ETS

ENVIRONMENTAL CONSULTING AND MANAGEMENT SERVICES

May 2, 2007

United States Environmental Protection Agency
RGP-NOC Processing
1 Congress Street
Boston, Massachusetts 02114-2023
Attn: Mr. Victor Alvarez
Via email alvarez.victor@epa.gov

RE: Remediation General Permit (RGP) Notice of Intent (NOI)
Former JEMS of New England
682 Main Street , Clinton, MA 01510
MADEP RTN 2-0760

Dear Mr. Alvarez:

On behalf of JEMS of New England, Entact Solutions, Inc. (ETS) is submitting this Remediation General Permit Notice of Intent for the above referenced site. The purpose of this Permit request is to allow for the discharge of treated groundwater associated with a groundwater recovery and treatment system as part of ongoing site remediation for the above referenced site as described in the Phase II/III/IV Addendum submitted to MADEP December 2006.

As described in the attached Notice of Intent, groundwater will be recovered from up to seven groundwater recovery wells and processed through an oil/water separator prior to treatment via three 200 pound liquid phase granular activated carbon vessels plumbed in series. This permit is a continuation of a NPDES permit exclusion for the same purpose. The treated discharge is directed to the local storm drain located on Main Street which ultimately is discharged into Counterpane Brook. The approximate location of the outfall is included

Attachment A includes the completed and signed Notice of Intent. Figures depicting the site location, the approximate location of the discharge and a Process and Instrumentation Diagram are included in Attachment B. Attachment C includes the laboratory reports and Attachment D includes the USGS Streamstat output page used to derive the low-flow dilution at the outfall.

If you have any questions regarding this submittal please do not hesitate to contact the undersigned.

Sincerely
For E T S

Scott Parker L.S.P
Sr. Project Manager

One Dix STREET, WORCESTER, MA 01609 www.ETS-EnviroMgt.com (508) 798-5084 FAX: (508) 798-5085

ATTACHMENT A
NOTICE OF INTENT

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:

<table>
<tr><td colspan="2">a) Name of facility/site:
Former JEMS of New England</td><td colspan="4">Facility/site address:
682 Main Street
Clinton, MA</td></tr>
<tr><td>Location of facility/site:
longitude: 42252 latitude: 71411</td><td>Facility SIC code(s):
5541</td><td colspan="4">Street:
682 Main Street</td></tr>
<tr><td colspan="2">b) Name of facility/site owner: JEMS of New England</td><td colspan="4">Town: Worcester</td></tr>
<tr><td colspan="2" rowspan="2">Email address of owner:
achillesRH@ETS-enviromgt.com</td><td rowspan="2">State:
MA</td><td rowspan="2">Zip:
02131</td><td rowspan="2">County:
Worcester</td></tr>
<tr><td colspan="2">Telephone no.of facility/site owner: (508) 798-5084</td></tr>
<tr><td colspan="2">Fax no. of facility/site owner: (508) 798-5085</td><td colspan="3" rowspan="2">Owner is (check one): 1. Federal ___ 2. State/Tribal ___
3. Private ✔ 4. other, if so, describe:</td></tr>
<tr><td colspan="2">Address of owner (if different from site):</td></tr>
<tr><td colspan="6">Street: One Dix Street</td></tr>
<tr><td>Town: Worcester</td><td>State: MA</td><td>Zip: 01609</td><td colspan="3">County: Worcester</td></tr>
<tr><td rowspan="2">c) Legal name of operator:
Entact Solutions Inc</td><td colspan="5">Operator telephone no: (508) 798-5084</td></tr>
<tr><td colspan="2">Operator fax no.: (508) 798-5085</td><td colspan="3">Operator email:
achillesRH@ETS-enviromgt.com</td></tr>
<tr><td colspan="6">Operator contact name and title: Reginald Achilles - President</td></tr>
</table>

Address of **operator** (if different from owner):	Street: One Dix Street		
Town: Worcester	State: MA	Zip: 01609	County: Worcester

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: 98-079
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: RTN 2-0762
2. permit or license # assigned:
3. state agency contact information: name, location, and telephone number:
MADEP - CERO Worcester MA 508-792-7650

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:
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 recovery and treatment system operating under the MCP - treatment system consists of two granular activated carbon vessels, directing discharge to the local storm sewer system. Storm sewer discharges to Counterpane Brook which flows to the Nashua River.

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 2.5 Average flow 1.25 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. 47141 lat. 42252 ; 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__05/10/07_____ end__05/10/12_____	
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	☐	✔	1	grab	160.2	5 mg/l	1110			
2. Total Residual Chlorine	✔	☐	1	grab	330.1	0.1mg/				
3. Total Petroleum Hydrocarbons	✔	☐	1	grab	1664A	4.4				
4. Cyanide	☐	✔	1	grab	335.2	.005mg/	0.005	5.45E-4		
5. Benzene	☐	✔	1	grab	8260	1.0	1.7	0.00019		
6. Toluene	☐	✔	1	grab	8260	1.0	3.2	0.00035		
7. Ethylbenzene	☐	✔	1	grab	8260	1.0	23	0.00251		
8. (m,p,o) Xylenes	☐	✔	1	grab	8260	2.0	39	0.0043		
9. Total BTEX[4]	☐	✔	1	grab	8260	2.0	77.9	0.0085		

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

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)
10. Ethylene Dibromide (1,2- Dibromo-methane)	✔		1	grab	504.1	0.020				
11. Methyl-tert-Butyl Ether (MtBE)	✔		1	grab	8260	20				
12. tert-Butyl Alcohol (TBA)	✔		1	grab	8260	100				
13. tert-Amyl Methyl Ether (TAME)	✔		1	grab	8260	20				
14. Naphthalene		✔	1	grab	8270	4.8	11	0.0012		
15. Carbon Tetra-chloride	✔		1	grab	8260	1.0				
16. 1,4 Dichlorobenzene	✔		1	grab	8260	5.0				
17. 1,2 Dichlorobenzene	✔		1	grab	8260	5.0				
18. 1,3 Dichlorobenzene	✔		1	grab	8260	5.0				
19. 1,1 Dichloroethane	✔		1	grab	8260	1.5				
20. 1,2 Dichloroethane	✔		1	grab	8260	1.5				
21. 1,1 Dichloroethylene	✔		1	grab	8260	1.0				
22. cis-1,2 Dichloro-ethylene	✔		1	grab	8260	1.0				
23. Dichloromethane (Methylene Chloride)	✔		1	grab	8260	5.0				
24. Tetrachloroethylene	✔		1	grab	8260	1.5				

