6/2/09 received
MAG910420

SIMMONS
Environmental Services, Inc.

May 29, 2009
Ref.# 090304

US Environmental Protection Agency Region I
Shelly Puleo
Industrial NPDES Permit (CIP)
1 Congress Street, Suite 1100
Boston, MA 02114-2023

Re: Remediation General Permit – Notice of Intent
Construction Excavation Dewatering – CVS Building
74-76 Swan Street, Methuen, MA 01844
MassDEP RTN's 3-28473, 3-25960, 3-26286

Dear Shelly Puleo:

On behalf of the Jackson & Swan Redevelopment LLC, Simmons Environmental Services, Inc. (SIMMONS) has prepared the following Notice of Intent of a Remediation General Permit (RGP) to begin operation of a dewatering system for installation of building foundation at 74-76 Swan Street in Methuen, MA. Based upon the need for dewatering of this area to install the building foundation as discussed in further detail herein, the subject discharge for this RGP should be classified as Category I (Petroleum Related Site Remediation), Subcategory C (Petroleum Site Containing Other Contaminants) and Category III (Contaminated Construction Dewatering), Subcategory A (General "Urban Fill" Sites). This RGP is being requested to allow for the dewatering to discharge to the adjacent storm drain system.

Background

The property is owned by Jackson & Swan Redevelopment LLC. The property was previously operated as a gasoline service station since the 1930's and a restaurant between the 1940's and 1980's. Between the early and mid 1900's the property grade was periodically raised with 5 to 9 feet of urban fill. Contaminants detected at the property that exceeded MassDEP standards consisted of lead in soil from the urban fill and petroleum in soil and groundwater from the former gasoline and fuel oil USTs and hydraulic lifts. The MassDEP was notified of each release under Release Tracking Number (RTN) 3-28473 for lead in soil and RTNs 3-25690 and 3-26286 for petroleum in soil and groundwater. The area where the building foundation is being installed is outside and upgradient of the petroleum impacted areas but within the area where lead was detected in soil. Although lead has not been detected in groundwater, this application is being submitted as a precaution if any of these contaminants are present in the dewatering activity. The property layout is shown in the enclosed Dewatering Site Plan (Figure 2).

The Town of Methuen will be contacted to determine if this dewatering activity and discharge to the storm drain system requires a separate application submittal for a Notice of Intent or Negative Determination of Applicability.

SIMMONS
Environmental Services, Inc.

Treatment System
As shown in the Dewatering Site Plan (Figure 2) and Process Flow Diagram (Figure 3), groundwater will be pumped from the foundation excavation area into a fractionalization tank, then through a bag filter and carbon treatment, and then pumped out to the storm drain system that leads to the Spickett River.

Exceedance of any EPA water samples limits is not expected. However, groundwater discharged from the fractionation tank to the storm drain system after treatment will be monitored and sampled to confirm that there is no reasonable potential for exceedance of the Appendix III limits.

ACEC and NHESP Habitats
According to review of the Massachusetts Geographic Information System (GIS) Site Scoring Map, the Spickett River is not part of the National Heritage Endangered Species Program (NHESP) habitat or Area of Critical Environmental Concern (ACEC). As shown in the NHESP list for the City of Lawrence, there are some rare species applicable to the town but not related to the Spickett River.

Taxonomic Group	Scientific Name	Common Name	MESA Status	Date
Beetle	Cicindela purpurea	Purple Tiger Beetle	SC	1923
Bird	Falco peregrinus	Peregrine Falcon	E	2006
Mussel	Alasmidonta varicosa	Brook Floater (Swollen Wedgemussel)	E	Historic
Vascular Plant	Bolboschoenus fluviatilis	River Bulrush	SC	1877
Vascular Plant	Carex typhina	Cat-tail Sedge	T	1879
Vascular Plant	Gentiana andrewsii	Andrews' Bottle Gentian	E	1885
Vascular Plant	Juncus filiformis	Thread Rush	E	1903
Vascular Plant	Ranunculus pensylvanicus	Bristly Buttercup	SC	1879
Vascular Plant	Sabatia kennedyana	Plymouth Gentian	SC	2006

Because the area of dewatering is related to MassDEP disposal site Release Tracking Number (RTN) 3-28473 and covered under the Massachusetts Contingency Plan (MCP) codified as 310 CMR 40.0000, then there is no need to apply to the state for coverage under BRP WM 12 (Remediation & Miscellaneous Contaminated Sites General Permit) and no fee to the MassDEP Division of Watershed Management is required.

213 Elm Street
Salisbury, MA 01952
Tel: 978-463-6669

SIMMONS
Environmental Services Inc

If you have any questions concerning the above-mentioned information, please do not hesitate to call.

Stephan H. Landry

Stephan H. Landry
Hydrogeologist

William A. Simmons

William A. Simmons, LSP, J.D.

cc:
Louis P. Minicucci Jr.

Attachments:
Form for Notice of Intent for General Remediation Permit
Figure 1 – Site Locus Map (USGS Quadrangle)
Figure 2 – Dewatering Site Plan
Figure 3 – Process Flow Diagram
Lab Data Summary Tables
Laboratory Reports

213 Elm Street
Salisbury, MA 01952
Tel: 978-463-6669

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

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

a) Name of **facility/site**: Jackson & Swan Redevelopment LLC		**Facility/site** address: 74-76 Swan Street	
Location of **facility/site**: longitude: 71o09'30"_ latitude:_42o43'10"_	Facility SIC code(s):	Street: 74-76 Swan Street	
b) Name of **facility/site owner:** Jackson & Swan Redevelopment LLC		Town: Methuen	
Email address of owner: lpm@mincocorp.com		State: MA	Zip: 01844	Cou
Telephone no.of facility/site **owner**: 978-499-9700				
Fax no. of facility/site **owner**: 978-499-2187		**Owner** is (check one): 1. Federal____ 2. State/Tribal____ 3. Private_✓_ 4. other, if so, describe:		
Address of **owner** (if different from site): Jackson & Swan Redevelopment LLC				
Street: 231 Sutton Street, Suite 1B				
Town: North Andover	State: MA	Zip: 01845	County: Essex	
c) Legal name of **operator**: Jackson & Swan Redevelopment LLC	**Operator** telephone no: 978-499-9700			
	Operator fax no.: 978-499-2187		**Operator** email: nbpt@mir	
Operator contact name and title: Louis P. Minicucci Jr.				
Address of **operator** (if different from owner):	Street:			
Town:	State:	Zip:	County:	

