l	20.0	20	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*104*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*93*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*101*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*97*			*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	23-Sep-10	24-Sep-10	JK	1020055	
Total Metals by EPA 200/6000 Series Methods												
	Preservation	Field Preservec		N/A		1	EPA 200/6000 methods	20-Sep-10	20-Sep-10	WGP	1019844	
Total Metals by EPA 6000/7000 Series Methods												
7440-38-2	Arsenic	0.0063		mg/l	0.0040	1	SW846 6010B	28-Sep-10	29-Sep-10	ZZZ	1020281	
7440-50-8	Copper	0.0906		mg/l	0.0050	1	"	"	29-Sep-10	"	"	
7439-89-6	Iron	32.1		mg/l	0.0150	1	"	"	"	"	"	
General Chemistry Parameters												
	Total Suspended Solids	36.0		mg/l	20.0	1	SM2540D	21-Sep-10	21-Sep-10	SJL	1019944	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Mid Pt	J12660	Ground Water	17-Sep-10 10:32	17-Sep-10
SB18264-02				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	23-Sep-10	23-Sep-10	EK/	1020082	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*101*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*95*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*102*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*95*			*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Effluent SB18264-03	J12660	Ground Water	17-Sep-10 10:34	17-Sep-10

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	23-Sep-10	23-Sep-10	EK/	1020082	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*101*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*93*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*102*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*96*			*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons												
	Non-polar material (SGT-HEM)	BRL		mg/l	1.0	1	EPA 1664 Rev. A	23-Sep-10	24-Sep-10	JK	1020055	
Total Metals by EPA 200/6000 Series Methods												
	Preservation	Field Preservec		N/A		1	EPA 200/6000 methods	20-Sep-10	20-Sep-10	WGP	1019844	
Total Metals by EPA 6000/7000 Series Methods												
7440-38-2	Arsenic	BRL		mg/l	0.0040	1	SW846 6010B	28-Sep-10	29-Sep-10	LR	1020281	
7440-50-8	Copper	0.0086		mg/l	0.0050	1	"	"	"	"	"	
7439-89-6	Iron	0.178		mg/l	0.0150	1	"	"	"	"	"	
General Chemistry Parameters												
	Total Suspended Solids	BRL		mg/l	5.00	1	SM2540D	21-Sep-10	21-Sep-10	SJL	1019944	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Trip	J12660	Deionized Water	16-Sep-10 00:00	17-Sep-10
SB18264-04				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
Volatile Organic Aromatics by SW846 8260B Prepared by method SW846 5030 Water MS												
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	23-Sep-10	23-Sep-10	EK/	1020082	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*100*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*94*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*107*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*100*			*70-130 %*		"	"	"	"	"	

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1020082 - SW846 5030 Water MS										
Blank (1020082-BLK1)					Prepared & Analyzed: 23-Sep-10					
Benzene	BRL		µg/l	1.0						
Ethylbenzene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
Naphthalene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*30.0*		µg/l		*30.0*		*100*	*70-130*		
Surrogate: Toluene-d8	*28.3*		µg/l		*30.0*		*94*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*33.9*		µg/l		*30.0*		*113*	*70-130*		
Surrogate: Dibromofluoromethane	*30.4*		µg/l		*30.0*		*101*	*70-130*		
LCS (1020082-BS1)					Prepared & Analyzed: 23-Sep-10					
Benzene	20.7		µg/l		20.0		104	70-130		
Ethylbenzene	21.3		µg/l		20.0		107	70-130		
Methyl tert-butyl ether	19.3		µg/l		20.0		97	70-130		
Naphthalene	20.8		µg/l		20.0		104	70-130		
Toluene	19.9		µg/l		20.0		100	70-130		
m,p-Xylene	42.8		µg/l		40.0		107	70-130		
o-Xylene	20.8		µg/l		20.0		104	70-130		
Surrogate: 4-Bromofluorobenzene	*30.9*		µg/l		*30.0*		*103*	*70-130*		
Surrogate: Toluene-d8	*28.6*		µg/l		*30.0*		*95*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*30.8*		µg/l		*30.0*		*103*	*70-130*		
Surrogate: Dibromofluoromethane	*29.5*		µg/l		*30.0*		*98*	*70-130*		
LCS Dup (1020082-BSD1)					Prepared & Analyzed: 23-Sep-10					
Benzene	20.3		µg/l		20.0		101	70-130	2	25
Ethylbenzene	21.6		µg/l		20.0		108	70-130	1	25
Methyl tert-butyl ether	19.5		µg/l		20.0		97	70-130	0.8	25
Naphthalene	20.1		µg/l		20.0		101	70-130	3	25
Toluene	19.9		µg/l		20.0		99	70-130	0.2	25
m,p-Xylene	42.9		µg/l		40.0		107	70-130	0.2	25
o-Xylene	21.1		µg/l		20.0		106	70-130	1	25
Surrogate: 4-Bromofluorobenzene	*30.9*		µg/l		*30.0*		*103*	*70-130*		
Surrogate: Toluene-d8	*28.3*		µg/l		*30.0*		*94*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*31.0*		µg/l		*30.0*		*103*	*70-130*		
Surrogate: Dibromofluoromethane	*29.4*		µg/l		*30.0*		*98*	*70-130*		
Matrix Spike (1020082-MS1)			**Source: SB18264-03**		Prepared & Analyzed: 23-Sep-10					
Benzene	17.4		µg/l		20.0	BRL	87	70-130		
Ethylbenzene	20.7		µg/l		20.0	BRL	104	70-130		
Methyl tert-butyl ether	19.0		µg/l		20.0	BRL	95	70-130		
Naphthalene	20.7		µg/l		20.0	BRL	104	70-130		
Toluene	18.5		µg/l		20.0	BRL	93	70-130		
m,p-Xylene	41.3		µg/l		40.0	BRL	103	70-130		
o-Xylene	20.2		µg/l		20.0	BRL	101	70-130		
Surrogate: 4-Bromofluorobenzene	*31.4*		µg/l		*30.0*		*105*	*70-130*		
Surrogate: Toluene-d8	*28.7*		µg/l		*30.0*		*96*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*32.2*		µg/l		*30.0*		*108*	*70-130*		
Surrogate: Dibromofluoromethane	*30.9*		µg/l		*30.0*		*103*	*70-130*		
Matrix Spike Dup (1020082-MSD1)			**Source: SB18264-03**		Prepared & Analyzed: 23-Sep-10					
Benzene	17.6		µg/l		20.0	BRL	88	70-130	1	30
Ethylbenzene	21.8		µg/l		20.0	BRL	109	70-130	5	30