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	✔		1	grab	8260	2.0				
26. 1,1,2 Trichloroethane	✔		1	grab	8260	1.5				
27. Trichloroethylene	✔		1	grab	8260	1.0				
28. Vinyl Chloride	✔		1	grab	8260	2.0				
29. Acetone	✔		1	grab	8260	10				
30. 1,4 Dioxane	✔		1	grab	8260	2000				
31. Total Phenols	✔		1	grab	420.1	0.03				
32. Pentachlorophenol	✔		1	grab	8270	19				
33. Total Phthalates [5] (Phthalate esthers)	✔		1	grab	8270					
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	✔		1	grab	8270	9.6				
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	✔		1	grab	8270	4.8				
a. Benzo(a) Anthracene	✔		1	grab	8270	4.8				
b. Benzo(a) Pyrene	✔		1	grab	8270	4.8				
c. Benzo(b)Fluoranthene	✔		1	grab	8270	4.8				
d. Benzo(k) Fluoranthene	✔		1	grab	8270	4.8				
e. Chrysene	✔		1	grab	8270	4.8				

[5] 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	✔		1	grab	8270	4.8				
g. Indeno(1,2,3-cd) Pyrene	✔		1	grab	8270	6.8				
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	✔		1	grab	8270	4.8				
h. Acenaphthene	✔		1	grab	8270	4.8				
i. Acenaphthylene										
j. Anthracene	✔		1	grab	8270	4.8				
k. Benzo(ghi) Perylene	✔		1	grab	8270	4.8				
l. Fluoranthene	✔		1	grab	8270	4.8				
m. Fluorene	✔		1	grab	8270	4.8				
n. Naphthalene-		✔	1	grab	8270	4.8	11	0.0012		
o. Phenanthrene	✔		1	grab	8270	4.8				
p. Pyrene	✔		1	grab	8270	0.19				
37. Total Polychlorinated Biphenyls (PCBs)	✔		1	grab						
***3*8. Antimony**		✔	1	grab	200.9	0.005	0.007			
39. Arsenic		✔	1	grab	200.7	0.005	0.259			
40. Cadmium		✔	1	grab	213.2	0.0005	0.002			
41. Chromium III		✔	1	grab	200.7	0.005	0.043			
42. Chromium VI	✔		1	grab	3500C	1				

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		✔	1	grab	200.7	0.02	0.18			
44. Lead		✔	1	grab	200.9	0.010	0.110			
45. Mercury	✔		1	grab	245.2	0.0002				
46. Nickel		✔	1	grab	200.7	0.005	0.091			
47. Selenium	✔		1	grab	200.7	0.005				
48. Silver	✔		1	grab	272.2	0.0005				
49. Zinc		✔	1	grab	200.7	0.02	0.25			
50. Iron		✔	1	grab	200.7	0.05	72	0.164	1.5	
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:

The treatment system is addressing a release of gasoline to the subsurface. Groundwater extraction is conducted on 6 groundwater extraction wells designed to produce approximatyely 2 gallons per minute per well. The treatment system is designed to treat a total of 10 gallons per minute through an oil water separator before being transferred through two 200 pound liquid phase granular activated carbon treamtment vessels plumbed in series. Discharge is then directed to a storm drain located on Main Street. The ultimate discharge point of the storm sewer is the Counterpane Brook located approximately 350 feet east of the site.

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 10 Maximum flow rate of treatment system 20 Design flow rate of treatment system 20

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:

The discharge is connected to the Town of Clinton Storm drain system. The storm drain discharges directly to Counterpane Brook. Although no plans of the Storm Drain route, were available from the Town, the pathway was confirmed using tracer dye.

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 8.36 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)?

Is there a TMDL? Yes ☐ No ✔ If yes, for which pollutant(s)?

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 ? ☐ 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.

The USGS Streamstats program did not have a centerline plot for the discharge location associated with the discharge into Counterpane Brook. The results of the Streamstat printout attached to this submittal is for the junction of Counterpane Brook with the Nashua River. As a conservative measure the 7Q10 flow from the Nashua plotted at the intersection of the two waterbodies was reduced by 75%. No dilution was necessary to meet the metals discharge limits. the Streamstat printout is attached to this submittal.

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: JEMS of New England

Operator signature:

Title: Project Manager

Date: 5/2/07

ATTACHMENT B
FIGURES

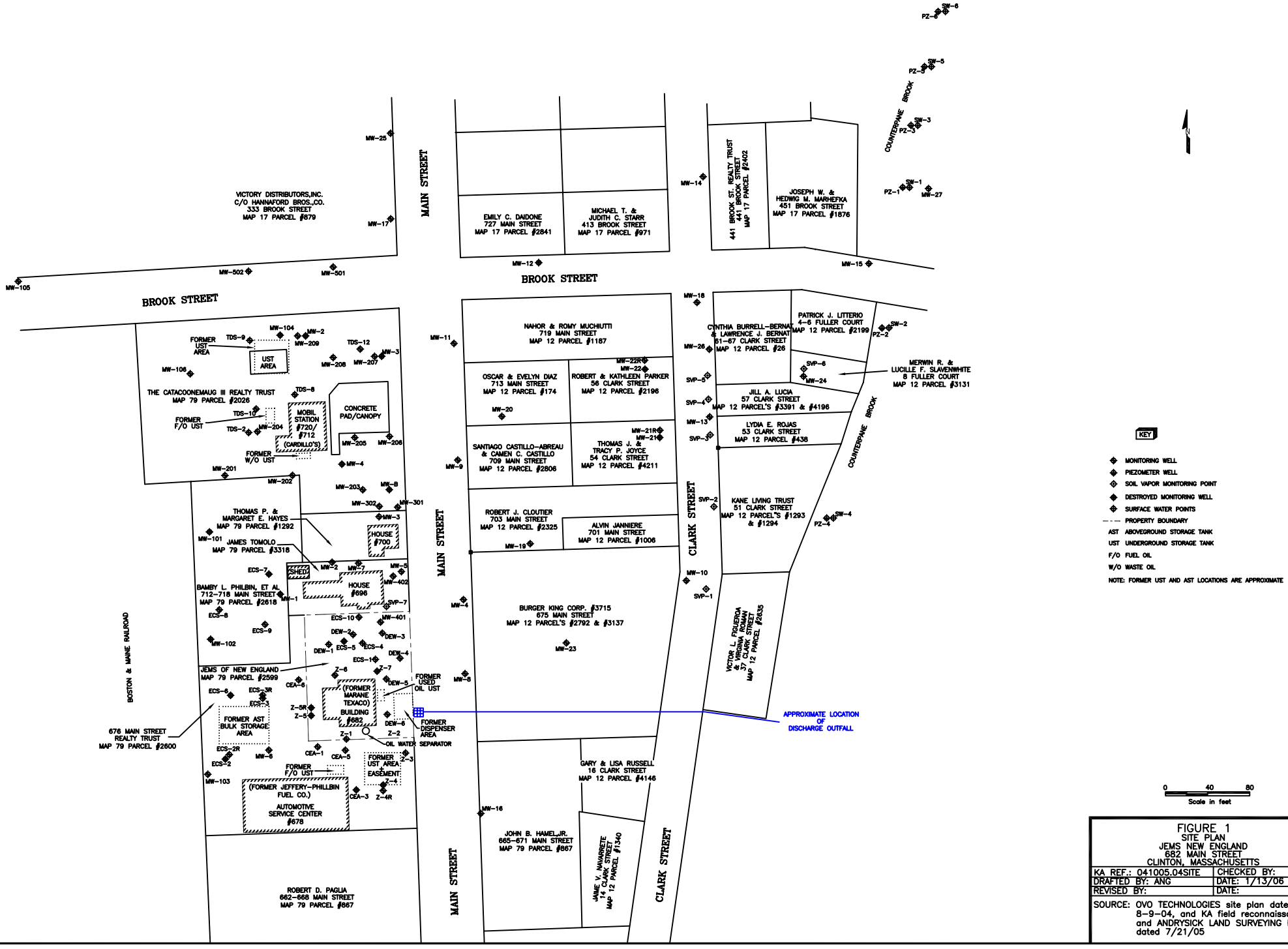
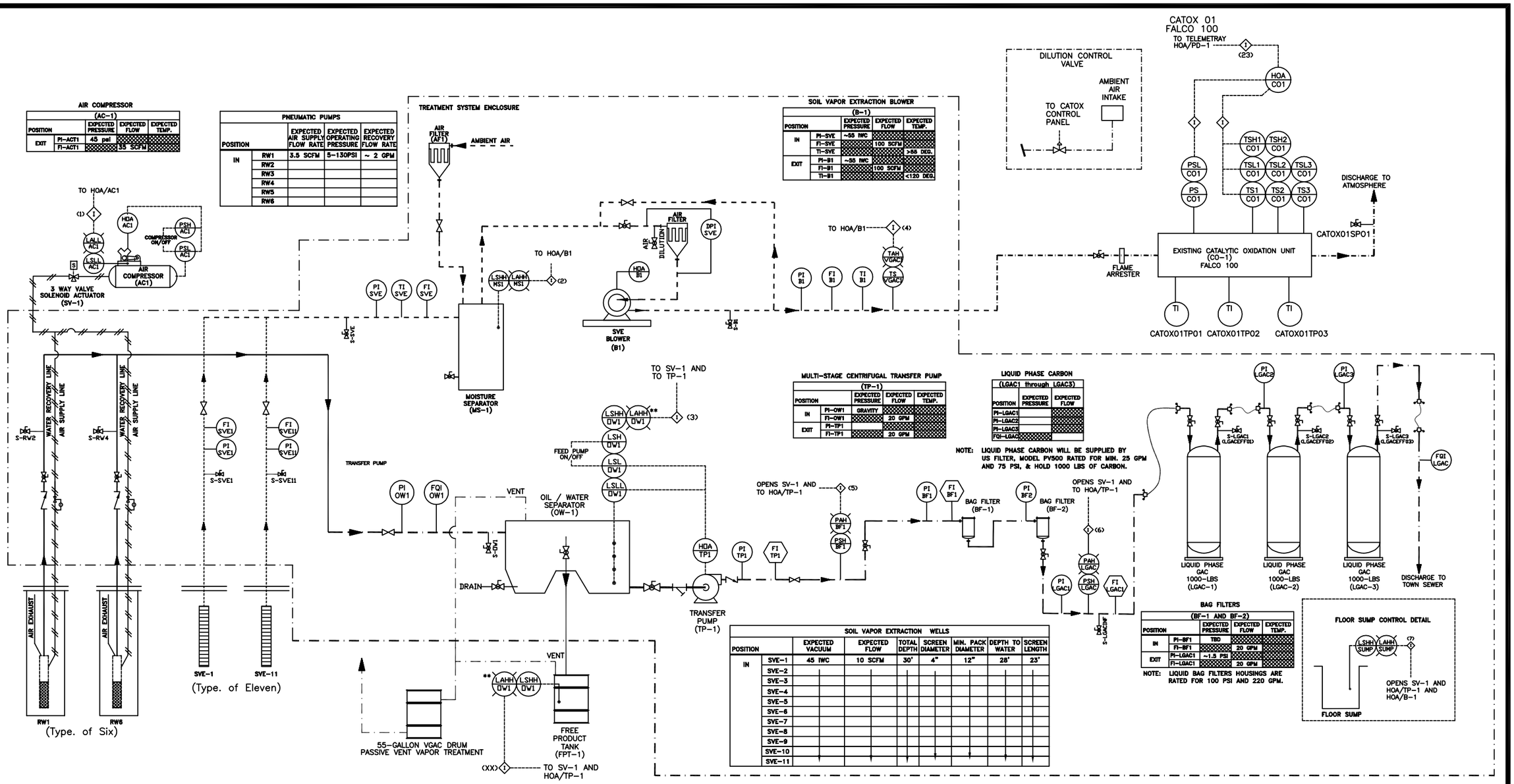