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

e) Is site/facility subject to any State permitting or other action which is causing the generation of discharge? Yes___ No ✓ If "yes," please list: 1. site identification # assigned by the state of NH or MA: 2. permit or license # assigned: 3. state agency contact information: name, location, and telephone number:	f) Is the site/facility covered by any other EPA permit, including: 1. multi-sector storm water general permit? Y___ N ✓, if Y, number: 2. phase I or II construction storm water general permit? Y ✓ N___, if Y, number: MAR10D438 3. individual NPDES permit? Y___ N ✓, if Y, number: 4. any other water quality related permit? Y___ N ✓, if Y, number:

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

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

Groundwater nearby the foundation dewatering area has been impacted by releases of petroleum (gasoline, fuel oil, hydraulic oil). Although lead has not been detected in groundwater, concentrations of lead are found in soil within the groundwater table. Groundwater from dewatering activities will be pumped through a carbon filter system to remove any potential migration and discharged to a storm drain culvert that leads to the Spickett River 3/4 mile to the south.

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, ft3/s)? Max. flow 0.0896 Average flow 0.0448 Is maximum flow a **design value**? Y___ N ✓ For average flow, include the units and appropriate notation if this value is a design value or estimate if not available.

3) Latitude and longitude of each discharge within 100 feet: pt.1:long. 71o09'30" lat. 42o43'10"; pt.2: long._____ lat._____; pt.3: long._____ lat._____; pt.4:long._____ lat._____; pt.5: long._____ lat._____; pt.6:long._____ lat._____; pt.7: long._____ lat._____; pt.8:long._____ lat._____; etc.

4) If hydrostatic testing, total volume of the discharge (gals):	5) Is the discharge intermittent ✓ or seasonal_____? Is discharge ongoing Yes ✓ No_____?__

c) Expected dates of discharge (mm/dd/yy): start 05/31/09 end 07/30/09

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

3. Contaminant information. In order to complete this section, the applicant will need to take a minimum of one sample of the untreated water and have it analyzed for **all** of the parameters listed in Appendix III. Historical data, (i.e., data taken no more than 2 years prior to the effective date of the permit) may be used if obtained pursuant to: i. Massachusetts' regulations 310 CMR 40.0000, the Massachusetts Contingency Plan ("Chapter 21E"); ii. New Hampshire's Title 50 RSA 485-A: Water Pollution and Waste Disposal or Title 50 RSA 485-C: Groundwater Protection Act; or iii. an EPA permit exclusion letter issued pursuant to 40 CFR 122.3, provided the data was analyzed with test methods that meet the requirements of this permit. Otherwise, a new sample shall be taken and analyzed.

a) Based on the analysis of the sample(s) of the untreated influent, the applicant must check the box of the sub-categories that the potential discharge falls within.

Gasoline Only	VOC Only	Primarily Metals	Urban Fill Sites ✓	Contaminated Sumps	Mixed Contaminants	Aquifer Testing
Fuel Oils (and Other Oils) only	VOC with Other Contaminants	Petroleum with Other Contaminants ✓	Listed Contaminated Sites	Contaminated Dredge Condensates	Hydrostatic Testing of Pipelines/Tanks	Well Development or Rehabilitation

b) Based on the analysis of the untreated influent, the applicant must indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional sheets as needed.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids		✓		Grab	2540	10 mg/L	unknown		unknown	
2. Total Residual Chlorine	✓									
3. Total Petroleum Hydrocarbons		✓		Grab	1664	5 mg/L	14,300		14,300	
4. Cyanide	✓									
5. Benzene	✓			Grab	8260	5 ug/L	<5		<5	
6. Toluene		✓		Grab	8260	5 ug/L	13.1		13.1	
7. Ethylbenzene	✓			Grab	8260	5 ug/L	<5		<5	
8. (m,p,o) Xylenes		✓		Grab	8260	5 ug/L	<15		<15	
9. Total BTEX[4]		✓		Grab	8260	100 ug/L	<35		<35	

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

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
10. Ethylene Dibromide [5] (1,2- Dibromo-methane)	✓									
11. Methyl-tert-Butyl Ether (MtBE)		✓			8260	70 ug/L	51.3		51.3	
12. tert-Butyl Alcohol (TBA)	✓									
13. tert-Amyl Methyl Ether (TAME)	✓									
14. Naphthalene		✓			8260	20 ug/L	58.3		58.3	
15. Carbon Tetrachloride	✓									
16. 1,4 Dichlorobenzene	✓									
17. 1,2 Dichlorobenzene	✓									
18. 1,3 Dichlorobenzene	✓									
19. 1,1 Dichloroethane	✓									
20. 1,2 Dichloroethane	✓									
21. 1,1 Dichloroethylene	✓									
22. cis-1,2 Dichloroethylene	✓									
23. Dichloromethane (Methylene Chloride)	✓									
24. Tetrachloroethylene	✓									

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

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily Value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
25. 1,1,1 Trichloroethane	✓									
26. 1,1,2 Trichloroethane	✓									
27. Trichloroethylene	✓									
28. Vinyl Chloride	✓									
29. Acetone	✓									
30. 1,4 Dioxane	✓									
31. Total Phenols	✓									
32. Pentachlorophenol	✓									
33. Total Phthalates [6] (Phthalate esthers)	✓									
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	✓									
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	✓									
a. Benzo(a) Anthracene	✓									
b. Benzo(a) Pyrene	✓									
c. Benzo(b)Fluoranthene	✓									
d. Benzo(k) Fluoranthene	✓									
e. Chrysene	✓									

[6] The sum of individual phthalate compounds.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (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)
f. Dibenzo(a,h) anthracene	✓									
g. Indeno(1,2,3-cd) Pyrene	✓									
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	✓									
h. Acenaphthene	✓									
i. Acenaphthylene	✓									
j. Anthracene	✓									
k. Benzo(ghi) Perylene	✓									
l. Fluoranthene	✓									
m. Fluorene	✓									
n. Naphthalene-	✓									
o. Phenanthrene	✓									
p. Pyrene	✓									
37. Total Polychlorinated Biphenyls (PCBs)	✓									
38. Antimony	✓									
39. Arsenic	✓									
40. Cadmium	✓									
41. Chromium III	✓									
42. Chromium VI	✓									