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1020082 - SW846 5030 Water MS										
Matrix Spike Dup (1020082-MSD1)			**Source: SB18264-03**		Prepared & Analyzed: 23-Sep-10					
Methyl tert-butyl ether	19.4		µg/l		20.0	BRL	97	70-130	2	30
Naphthalene	21.9		µg/l		20.0	BRL	110	70-130	6	30
Toluene	18.7		µg/l		20.0	BRL	93	70-130	0.9	30
m,p-Xylene	44.0		µg/l		40.0	BRL	110	70-130	6	30
o-Xylene	21.0		µg/l		20.0	BRL	105	70-130	4	30
Surrogate: 4-Bromofluorobenzene	*31.2*		µg/l		*30.0*		*104*	*70-130*		
Surrogate: Toluene-d8	*28.1*		µg/l		*30.0*		*94*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*30.5*		µg/l		*30.0*		*102*	*70-130*		
Surrogate: Dibromofluoromethane	*29.4*		µg/l		*30.0*		*98*	*70-130*		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1020055 - SW846 3510C										
Blank (1020055-BLK1)						Prepared: 23-Sep-10 Analyzed: 24-Sep-10				
Non-polar material (SGT-HEM)	BRL		mg/l	1.0						
LCS (1020055-BS1)						Prepared: 23-Sep-10 Analyzed: 24-Sep-10				
Non-polar material (SGT-HEM)	25.9		mg/l		31.0		84	83-101		

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

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1020281 - SW846 3005A										
Blank (1020281-BLK1)					Prepared: 28-Sep-10 Analyzed: 29-Sep-10					
Iron	BRL		mg/l	0.0150						
Arsenic	BRL		mg/l	0.0040						
Copper	BRL		mg/l	0.0050						
LCS (1020281-BS1)					Prepared: 28-Sep-10 Analyzed: 29-Sep-10					
Iron	1.28		mg/l	0.0150	1.25		102	85-115		
Arsenic	1.28		mg/l	0.0040	1.25		102	85-115		
Copper	1.26		mg/l	0.0050	1.25		101	85-115		
LCS Dup (1020281-BSD1)					Prepared: 28-Sep-10 Analyzed: 29-Sep-10					
Iron	1.33		mg/l	0.0150	1.25		107	85-115	4	20
Copper	1.33		mg/l	0.0050	1.25		106	85-115	5	20
Arsenic	1.33		mg/l	0.0040	1.25		106	85-115	4	20
Duplicate (1020281-DUP1)			**Source: SB18264-01**		Prepared: 28-Sep-10 Analyzed: 29-Sep-10					
Iron	31.6		mg/l	0.0150		32.1			2	20
Copper	0.0844		mg/l	0.0050		0.0906			7	20
Arsenic	0.0064		mg/l	0.0040		0.0063			2	20
Matrix Spike (1020281-MS1)			**Source: SB18264-03**		Prepared: 28-Sep-10 Analyzed: 29-Sep-10					
Iron	1.48		mg/l	0.0150	1.25	0.178	104	75-125		
Copper	1.36		mg/l	0.0050	1.25	0.0086	109	75-125		
Arsenic	1.31		mg/l	0.0040	1.25	BRL	105	75-125		
Matrix Spike Dup (1020281-MSD1)			**Source: SB18264-03**		Prepared: 28-Sep-10 Analyzed: 29-Sep-10					
Iron	1.48		mg/l	0.0150	1.25	0.178	105	75-125	0.3	20
Arsenic	1.31		mg/l	0.0040	1.25	BRL	105	75-125	0.5	20
Copper	1.35		mg/l	0.0050	1.25	0.0086	107	75-125	1	20
Post Spike (1020281-PS1)			**Source: SB18264-03**		Prepared: 28-Sep-10 Analyzed: 29-Sep-10					
Iron	1.55		mg/l	0.0150	1.25	0.178	110	80-120		
Arsenic	1.37		mg/l	0.0040	1.25	BRL	109	80-120		
Copper	1.41		mg/l	0.0050	1.25	0.0086	112	80-120		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1019944 - General Preparation										
Blank (1019944-BLK1)						Prepared & Analyzed: 21-Sep-10				
Total Suspended Solids	BRL		mg/l	5.00						
Blank (1019944-BLK2)						Prepared & Analyzed: 21-Sep-10				
Total Suspended Solids	BRL		mg/l	5.00						
LCS (1019944-BS1)						Prepared & Analyzed: 21-Sep-10				
Total Suspended Solids	47.0		mg/l	5.00	45.6		103	90-110		
LCS (1019944-BS2)						Prepared & Analyzed: 21-Sep-10				
Total Suspended Solids	48.0		mg/l	5.00	45.6		105	90-110		
Duplicate (1019944-DUP2)			**Source: SB18264-03**			Prepared & Analyzed: 21-Sep-10				
Total Suspended Solids	4.00	J	mg/l	5.00		4.00			0	20