FIGURE 1
SITE PLAN
JEMS NEW ENGLAND
682 MAIN STREET
CLINTON, MASSACHUSETTS

KA REF.: 041005.04SITE	CHECKED BY:
DRAFTED BY: ANG	DATE: 1/13/06
REVISED BY:	DATE:

SOURCE: OVO TECHNOLOGIES site plan dated 8-9-04, and KA field reconnaissance and ANDRYSICK LAND SURVEYING PLAN dated 7/21/05



INTERLOCK/FAILSAFE SCHEDULE

NO	LOCATION	FUNCTION
1.	Air Compressor (AC-1) Low Low Oil Level Switch	If a low oil level is detected in AC-1, AC-1 will be shut off.
2.	Moisture Separator (MS-1) High High Level Switch	If a high liquid level is detected in MS-1, the soil vapor extraction blower (B-1), and the Catox unit (CO-1) will be shut off.
3.	Vapor Phase GACs (VGAC-1 and VGAC-2) High Temperature Switch	If a high temperature is detected prior to the VGACs (VGAC-1 and VGAC-2), the soil vapor extraction blower (B-1) is shut off.
4.	Oil/Water Separator (OW-1) High High Level Switch	If a high liquid level is detected in OW-1, the 3-way valve solenoid actuator (SV-1) is opened, and the multi-stage centrifugal pump (TP-1) is shut off.
5.	Bag Filters (BFs) High Pressure Switch	If a high pressure is detected in the bag filters (BF-1 through BF-4), the 3-way valve solenoid actuator (SV-1) is opened, and the multi-stage centrifugal pump (TP-1) is shut off.
6.	Liquid Phase GACs (LGAC-1 through LGAC-3) High Pressure Switch	If a high pressure is detected in the LGACs (LGAC-1 through LGAC-3), the 3-way valve solenoid actuator (SV-1) is opened, and the multi-stage centrifugal pump (TP-1) is shut off.
7.	Floor Sump High High Level Switch	If a high liquid level is detected in the Floor Sump, the 3-way valve solenoid actuator (SV-1) is opened, and all remediation equipment is shut off.
8.	Product Drum LSHH	
9.	SVE-1 Temperature switch high	
9.	SVE-1 Pressure switch high	

* ALL INTERLOCKS ARE LATCHING

FIGURE 15

SVE/GWE SYSTEM PROCESS & INSTRUMENTATION
JEMS NEW ENGLAND
682 MAIN STREET
CLINTON, MASSACHUSETTS

KA REF.: 041005.01P&ID	CHECKED BY:
DRAFTED BY: DJO	DATE: 3/22/06
REVISED BY:	DATE:
SOURCE:KLEINFELDER	

KLEINFELDER
30 Porter Road • Littleton, MA 01460 • (978) 486-0060

SYMBOL & LEGEND SHEET

EQUIPMENT


OIL WATER SEPARATOR


BAG FILTER


LIQUID RING PUMP


CENTRIFUGAL PUMP


ROTARY VANE COMPRESSOR


DISPLACEMENT PUMP


PRODUCT DRUM

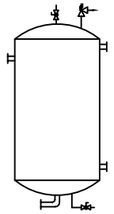

INLET FILTER


POSITIVE DISPLACEMENT BLOWER


BLOWER


VAPOR PHASE CARBON


LIQUID PHASE CARBON FRP


LIQUID PHASE CARBON (STEEL)


MOISTURE SEPARATOR


AIR COMPRESSOR


WELL WITH PUMP

SKIMMER PUMP


DIAPHRAM PUMP

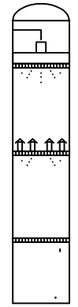

PROPORTIONING PUMP

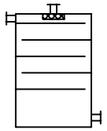

CENTRIFUGAL BLOWER PUMP


CONDENSER


HEATER

SILENCER


PACKED COLUMN AIR STRIPPING TOWER


LOW PROFILE AIR STRIPPER

LIQUID RING PUMP HOLDING TANK

CONTROL VALVE BODIES

BALL VALVE

GATE VALVE

GLOBE VALVE

BUTTERFLY VALVE

SWING CHECK VALVE

DIAPHRAGM VALVE

BALL CHECK VALVE

NEEDLE VALVE

3 WAY VALVE

4 WAY VALVE

SAMPLE VALVE

ACTUATORS / REGULATORS

GEAR ACTUATOR

PRESSURE RELIEF

DIAPHRAGM ACTUATOR

HYDRAULIC ACTUATOR

SOLENOID ACTUATOR

MOTOR ACTUATOR

DIGITAL ACTUATOR

WATER ACTUATOR

VALVE ABBREVIATIONS

N.C. – NORMALLY CLOSED
N.O. – NORMALLY CLOSED
MAN – MANUAL

FITTINGS & PIPING

FOOT VALVE

VICTAULIC CONNECTOR

CROSSOVER

FLANGED CONNECTION

SCREWED CONNECTION

UNION

COUPLING

REGULATOR

FLOW INDICATOR

RUPTURE DISK

REDUCER

STRAINER

FLOW RESTRICTOR

PRESSURE RELIEF VALVE

QUICK CONNECT w/ FLEX HOSE

QUICK CONNECT COUPLING

PRESURE INDICATOR

SAMPLE VALVE

ISOLATION VALVE

EXPANSION JOINT/SLEEVE

HOSE CONNECTION

PLUG

PIPE CAP

SLIP UPDRAFT VENT CAP

ELBOW – TURNED UP

ELBOW – TURNED DOWN

ELBOW – 90°

ELBOW – 45°

ELBOW – LONG RADIUS

REDUCING ELBOW

TEE REDUCING

TEE (OUTLET UP)