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
43. Copper	✓									
44. Lead		✓		Grab	7421	0.5 mg/L	<2.5		<2.5	
45. Mercury	✓			Grab						
46. Nickel	✓			Grab						
47. Selenium	✓			Grab						
48. Silver	✓			Grab						
49. Zinc	✓			Grab						
50. Iron	✓			Grab						
Other (describe):										

c) For discharges where **metals** are believed present, please fill out the following:

Step 1: Do any of the metals in the influent have a **reasonable potential** to exceed the effluent limits in Appendix III (i.e., the limits set at zero to five dilutions)? Y____ N✓	If yes, which metals?
Step 2: For any metals which have **reasonable potential** to 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? Metals:_____ DF: _____	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 "Yes," list which metals:

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

a) A description of the treatment system, including a schematic of the proposed or existing treatment system: Dewatering water is discharged to a fractionation tank						
b) Identify each applicable treatment unit (check all that apply):	Frac. tank ✓	Air stripper	Oil/water separator	Equalization tanks	Bag filter ✓	GAC filter ✓
	Chlorination	Dechlorination	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 20 Maximum flow rate of treatment system 40 Design flow rate of treatment system _____						
d) A description of chemical additives being used or planned to be used (attach MSDS sheets): None						

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

a) Identify the discharge pathway:	Direct_____	Within facility__	Storm drain ✓	River/brook ✓	Wetlands_____	Other (describe):
b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters: Storm drain system of Methuen discharges to Spickett River in Lawrence						
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 Category 5,						
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water Not known 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? Yes ✓ No____ If yes, for which pollutant(s)? Metals, Nutrients, Pathogens Is there a TMDL? Yes____ No ✓ If yes, for which pollutant(s)? Segment ID MA84A-10_2008						

6. Results of Consultation with Federal Services: Please provide the following information according to requirements of Part I.B.4 and Appendices II and VII.

a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes____ No ✓
Has any consultation with the federal services been completed ? Yes ✓ No___ or is consultation underway? Yes ____ No____
What were the results of the consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service (check one):
a "no jeopardy" opinion? ✓ or written concurrence____ on a finding that the discharges are not likely to adversely affect any endangered species or critical habitat?

b) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or site or in proximity to the discharge?
Yes_____ No ✓ Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes_____ No ✓

7. Supplemental information. :

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

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

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

Facility/Site Name: Jackson & Swan Redevelopment LLC

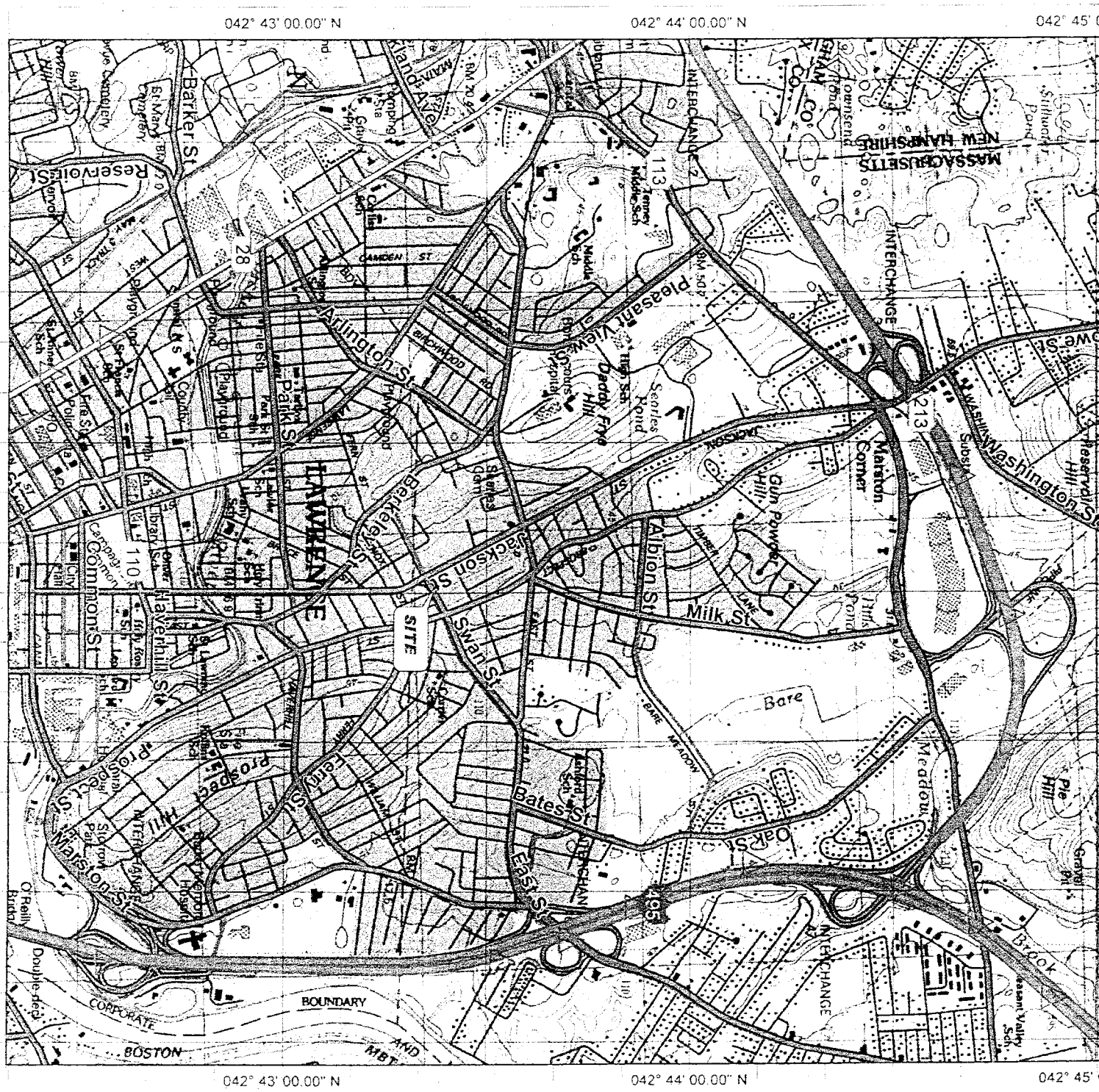
Operator signature:

Title: ~~Manager~~ Project Manager

Date:

Jackson & Swan Redevelopment LLC

Manager


042° 43' 00.00" N
042° 44' 00.00" N
042° 45'
071° 11' 00.00" W
071° 10' 00.00" W
071° 09' 00.00" W
071° 08' 00.0
Datum: NAD27
Copyright (C) 1997, Maptech, Inc.
LAWRENCE
SITE
Arlington St
Park St
Jackson St
Swan St
Albion St
Milk St
Bates St
East St
Oak St
Prospect St
Marston St
Haverhill St
Common St
Barker St
Reservoir St
Pleasant View St
Washington St
Marston Corner
Gun Powder Hill
Daddy Frye Hill
Bare Meadow
Brook
Pie Hill
MASSACHUSETTS
NEW HAMPSHIRE
INTERCHANGE
BOUNDARY
CORPORATE
BOSTON
AND
MBT
113
213
110
28
495

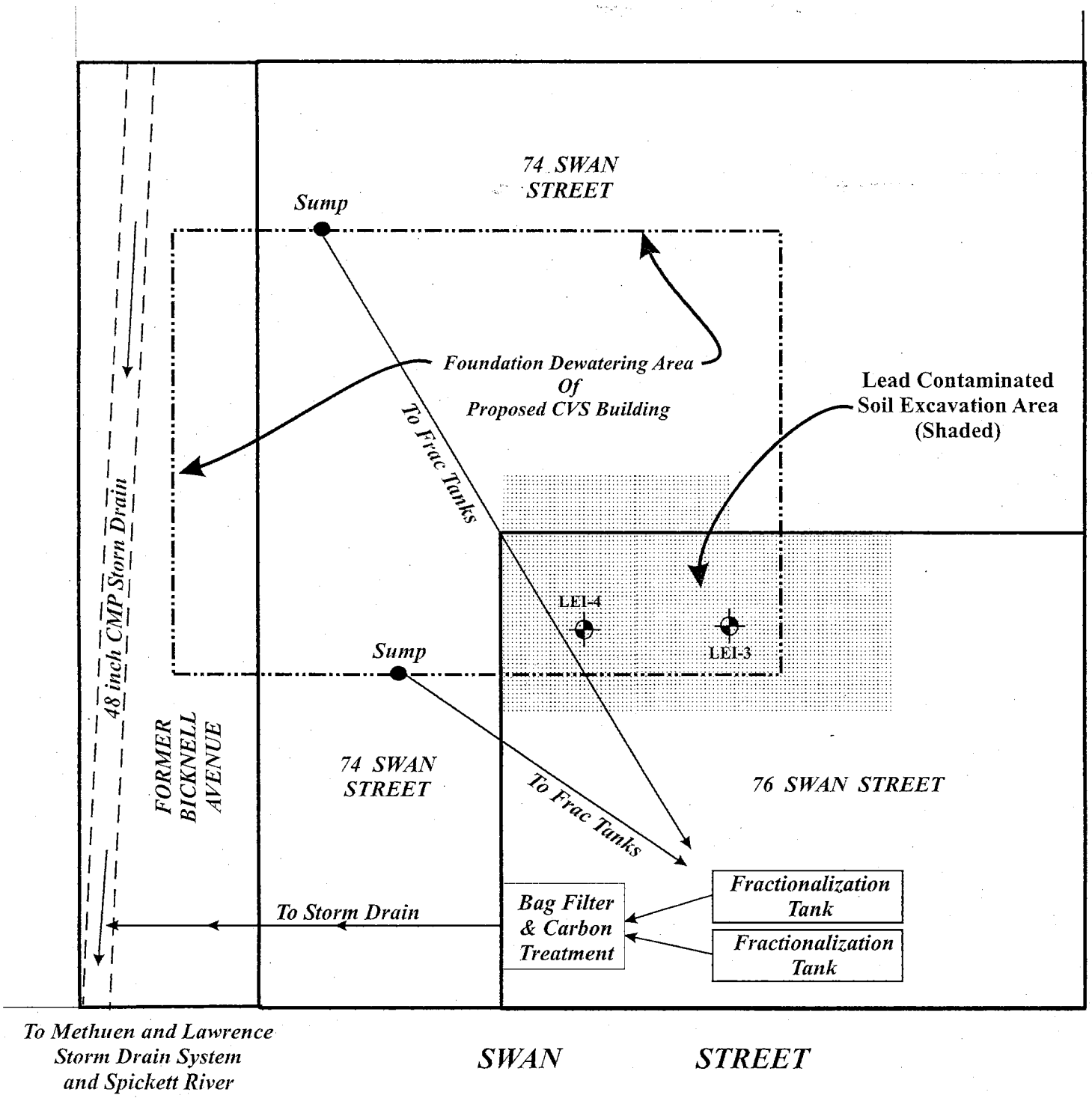
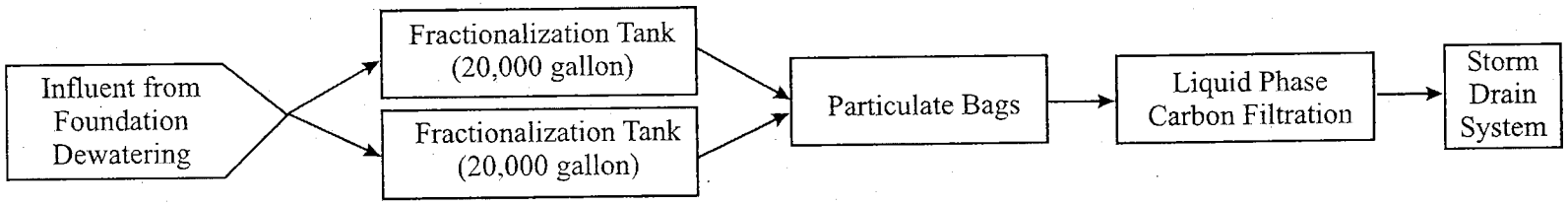

74 SWAN STREET
Sump
Foundation Dewatering Area Of Proposed CVS Building
Lead Contaminated Soil Excavation Area (Shaded)
To Frac Tanks
48 inch CMP Storm Drain
LEI-4
LEI-3
Sump
FORMER BICKNELL AVENUE
74 SWAN STREET
To Frac Tanks
76 SWAN STREET
Fractionalization Tank
Bag Filter & Carbon Treatment
Fractionalization Tank
To Storm Drain
ADELAIDE AVENUE
To Methuen and Lawrence Storm Drain System and Spickett River
SWAN STREET