Notes and Definitions

GS1	Sample dilution required for high concentration of target analytes to be within the instrument calibration range.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Interpretation of Total Petroleum Hydrocarbon Report

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

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

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

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

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

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

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

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

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

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

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic

Validated by:
Hanibal C. Tayeh, Ph.D.
June O'Connor
Kimberly Wisk
Nicole Leja
Rebecca Merz

MassDEP Analytical Protocol Certification Form

Laboratory Name: Spectrum Analytical, Inc.	**Project #:** J12660
Project Location: FL Roberts - 399 Northampton Rd - Amherst, MA	**RTN:**
This form provides certifications for the following data set:	SB18264-01 through SB18264-04
Matrices: Deionized Water 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	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	✓ Yes No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	✓ Yes No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	✓ Yes No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	✓ Yes No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes No Yes No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)?	✓ Yes No

Responses to questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	Yes ✓ No

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

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

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

I, 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.

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director
Date: 9/30/2010

SB18264 ORC

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval. Min.24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: KELLY D.

Project Mgr.: KD

Invoice To: ECS AGAWAM

P.O. No.: _____ RQN: 0003

Project No.: J12660

Site Name: F. L. ROBERTS

Location: 399 NORTHAMPTON RD. AMHERST. State: MA.

Sampler(s): ROB H

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: BTEX, MTBE, NAPTHALENE ONLY BY 8260B	TPH 1664	TSS	TOTAL As, Cu, Fe	QA Reporting Notes: (check if needed)
SB18264-01	INFLUENT	9/17/10	10:30	G	GW	2,3	3	1		2	X	X	X	X	
02	MID PT	9/17/10	10:32	G	GW	2	3				X				SEE ATTACHED
03	EFFLUENT	9/17/10	10:34	G	GW	2,3	3	1		2	X	X	X	X	DETECTION LIMITS
04	TRIP	9/16/10	PM	G	DI	2	1				X				

State specific reporting standards
If applicable, please list below.
_____

☒ Provide MCP CAM Report
Were all field QC requirements met as per MADEP CAM Section 2.0?
☒ Yes ☐ No
(Response required for CAM report)

☐ Fax results when available to (_____) _____

☒ E-mail to KDOHERTY@ECSCONSULT.COM

EDD Format _____

Condition upon receipt ☒ Iced ☐ Ambient ☐ °C 6.0

Relinquished by:	Received by:	Date:	Time:
Rob Haynes		9/17/10	12:10

F.L. Roberts Amherst MA J12660.00 Phase 05		Groundwater Treatment System Remediation General Permit						
		Glassware						
Parmeters	Matrix	Point of Sample or Measurement	40-ml HCl preserved vials	500 mL preserved with HNO_3	500 mL unpreserved	1 amber liter H_2SO_4 preserved	Reportable Detction Limit	Analytical Method
TSS	GW	influent & effluent			1		5 mg/L	Method SM2540D
Total Arsenic (As)	GW	influent & effluent		1			5 ug/L	ICP
Total Copper (Cu)	GW	influent & effluent					5ug/L	
Total Iron (Fe)	GW	influent & effluent					5ug/L	
TPH	GW	influent & effluent				1	5 mg/L	Method 1664
BTEX, MtBE, naphthalene	GW	influent, midpoint, effluent	3				2 ug/L	Method 8260B for BTEX, MtBE, naphthalene only
Trip Blank	DI	in cooler	1				2 ug/L	Method 8260B for BTEX, MtBE, naphthalene only
Notes: Method Detection Limits specified								
Measure and Record the following:								
Instantaneous Flow	1192747	system						
Total Flow	3-6	system						
pH	7.19	effluent						