TEE (OUTLET DOWN)

TEE

INSTRUMENTATION & CONTROLS

LINE DESIGNATION:

2 – VR – 01 – PV

2 = SIZE IN INCHES; VR = PROCESS; 01 = LINE NUMBER; PV = MATERIAL SPECIFICATION

PROCESS LINE INDICATORS

FLOW DIRECTION
MAJOR PROCESS
MINOR PROCESS
WATER/AIR PIPING
AIR PIPING
INSTRUMENTATION CONTROLS
PNEUMATIC LINE
CONNECTING LINE
CROSSOVER LINE

PROCESS LINE ABBREVATIONS

ES – ELECTRIC SUPPLY
GS – GAS SUPPLY
HS – HYDRAULIC SUPPLY
NS – NITROGEN SUPPLY
SS – STEAM SUPPLY
W – WATER SUPPLY
V – VACUUM
VR – VAPOR REMOVAL
TF – TOTAL FLUIDS
AP – ACCESS PIPE / CONDUIT
SA – SPARGE AIR
PN – PNEUMATIC SUPPLY

MATERIAL SPECIFICATON:

PV – POLYVINYL CHLORIDE
GM – GALVANIZED
RC – RIGID COPPER
IR – IRON
ABS – ACRYLONITRILE BUTADENE STYRENE
FL – FLEX

PRIMARY ELEMENT SYMBOLS

LEVEL SWITCH LOW LOW

LEVEL SWITCH LOW

LEVEL SWITCH HIGH

LEVEL SWITCH HIGH HIGH

PRESSURE SWITCH HIGH

PRESSURE SWITCH LOW

PRESSURE DIFFERENTIAL SWITCH

PRESSURE INDICATOR

FLOW SWITCH

FLOW METER

TEMPERATURE INDICATOR

TEMPERATURE SWITCH HIGH

TEMPERATURE SWITCH LOW

LEVEL ALARM LOW

LEVEL ALARM HIGH

PRESSURE ALARM LOW

SINGLE PORT PITOT TUBE

AVERAGING PITOT TUBE

POSITIVE DISPLACEMENT FLOW INDICATOR

PROPELLER OR TURBINE TYPE FLOW ELEMENT

VORTEX SENSOR

SONIC FLOWMETER

TARGET TYPE SENSOR

WEIR

VENTURI TUBE

FLOW NOZZLE

LEVEL SWITCH FLOATS

SYMBOL SPECIFICATION

INSTRUMENT TYPE:

PS	PRESSURE SWITCH
PI	PRESSURE INDICATOR
FI	FLOW INDICATOR
FQI	FLOW METER (TOTALIZING)
CI	CAPACITIVE SENSOR
TI	TEMPERATURE INDICATOR
TT	TEMPERATURE TRANSDUCER
TS	TEMPERATURE SENSOR
LEL	EXPLOSIVITY METER
SL	STATUS LAMP
PC	PRESSURE CONTROL
SP	SAMPLE POINT

INSTRUMENTATION

(SENSOR DESIGNATION)

D = D=DISCRETE, A=ANALOG, H=HI SPEED
O = O=OUTPUT, I=INPUT
1 = SENSOR NUMBER

INSTRUMENT IS CONTROLLED OFFSITE BY SCADA INTERFACE

INSTRUMENT WITH INPUTS OR OUTPUTS LOCATED AT A LOCAL CONTROL PANEL OTHER THAN THE SITE CONTROL PANEL

GENERAL INSTRUMENT OR FUNCTION SYMBOLS

	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNTED	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS			
SHARED DISPLAY, SHARED CONTROL			
CONTROL INTERLOCK LOGIC		T–100 TANK P–100 PUMP WP–100 WELL PUMP B–100 BLOWER H–100 HEATER HV–100 HYDRAULIC VALVE MV–100 MOTOR VALVE SV–100 SOLENOID VALVE	
INSTRUMENTS SHARING COMMON HOUSING			
PILOT LIGHT OR ALARM INDICATOR			

FIGURE 16
GWE/SVE SYSTEM LEGEND
JEMS NEW ENGLAND
682 MAIN STREET
CLINTON, MASSACHUSETTS

GSC REF.: 041005.01P&ID	CHECKED BY:
DRAFTED BY: DJO	DATE: 3/22/06
REVISED BY:	DATE:
SOURCE: GSC|KA ENGINEERING DEPARTMENT	

KLEINFELDER
30 Porter Road • Littleton, MA 01460 • (978) 486-0060

ATTACHMENT C
LABORATORY REPORTS

REPORT OF ANALYTICAL RESULTS

NETLAB Case Number Q1004-09

Prepared for:

Geologic Services Corp.
30 Porter Road
Littleton, MA 01460
Attn: Trish Eliasson

Report Date: October 13, 2005

Lab # RI010

NEW ENGLAND TESTING LABORATORY, INC.
1254 Douglas Avenue, North Providence, Rhode Island 02904-5392
PROVIDENCE (401) 353-3420 TOLL FREE: 1-888-863-8522

Total # of Pages: 13

ANALYTICAL METHOD REPORT CERTIFICATION FORM

Laboratory Name: New England Testing Laboratory, Inc.	Project #:
Project Location:	RTN[1]:
This form provides certifications for the following data set: Q1004-09	
Sample Matrices: Groundwater (X) Soil/Sediment ( ) Drinking Water ( ) Other:	

SW-846 Methods Used					
	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )
	8270C ( )	8081A ( )	VPH ( )	6020 ( )	9014M[2] ( )
	8082 ( )	8021B ( )	EPH ( )	7000 S[3] ( )	Other: (X)

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, and C 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 (X) No[1] ( )
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 (X) No[1] ( )
C	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in Section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No[1] ( ) Not Applicable ( )
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[1] ( )

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

E	Were all QC performance standards and recommendations for the specified methods achieved?	Yes (X) No[1] ( )
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	Yes (X) No[1] ( )

[1]All NO answers 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: Jodi Lyons Position: Director, Inorganics

Printed Name: Jodi Lyons Date: 10/12/2005

STATEMENTS/CERTIFICATIONS REQUIRED BY THE NATIONAL ENVIRONMENTAL LABORATORY APPROVAL CONFERENCE (NELAC)

New England Testing Laboratory is certified under the National Environmental Laboratory Approval Program (NELAP). This certification requires the following statements and certifications be included in our report.