FIGURE 3
PROCESS FLOW DIAGRAM
CONSTRUCTION DEWATERING SYSTEM



74-76 SWAN STREET, METHUEN, MA

Prepared By:

SIMMONS ENVIRONMENTAL SERVICES, INC.
213 Elm Street, Salisbury, MA 01952
(978) 463-6669

Date: May 2009
Project #: 090304
Drafted: SHL

Table 3

Groundwater Analytical Data - Petroleum Constituents

76 Swan Street
Methuen, Massachusetts

Parameter	MCP - Method 1 Cleanup Standards GW-2	GW-3	SAMPLING LOCATION LEH-1		LEH-2				LEH-3				LEH-4					LEH-5				LEH-6				LEH-7				LEH-8	CEA-4				CEA-6
Sampling Date			9/6/2005	1/3/2006	9/6/2005	6/5/2006	9/20/2006	1/3/2006	9/6/2005	6/5/2006	9/20/2006	1/3/2006	9/6/2005	6/5/2006	9/20/2006	1/3/2006	EPC	9/6/2005	6/5/2006	9/20/2006	1/3/2006	9/6/2005	6/5/2006	9/20/2006	1/3/2006	9/6/2005	6/5/2006	9/20/2006	1/3/2006	1/3/2006	9/6/2005	6/5/2006	9/20/2006	1/3/2006	1/3/2006
ppb - water (µg/l)																																			
C9-C18 Aliphatics	1,000	20,000	200	400	905	NT	ND (<150)	NT	NT	572	ND (<150)	ND (<200)	1,890	ND (<200)	ND (<150)	509	587.5	NT	ND (<200)	ND (<150)	ND (<200)	NT	256	ND (<150)	ND (<200)	NT	ND (<200)	ND (<150)	ND (<200)	NT	NT	ND (<200)	ND (<150)	NT	NT
C19-C36 Aliphatics	-	20,000	ND (<200)	ND (<200)	2,400	NT	ND (<150)	NT	NT	ND (<202)	ND (<150)	ND (<200)	7,500	ND (<200)	ND (<150)	3,400	2,815	NT	ND (<200)	ND (<150)	ND (<200)	NT	ND (<200)	ND (<150)	ND (<200)	NT	ND (<200)	337	ND (<200)	NT	NT	ND (<200)	ND (<150)	NT	NT
C11-C22 Aromatics	50,000	30,000	900	ND (<200)	2,900	NT	ND (<100)	NT	NT	ND (<152)	ND (<100)	ND (<200)	8,300	ND (<150)	ND (<100)	2,200	1,862.50	NT	ND (<150)	ND (<100)	ND (<200)	NT	ND (<150)	ND (<100)	ND (<200)	NT	ND (<150)	ND (<100)	ND (<200)	NT	NT	ND (<150)	ND (<100)	NT	NT
Acenaphthene	-	5,000	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
Acenaphthylene	-	3,000	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
Anthracene	-	3,000	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
Benzo(a)anthracene	-	1,000	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
Benzo(a)pyrene	-	500	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
Benzo(b)fluoranthene	-	400	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
Benzo(g,h,i)perylene	-	3,000	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
Benzo(k)fluoranthene	-	100	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
Chrysene	-	3,000	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
Dibenzo(a,h)anthracene	-	40	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
Fluoranthene	-	200	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
Fluorene	-	3,000	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
Indeno(1,2,3-cd)pyrene	-	100	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
2-Methylnaphthalene	1,000	3,000	ND (<10)	ND (<5.66)	5.7	NT	ND (<2)	NT	NT	ND (<5.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<5)	ND (<2)	ND (<5.43)	NC	NT	ND (<5)	ND (<2)	ND (<5.81)	NT	ND (<5)	ND (<2)	ND (<6.76)	NT	ND (<5)	ND (<2)	ND (<5.75)	NT	NT	ND (<5)	ND (<2)	NT	NT
Naphthalene	1,000	22,000	ND (<10)	ND (<5.66)	97.1	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
Phenanthrene	-	50	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
Pyrene	-	3,000	ND (<10)	ND (<5.66)	ND (<6.67)	NT	ND (<2)	NT	NT	ND (<10.1)	ND (<2)	ND (<6.67)	ND (<5.56)	ND (<10)	ND (<2)	ND (<5.43)	NC	NT	ND (<10)	ND (<2)	ND (<5.81)	NT	ND (<10)	ND (<2)	ND (<6.76)	NT	ND (<10)	ND (<2)	ND (<5.75)	NT	NT	ND (<10)	ND (<2)	NT	NT
ppm - water (µg/l)																																			
C9-C18 Aliphatics	1,000	4,000	ND (<75)	ND (<75)	2,260	NT	NT	160	288	NT	NT	185	ND (<75)	NT	NT	NT	NC	97.1	NT	NT	NT	NT		NT	NT	NT	NT	NT	ND (<75)	ND (<75)	NT	NT	NT	NT	ND (<75)
C19-C36 Aliphatics	1,000	20,000	41.8	ND (<25)	874	NT	NT	42.1	443	NT	NT	248	422	NT	NT	NT	NC	87.5	NT	NT	NT	NT		NT	NT	NT	NT	NT	ND (<25)	ND (<25)	NT	NT	NT	NT	36
C9-C12 Aliphatics	5,000	4,000	58.4	ND (<25)	1,780	NT	NT	85	562	NT	NT	326	378	NT	NT	NT	NC	107	NT	NT	NT	NT		NT	NT	NT	NT	NT	ND (<75)	ND (<25)	NT	NT	NT	NT	ND (<25)
C9-C10 Aromatics	2,000	10,000	ND (<5)	ND (<5)	116	NT	NT	37	ND (<5)	NT	NT	ND (<5)	ND (<5)	NT	NT	NT	NC	ND (<5)	NT	NT	NT	NT		NT	NT	NT	NT	NT	ND (<5)	ND (<5)	NT	NT	NT	NT	ND (<5)
benzene	30,000	4,000	ND (<5)	ND (<5)	55.9	NT	NT	ND (5.6)	ND (<5)	NT	NT	ND (<5)	ND (<5)	NT	NT	NT	NC	ND (<5)	NT	NT	NT	NT		NT	NT	NT	NT	NT	ND (<5)	ND (<5)	NT	NT	NT	NT	ND (<5)
Ethyl Benzene	30,000	50,000	ND (<5)	ND (<5)	34.2	NT	NT	ND (5.6)	45.2	NT	NT	51.3	ND (<5)	NT	NT	NT	NC	ND (<5)	NT	NT	NT	NT		NT	NT	NT	NT	NT	53.5	5.9	NT	NT	NT	NT	346
MTBE	50,000	50,000	6.8	ND (<5)	243	NT	NT	ND (6.9)	15.2	NT	NT	13.9	59.3	NT	NT	NT	NC	21	NT	NT	NT	NT		NT	NT	NT	NT	NT	ND (<5)	ND (<5)	NT	NT	NT	NT	12
Naphthalene	10,000	20,000	ND (<5)	ND (<5)	26.1	NT	NT	ND (5.2)	ND (<5)	NT	NT	ND (<5)	13.1	NT	NT	NT	NC	9.8	NT	NT	NT	NT		NT	NT	NT	NT	NT	ND (<5)	ND (<5)	NT	NT	NT	NT	ND (<5)
Toluene	8,000	4,000	ND (<5)	ND (<5)	14.3	NT	NT	ND (15.3)	ND (<15)	NT	NT	ND (<15)	ND (<15)	NT	NT	NT	NC	ND (<15)	NT	NT	NT	NT		NT	NT	NT	NT	NT	ND (<15)	ND (<15)	NT	NT	NT	NT	ND (<15)

Notes:
ND = Not detected above the lab reporting limits shown in parenthesis
NT = Not tested - insufficient groundwater in sample
- = No Method 1 Standard or UCL available
Shaded values exceed the MCP Reportable Concentrations (RCs)
Bolded values exceed the Method 1 Cleanup Standards
EPC = Exposure Point Concentration
NC = Exposure Point Concentration was not calculated because individual event concentrations did not exceed regulatory thresholds

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Page ____ of ____

Turn Time: X Standard Other ____
If faster than 5 days, prior approval by laboratory is required # ____

State where samples were collected from: MA RI CT NH NJ NY MF Other ____

Is this project for any of the following: MA-MCP Navy USACE Other ____

Reporting Limits

ESS LAB PROJECT ID: 0701233

Electronic Deliverable: X Yes ___ No

Format: Excel X Access ___ PDF X Other ____

Co. Name	Project #	Project Name (20 Char. or less)
LFR INC	081-12428-00	METHUEN

Contact Person	Address
FRANK POSTMA	300 METRO CENTER BLVD

City	State	Zip	PO#
WARWICK	RI	02886	

Telephone #	Fax #	Email Address
(401) 738-3887	(401) 732-1686	frank.postma@lfr.com

Write Required Analysis

ESS LAB Sample#	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	Total Lead (Pb)
1	1/11/07	12:40		X	GW	LEI-2	4	1	P	X
2	1/11/07	12:45		X	GW	LEI-5	4	1	P	X
3	1/11/07	12:50		X	GW	CEA-4	4	1	P	X
4	1/11/07	12:55		X	GW	LEI-7	4	1	P	X
5	1/11/07	13:00		X	GW	LEI-4	4	1	P	X
6	1/11/07	13:05		X	GW	LEI-1	4	1	P	X

Container Type: P-Poly G-Glass S-Sterile V-VOA | Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present: X Yes ___ No Internal Use Only

Seals Intact: ___ Yes ___ No NA: X [ ] Pickup

Cooler Temp: 4.7°C [ ] Technicians ____

Preservation Code: 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- ____

Sampled by: CHRIS JAMISON

Comments: All samples field filtered.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	1/11/07 18:00	Ralph Banks	1/15/07 11:30	Ralph Banks	1/15/07 14:15	J. Davis	1-15-07 14:15
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP client acknowledges samples were collected [illegible] fax [illegible] of [illegible] in [illegible] White [illegible] Copy [illegible] Rec[illegible]

Report Date:
09-Sep-05 16:54

☑ Final Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Lessard Environmental, Inc.
30 B Cherry Hill Drive
Danvers, MA 01923
Attn: Marc Brochu

Project: Richdale Gas Station-Methuen, MA
Project #: 1694

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SA33697-01	LEI-1	Ground Water	06-Sep-05 13:30	07-Sep-05 17:10
SA33697-02	LEI-2	Ground Water	06-Sep-05 13:40	07-Sep-05 17:10
SA33697-03	LEI-3	Ground Water	06-Sep-05 13:10	07-Sep-05 17:10
SA33697-04	LEI-4	Ground Water	06-Sep-05 12:55	07-Sep-05 17:10
SA33697-05	LEI-5	Ground Water	06-Sep-05 11:15	07-Sep-05 17:10

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. All applicable NELAC requirements have been met.
Please note that this report contains 19 pages of analytical data including Chain of Custody document(s).
This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Authorized by:

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

Massachusetts Certification # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538/2972
New York # 11393/11840
Rhode Island # 98
USDA # S-51435
Vermont # VT-11393

ACCREDITED IN ACCORDANCE WITH nelac

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 indicated. Please refer to our "Quality" webpage at www.spectrum-analytical.com for a full listing of our current certifications.

CASE NARRATIVE:

The data set for work order SA33697 complies with internal QC criteria for the methods performed. The samples were received @ 4.0 degrees Celsius. An infrared thermometer with a tolerance of +/- 2.0 degrees Celsius was used immediately upon receipt of the samples.

MADEP has published a list of analytical methods (CAM) which provides a series of recommended protocols for the acquisition, ... "Presumptive Certainty" can be established only for those

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
LEI-3 SA33697-03	1694	Ground Water	06-Sep-05 13:10	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
VPH Aliphatic/Aromatic Carbon Ranges			Prepared by method	VPH						
	C5-C8 Aliphatic Hydrocarbons	0.298	0.0750 mg/l	5	+MADEP 5/2004 Rev. 1.1	09-Sep-05	09-Sep-05	5090531	SS	
	C9-C12 Aliphatic Hydrocarbons	0.481	0.0250 mg/l	5	"	"	"	"	"	
	C9-C10 Aromatic Hydrocarbons	0.562	0.0250 mg/l	5	"	"	"	"	"	
	Unadjusted C5-C8 Aliphatic Hydrocarbons	0.347	0.0750 mg/l	5	"	"	"	"	"	
	Unadjusted C9-C12 Aliphatic Hydrocarbons	1.04	0.0250 mg/l	5	"	"	"	"	"	
VPH Target Analytes			Prepared by method	VPH						
71-43-2	Benzene	BRL	5.0 µg/l	5	"	"	"	"	"	
100-41-4	Ethylbenzene	BRL	5.0 µg/l	5	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	45.7	5.0 µg/l	5	"	"	"	"	"	
91-20-3	Naphthalene	15.2	5.0 µg/l	5	"	"	"	"	"	
108-88-3	Toluene	BRL	5.0 µg/l	5	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	10.0 µg/l	5	"	"	"	"	"	
95-47-6	o-Xylene	BRL	5.0 µg/l	5	"	"	"	"	"	
Surrogate recoveries:										
615-59-8	*2,5-Dibromotoluene (FID)*	*113*	*70-130 %*		"	"	"	"	"	
615-59-8	*2,5-Dibromotoluene (PID)*	*98.8*	*70-130 %*		"	"	"	"	"	