This report shall not be reproduced, except in full, without written approval of the laboratory.

New England Testing certifies that the test results contained within this report meet all NELAC requirements except as detailed in the Case Narrative section of this report.

SAMPLES SUBMITTED and REQUEST FOR ANALYSIS:

The samples listed in Table I were submitted to New England Testing Laboratory on October 4, 2005. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. The case number for this sample submission is Q1004-09.

Custody records are included in this report.

TABLE I, Samples Submitted

Sample ID	Date Sampled	Matrix	Analysis Requested
GAC INF01	10/4/05	Wastewater	Table II

TABLE II, Analysis and Methods

ANALYSIS	DETERMINATIVE METHOD
Total Suspended Solids	160.2
Total Residual Chlorine	330.5
Hexavalent Chromium	7196A
Total Metals	
Antimony	3113B
Arsenic	3113B
Cadmium	3113B
Chromium	200.7
Copper	200.7
Iron	200.7
Lead	3113B
Mercury	245.1
Nickel	200.7
Selenium	3113B
Silver	3113B
Zinc	200.7

These methods are documented in:

Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992, APHA, AWWA-WPCF.

Manual of Methods for Chemical Analysis of Water and Water Wastes, EPA-600/4-79-020 (Revised 1983), USEPA/EMSL.

40 CFR 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act*, Office of Federal Register National Archives and Records Administration.

CASE NARRATIVE:

Sample Receipt:

No sample for ms/msd/duplicate analysis was supplied. No field blank was supplied. (This does not qualify the analytical results but does prevent conducting these SW-846 {Chapter 1, Section 3.4} QA Audits.)

The samples were all appropriately cooled and preserved upon receipt.

The samples were received in the appropriate containers.

The chain of custody was adequately completed and corresponded to the samples submitted.

Metals:

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures.

A marginal concentration of Iron was detected in the water method blank. The concentration of Iron was at the reporting limit. This has no significance on the usefulness of the sample result, which was found to be considerably greater than the blank contamination.

General Chemistry:

Total Residual Chlorine: No anomalies or excursions from QC limits.

Total Suspended Solids: No anomalies or excursions from QC limits.

Hexavalent Chromium: No anomalies or excursions from QC limits. As stated in Method 7196A, section 7.3, verification is required to ensure that there are no conditions interfering with the colorimetric process. This was not met with the sample, therefore a dilution was required.

Sample Results

GACINF01

Parameter	Result, mg/l	Reporting Limit	Date Analyzed
Total Suspended Solids	1110	3	10/5/05
Total Residual Chlorine	N.D.	0.1	10/4/05
Hexavalent Chromium	N.D.	1	10/4/05 @ 15:37

N.D. = Not Detected

METALS RESULTS

The presence of the NETLAB LOGO in the top right corner of each page in this section indicates:

The Technical Manager of the Metals Analysis Department certifies that the results included in this section have been reviewed and approved. Any exceptions or qualifications of substance have been reported in the case narrative.

New England Testing Laboratory, Inc.

METALS RESULTS

NELAC LAB

Case Number: Q1004-09
Sample ID: GAC INF01
Date collected: 10/04/05
Matrix WATER
Sample Type: TOTAL

Analyst CC/RM

Parameter	CAS Number	Preparative Method	Analytical Method	Result	Reporting Limit	Detection Limit	Units	Date of Preparation	Date Analyzed
Antimony	7440-36-0	NA	3113B	0.007	0.005	0.005	mg/l	10/5/05	10/10/05
Arsenic	7440-38-2	NA	3113B	0.259	0.025	0.005	mg/l	10/5/05	10/7/05
Cadmium	7440-43-9	NA	3113B	0.0020	0.0005	0.0005	mg/l	10/5/05	10/10/05
Chromium	7440-47-3	NA	200.7	0.043	0.005	0.005	mg/l	10/4/05	10/10/05
Copper	7440-50-8	NA	200.7	0.18	0.02	0.02	mg/l	10/4/05	10/10/05
Iron	7439-89-6	NA	200.7	72	0.05	0.05	mg/l	10/4/05	10/10/05
Lead	7439-92-1	NA	3113B	0.110	0.010	0.002	mg/l	10/5/05	10/7/05
Mercury	7439-97-6	NA	245.1	ND	0.0002	0.0002	mg/l	10/5/05	10/6/05
Nickel	7440-02-0	NA	200.7	0.091	0.005	0.005	mg/l	10/4/05	10/10/05
Selenium	7782-49-2	NA	3113B	ND	0.005	0.005	mg/l	10/5/05	10/11/05
Silver	7440-22-4	NA	3113B	ND	0.0005	0.0005	mg/l	10/5/05	10/5/05
Zinc	7440-66-6	NA	200.7	0.25	0.02	0.02	mg/l	10/4/05	10/10/05

ND indicates not Detected

METALS RESULTS

Sample ID: METHOD BLANK

Matrix WATER **Analyst** CC/RM

Sample Type: Preparation Blank

Parameter	CAS Number	Preparative Method	Analytical Method	Result	Reporting Limit	Detection Limit	Units	Date of Preparation	Date Analyzed
Antimony	7440-36-0	NA	3113B	ND	0.005	0.005	mg/l	10/5/05	10/10/05
Arsenic	7440-38-2	NA	3113B	ND	0.005	0.005	mg/l	10/5/05	10/7/05
Cadmium	7440-43-9	NA	3113B	ND	0.0005	0.0005	mg/l	10/5/05	10/10/05
Chromium	7440-47-3	NA	200.7	ND	0.005	0.005	mg/l	10/4/05	10/10/05
Copper	7440-50-8	NA	200.7	ND	0.02	0.02	mg/l	10/4/05	10/10/05
Iron	7439-89-6	NA	200.7	0.08	0.05	0.05	mg/l	10/4/05	10/10/05
Lead	7439-92-1	NA	3113B	ND	0.002	0.002	mg/l	10/5/05	10/7/05
Mercury	7439-97-6	NA	245.1	ND	0.0002	0.0002	mg/l	10/5/05	10/6/05
Nickel	7440-02-0	NA	200.7	ND	0.005	0.005	mg/l	10/4/05	10/10/05
Selenium	7782-49-2	NA	3113B	ND	0.005	0.005	mg/l	10/5/05	10/11/05
Silver	7440-22-4	NA	3113B	ND	0.0005	0.0005	mg/l	10/5/05	10/5/05
Zinc	7440-66-6	NA	200.7	ND	0.02	0.02	mg/l	10/4/05	10/10/05

ND indicates not Detected

CHAIN OF CUSTODY

ACCUTEST.