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

* Reportable Detection Limit BRL = Below Reporting Limit

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
LEI-4 SA33697-04	1694	Ground Water	06-Sep-05 12:55	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										PH
VPH Aliphatic/Aromatic Carbon Ranges			Prepared by method	VPH						
	C5-C8 Aliphatic Hydrocarbons	BRL	0.0750 mg/l	5	+MADEP 5/2004 Rev. 1.1	09-Sep-05	09-Sep-05	5090531	SS	
	C9-C12 Aliphatic Hydrocarbons	0.402	0.0250 mg/l	5	"	"	"	"	"	
	C9-C10 Aromatic Hydrocarbons	0.378	0.0250 mg/l	5	"	"	"	"	"	
	Unadjusted C5-C8 Aliphatic Hydrocarbons	0.128	0.0750 mg/l	5	"	"	"	"	"	
	Unadjusted C9-C12 Aliphatic Hydrocarbons	0.780	0.0250 mg/l	5	"	"	"	"	"	
VPH Target Analytes			Prepared by method	VPH						PH
71-43-2	Benzene	BRL	5.0 µg/l	5	"	"	"	"	"	
100-41-4	Ethylbenzene	BRL	5.0 µg/l	5	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	58.3	5.0 µg/l	5	"	"	"	"	"	
91-20-3	Naphthalene	13.1	5.0 µg/l	5	"	"	"	"	"	
108-88-3	Toluene	BRL	5.0 µg/l	5	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	10.0 µg/l	5	"	"	"	"	"	
95-47-6	o-Xylene	BRL	5.0 µg/l	5	"	"	"	"	"	
Surrogate recoveries:										
615-59-8	*2,5-Dibromotoluene (FID)*	*94.8*	*70-130 %*		"	"	"	"	"	
615-59-8	*2,5-Dibromotoluene (PID)*	*87.6*	*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons										
EPH Aliphatic/Aromatic Ranges			Prepared by method	SW846 3510C						
	C9-C18 Aliphatic Hydrocarbons	1.5	0.2 mg/l	1	+MADEP 5/2004 R	08-Sep-05	09-Sep-05	5090435	JD	
	C19-C36 Aliphatic Hydrocarbons	7.5	0.2 mg/l	1	"	"	"	"	"	
	C11-C22 Aromatic Hydrocarbons	5.3	0.2 mg/l	1	"	"	"	"	"	
	Unadjusted C11-C22 Aromatic Hydrocarbons	5.3	0.2 mg/l	1	"	"	"	"	"	
	Total Petroleum Hydrocarbons	14.2	0.2 mg/l	1	"	"	"	"	"	
	Unadjusted Total Petroleum Hydrocarbons	14.2	0.2 mg/l	1	"	"	"	"	"	
EPH Target PAH Analytes			Prepared by method	SW846 3510C						
91-20-3	Naphthalene	BRL	5.56 µg/l	1	"	"	"	"	"	
91-57-6	2-Methylnaphthalene	BRL	5.56 µg/l	1	"	"	"	"	"	
208-96-8	Acenaphthylene	BRL	5.56 µg/l	1	"	"	"	"	"	
83-32-9	Acenaphthene	BRL	5.56 µg/l	1	"	"	"	"	"	
86-73-7	Fluorene	BRL	5.56 µg/l	1	"	"	"	"	"	
85-01-8	Phenanthrene	BRL	5.56 µg/l	1	"	"	"	"	"	
120-12-7	Anthracene	BRL	5.56 µg/l	1	"	"	"	"	"	
206-44-0	Fluoranthene	BRL	5.56 µg/l	1	"	"	"	"	"	
129-00-0	Pyrene	BRL	5.56 µg/l	1	"	"	"	"	"	
56-55-3	Benzo (a) anthracene	BRL	5.56 µg/l	1	"	"	"	"	"	
18-01-9	Chrysene	BRL	5.56 µg/l	1	"	"	"	"	"	
205-99-2	Benzo (b) fluoranthene	BRL	5.56 µg/l	1	"	"	"	"	"	
207-08-9	Benzo (k) fluoranthene	BRL	5.56 µg/l	1	"	"	"	"	"	

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

* Reportable Detection Limit BRL = Below Reporting Limit

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
LEI-4 SA33697-04	1694	Ground Water	06-Sep-05 12:55	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Extractable Petroleum Hydrocarbons										
EPH Target PAH Analytes			Prepared by method		SW846 3510C					
50-32-8	Benzo (a) pyrene	BRL	5.56 µg/l	1	+MADEP 5/2004 R	08-Sep-05	09-Sep-05	5090435	JD	
193-39-5	Indeno (1,2,3-cd) pyrene	BRL	5.56 µg/l	1	"	"	"	"	"	
53-70-3	Dibenzo (a,h) anthracene	BRL	5.56 µg/l	1	"	"	"	"	"	
191-24-2	Benzo (g,h,i) perylene	BRL	5.56 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
3386-33-2	*1-Chlorooctadecane*	*44.2*	*40-140 %*		"	"	"	"	"	
84-15-1	*Ortho-Terphenyl*	*57.2*	*40-140 %*		"	"	"	"	"	
580-13-2	*2-Bromonaphthalene*	*66.7*	*40-140 %*		"	"	"	"	"	
321-60-8	*2-Fluorobiphenyl*	*63.5*	*40-140 %*		"	"	"	"	"	

SA 33697

SPECTRUM ANALYTICAL, INC.
Partnering
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
☐ Standard TAT - 7 to 10 business days
☒ Rush TAT - Date Needed: 9/9/05
All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes. Samples disposed of after 60 days unless otherwise instructed.