495 Tech Center West Bldg. 1, Marlboro, MA 01752
(508) 481-6200 Fax: (508) 481-7753

NET Labs
Providence, RI

Q1004-09

Accutest Job #:

Client Information			Facility Information	
Consultants Name: Geologic Services Corporation			Project Name: Clinton	
Address: 30 Porter Rd.			Street: 582 Main Street	
City: Littleton	State: MA	Zip: 01460	City: Clinton	State: MA
Project Contact: Moira Johnson			Invoice Contact: Moira Johnson	
Phone #: 978-486-0060			Invoice Phone #: 978-486-0060	
Fax #: 978-486-0630			Location ID#: 2-0782	
AFE#:			PO#: Bill GSC	

Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Preservation: HCL	NaOH	HNO3	H2SO4	MEOH	Other	None	8260C with prep by 5030 - ONLY volatiles on attached RGP list	8270D with prep by 3535 or 3520C - ONLY Semivolatiles on attached RGP list	Hex Chrome (218.6) (unpres amber or plastic)	Analytical Information: Total CN (335.4)	TPH (1664)	Metals + Hg (6010 b/200.7 with prep by 3010) (HNO3) (unpres amber)	TSS (160.2)	TRC (330.5) (unpres amber)	PCBs (1668a)
GACINF01	~~9/21/2005~~ 10/4/05	0810	MSJ	GW	4			1				2			X			X	X	X	

Turnaround Information

- [x] Std. 14 Day Turnaround — Approved By:
- [ ] 7 Day EMERGENCY
- [ ] 4 Day EMERGENCY
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY

Emergency T/A is for FAX or Lablink Data

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] Full Deliverables
- [ ] Other
- [ ] FULL CLP
- [ ] State Forms
- [ ] Disk Deliverable Format____

Commercial "A" = Results Only

Accutest Log-in Information

NOTE: All minimum levels, test methods, and preparation methods must be in accordance with attached Appendix VI of the RGP Document.

TSS/TRC/Hex = 3 950mL unpres
Metals = HNO3

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
Moira Johnson	10/4/05 0930	1 GSC Fridge	2 Moira Johnson	10/4/05 10/20	2
Relinquished by Sampler:	Date Time:	Received By: 3	Relinquished By: 4		Received By: 4
Relinquished by Sampler:	Date Time:	Received By: 5 D. Sweeny 10/4/05 12:18	Seal #	Preserve where applicable: ☐	On Ice: ☒ Temp. 4°

New England ACCUTEST Laboratories

10/20/05

Technical Report for

Geologic Services Corporation

682 Main St., Clinton MA

Accutest Job Number: M51340

Sampling Date: 10/04/05

Report to:

GSC-Kleinfelder

ryarnell@kleinfelder.com

ATTN: Robin Yarnell

Total number of pages in report: **14**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Reza Tand
Lab Director

Certifications: MA (M-MA136) CT (PH-0109) NH (250204) RI (00071) ME (MA136) FL (E87579) NY (23346) NJ (MA926) NAVY USACE

Sections: 1 2 3

Table of Contents

Sample Summary

Geologic Services Corporation

682 Main St., Clinton MA

Job No: M51340

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
M51340-1	10/04/05	08:10	MSJ	10/04/05	AQ	Ground Water	GACINF01
M51340-1A	10/04/05	08:10	MSJ	10/04/05	AQ	Ground Water	GACINF01

Report of Analysis

Client Sample ID:	GACINF01		
Lab Sample ID:	M51340-1	**Date Sampled:**	10/04/05
Matrix:	AQ - Ground Water	**Date Received:**	10/04/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	682 Main St., Clinton MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G53841.D	1	10/18/05	AA	n/a	n/a	MSG2146
Run #2	G53847.D	5	10/18/05	AA	n/a	n/a	MSG2146

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	5.0	ug/l	
71-43-2	Benzene	13.4	0.50	ug/l	
108-86-1	Bromobenzene	ND	5.0	ug/l	
74-97-5	Bromochloromethane	ND	5.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	ug/l	
135-98-8	sec-Butylbenzene	21.1	5.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	ug/l	
75-15-0	Carbon disulfide	ND	5.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	2.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	2.0	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	GACINF01		
Lab Sample ID:	M51340-1	**Date Sampled:**	10/04/05
Matrix:	AQ - Ground Water	**Date Received:**	10/04/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	682 Main St., Clinton MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
123-91-1	1,4-Dioxane	ND	25	ug/l	
60-29-7	Ethyl Ether	ND	5.0	ug/l	
100-41-4	Ethylbenzene	163	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	31.9	5.0	ug/l	
99-87-6	p-Isopropyltoluene	23.0	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	51.5	5.0	ug/l	
103-65-1	n-Propylbenzene	73.3	5.0	ug/l	
100-42-5	Styrene	ND	5.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	15.3	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	594 [a]	25	ug/l	
108-67-8	1,3,5-Trimethylbenzene	183	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	345	1.0	ug/l	
95-47-6	o-Xylene	142	1.0	ug/l	
1330-20-7	Xylene (total)	487	1.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	GACINF01		
Lab Sample ID:	M51340-1	**Date Sampled:**	10/04/05
Matrix:	AQ - Ground Water	**Date Received:**	10/04/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	682 Main St., Clinton MA		