Report To: LESSARD ENVIRONMENTAL
30 B CHERRY HILL DRIVE
DANVERS MA

Project Mgr.: MARC BROCHU

Invoice To: SAME

P.O. No.: RQN:

Project No.: 1694
Site Name: RICHDALE GAS STATION
Location: METHUEN State: MA
Sampler(s): PMM

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= X2= X3=

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	VPH	EPH	TOTAL LEAD	QA Reporting Notes (check if needed)
[illegible]	LE1-1	9/6/05	1:30	G	GW	2	2	1			X	X		
[illegible]	LE1-2	↓	1:40	↓	↓	2	2	1			X	X		
[illegible]	LE1-3	↓	1:10	↓	↓	2	2				X			
[illegible]	LE1-4	↓	12:55	↓	↓	2	2	1			X	X		
[illegible]	LE1-5	↓	11:15	↓	↓	2/4	2			1	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 mbrochu@lessard-environmental.com
EDD Format

Condition upon receipt: ☐ Iced ☐ Ambient ☐ C

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	9/7/05	1417
[signature]	[signature]	9/7/05	7:10

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

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

* Reportable Detection Limit BRL = Below Reporting Limit

Table 4

Groundwater Analytical Data - Lead Constituents

76 Swan Street
Methuen, Massachusetts

Dates	Sample Points																		
	OW-1			LEI-2			LEI-3			LEI-4			LEI-5			LEI-6			
	Dissolved Lead (ug/l)	Total Lead (ug/l)	Tetra-ethyl Lead (ug/l)	Dissolved Lead (ug/l)	Total Lead (ug/l)	Tetra-ethyl Lead (ug/l)	Dissolved Lead (ug/l)	Total Lead (ug/l)	Tetra-ethyl Lead (ug/l)	Dissolved Lead (ug/l)	Total Lead (ug/l)	Tetra-ethyl Lead (ug/l)	Dissolved Lead (ug/l)	Total Lead (ug/l)	Tetra-ethyl Lead (ug/l)	Dissolved Lead (ug/l)	Total Lead (ug/l)	Tetra-ethyl Lead (ug/l)	Dissolved Lead (ug/l)
May 31, 2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
August 31 2005	NT	21.4	NT	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
September 8, 2005	NS	NS	NS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND (<3.8)	NT	NT	NT	NT	NT
September 16, 2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
December 13, 2005	NT	1.7	ND (<2)	NT	24.9	ND (<2)	NS	NS	NS	NS	NS	NS	NT	0.5	ND (<2)	NS	NS	NS	NS
June 5, 2006[1]	NS	NS	NS	17.8	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
August 7, 2006	NS	NS	NS	ND (<2.5)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
September 20, 2006	NS	NS	NS	ND (<8)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
January 11, 2007	NS	NS	NS	ND (<2.5)	NT	NT	ND (<2.5)	NT	NT	ND (<2.5)	NT	NT	ND (<2.5)	NT	NT	ND (<2.5)	NT	NT	ND (<2.5)
Exposure Point Concentration	NC	NC	NC	7.7	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
MCP RCGW-1 Standard	15	15	5	15	15	5	15	15	5	15	15	5	15	15	5	15	15	5	15
MCP Method 1 GW-3 Standard	15	15	NA	15	15	NA	15	15	NA	15	15	NA	15	15	NA	15	15	NA	15

Notes:
1) MCP Revisions reduced RCGW-2 standard from 30 ppb to 15 ppb.
NT = Not Tested
NC = Exposure Point Concentration was not calculated because individual event concentrations did not exceed regulatory thresholds.
NS = Not Sampled
ug/l = Micrograms per liter

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

PROJECT NARRATIVE

rank Postma
LFR Levine-Fricke (RI)
300 Metro Center Boulevard, Suite 250
Warwick, RI 02886

RE: Richdale Methuen
SS Laboratory Work Order Number: 0701233

his signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sam iquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with Project Narrative, the entire report has been paginated. The ESS Laboratory Certifications sheet is the final report page. This rep should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final rep is been mailed. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

Date: January 24, 2007

ample Receipt
6 Ground Water samples were received on January 15, 2007 for the analyses specified on the enclosed Chain of Custody Record.

nalytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the follow ethodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Stand ethods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recogni methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatograp analysis, manual integration may be used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC, except where noted within this project narrative. Holding time and preservation requirements for all MCP analytes were achieved, unless otherwise noted in this Project Narrative.

No unusual observations noted.

d of Project Narrative.

mdp

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: LFR Levine-Fricke (RI)
Client Project ID: Richdale Methuen

ESS Laboratory Work Order: 0701233

MADEP MCP Response Action Analytical Report Certification Form

MADEP RTN*: _____

This form provides certification for the following data set:
0701233-01, 0701233-02, 0701233-03, 0701233-04, 0701233-05, 0701233-06

Sample Matricies:	(X) Ground Water	( ) Soil/Sediment	( ) Drinking Water	( ) Other: _____	
MCP SW-846	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )
Methods Used	8270C ( )	8081A ( )	VPH ( )	6020 ( )	9014M** ( )
	8082 ( )	8021B ( )	EPH ( )	7000 S*** (X)	7196A ( )

As specified in MADEP Compendium of Analytical Methods (Check all that apply)

* List Release Tracking Number (RTN), if known.
** M-SW-846 9014 or MADEP Physiologically Available Cyanide (PAC) Method
*** 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 the report meet all the 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 and EPH method conducted without significant modifications (see Section 11.3 of respective Methods)? (Yes) No*

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

E Were all QC performance standards and recommendations for the specific methods achieved? (Yes) No*

F Were results for all analyte-list compounds/elements for the specified method(s) reported? Yes (No*)

****All negative responses must be addressed in an attached Environmental Laboratory Case Narrative.***

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

Signature: [signature] Date: 1/25/2007

Printed Name: Laurel Stoddard Position: Laboratory Director

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client Name: LFR Levine-Fricke (RI)
Client Project ID: Richdale Methuen
Client Sample ID: LEI-4
Date Sampled: 01/11/07 13:00
Percent Solids: N/A

ESS Laboratory Work Order: 0701233
ESS Laboratory Sample ID: 0701233-05
Sample Matrix: Ground Water

3005A/6000/7000 Total Metals

Analyte	Results	Units	MRL	GW2 Limit	Method	DF	Analyst	Analyzed	I/V	F/
Lead	ND	ug/L	2.5		7421	1	JP	01/17/07	100	5