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%	103%	82-127%
2037-26-5	Toluene-D8	98%	95%	88-112%
460-00-4	4-Bromofluorobenzene	112%	96%	80-118%

(a) Result is from Run# 2

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest LabLink@15:21 20-Oct-2005

Report of Analysis

Client Sample ID:	GACINF01		
Lab Sample ID:	M51340-1	**Date Sampled:**	10/04/05
Matrix:	AQ - Ground Water	**Date Received:**	10/04/05
Method:	SW846 8270C SW846 3510C	**Percent Solids:**	n/a
Project:	682 Main St., Clinton MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F16254.D	1	10/11/05	PN	10/05/05	OP9768	MSF886
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

ABN PPL List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.3	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	ug/l	
88-75-5	2-Nitrophenol	ND	11	ug/l	
100-02-7	4-Nitrophenol	ND	21	ug/l	
87-86-5	Pentachlorophenol	ND	11	ug/l	
108-95-2	Phenol	ND	5.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	ug/l	
83-32-9	Acenaphthene	ND	5.3	ug/l	
208-96-8	Acenaphthylene	ND	5.3	ug/l	
120-12-7	Anthracene	11.7	5.3	ug/l	
92-87-5	Benzidine	ND	21	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.3	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.3	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.3	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.3	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.3	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	ug/l	
85-68-7	Butyl benzyl phthalate	ND	11	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	ug/l	
106-47-8	4-Chloroaniline	ND	11	ug/l	
218-01-9	Chrysene	ND	5.3	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	5.3	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.3	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	5.3	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	GACINF01		
Lab Sample ID:	M51340-1	**Date Sampled:**	10/04/05
Matrix:	AQ - Ground Water	**Date Received:**	10/04/05
Method:	SW846 8270C SW846 3510C	**Percent Solids:**	n/a
Project:	682 Main St., Clinton MA		

ABN PPL List

CAS No.	Compound	Result	RL	Units	Q
106-46-7	1,4-Dichlorobenzene	ND	5.3	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.3	ug/l	
84-74-2	Di-n-butyl phthalate	ND	11	ug/l	
117-84-0	Di-n-octyl phthalate	ND	11	ug/l	
84-66-2	Diethyl phthalate	ND	11	ug/l	
131-11-3	Dimethyl phthalate	ND	11	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	11	ug/l	
206-44-0	Fluoranthene	ND	5.3	ug/l	
86-73-7	Fluorene	ND	5.3	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.3	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	ug/l	
67-72-1	Hexachloroethane	ND	5.3	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.3	ug/l	
78-59-1	Isophorone	ND	5.3	ug/l	
91-20-3	Naphthalene	104	5.3	ug/l	
98-95-3	Nitrobenzene	ND	5.3	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.3	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	ug/l	
85-01-8	Phenanthrene	83.2	5.3	ug/l	
129-00-0	Pyrene	15.1	5.3	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.3	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		10-120%
4165-62-2	Phenol-d5	32%		10-120%
118-79-6	2,4,6-Tribromophenol	98%		31-123%
4165-60-0	Nitrobenzene-d5	96%		32-120%
321-60-8	2-Fluorobiphenyl	40%		32-120%
1718-51-0	Terphenyl-d14	36%		33-123%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	GACINF01		
Lab Sample ID:	M51340-1	**Date Sampled:**	10/04/05
Matrix:	AQ - Ground Water	**Date Received:**	10/04/05
Method:	EPA 504 EPA 504	**Percent Solids:**	n/a
Project:	682 Main St., Clinton MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ29108.D	1	10/15/05	CZ	10/14/05	OP9830	GYZ1210
Run #2							

	Initial Volume	Final Volume
Run #1	35.3 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	0.093	0.015	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	106%		26-158%
460-00-4	Bromofluorobenzene (S)	117%		26-158%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: GACINF01
Lab Sample ID: M51340-1
Matrix: AQ - Ground Water
Method: EPA 608 SW846 3510C
Project: 682 Main St., Clinton MA

Date Sampled: 10/04/05
Date Received: 10/04/05
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ28875.D	1	10/07/05	CZ	10/06/05	OP9777	GYZ1201
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	5.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	Units	Q
12674-11-2	Aroclor 1016	ND	0.51	ug/l	
11104-28-2	Aroclor 1221	ND	0.51	ug/l	
11141-16-5	Aroclor 1232	ND	0.51	ug/l	
53469-21-9	Aroclor 1242	ND	0.51	ug/l	
12672-29-6	Aroclor 1248	ND	0.51	ug/l	
11097-69-1	Aroclor 1254	ND	0.51	ug/l	
11096-82-5	Aroclor 1260	ND	0.51	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	64%		44-132%
877-09-8	Tetrachloro-m-xylene	57%		44-132%
2051-24-3	Decachlorobiphenyl	81%		12-151%
2051-24-3	Decachlorobiphenyl	68%		12-151%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest LabLink@15:21 20-Oct-2005

Report of Analysis

Client Sample ID:	GACINF01		
Lab Sample ID:	M51340-1	**Date Sampled:**	10/04/05
Matrix:	AQ - Ground Water	**Date Received:**	10/04/05
		Percent Solids:	n/a
Project:	682 Main St., Clinton MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	< 0.010	0.010	mg/l	1	10/06/05 16:22	MA	EPA 335.3
Oil And Grease, Gravimetric	17.3	5.1	mg/l	1	10/05/05	BF	EPA 1664

RL = Reporting Limit

Accutest LabLink@15:21 20-Oct-2005

Report of Analysis

Client Sample ID:	GACINF01		
Lab Sample ID:	M51340-1A	**Date Sampled:**	10/04/05
Matrix:	AQ - Ground Water	**Date Received:**	10/04/05
Method:	SW846 8270C BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	682 Main St., Clinton MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F16341.D	5	10/14/05	PN	10/07/05	OP9772	MSF889
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	Units	Q
87-86-5	Pentachlorophenol	ND	5.3	ug/l	
83-32-9	Acenaphthene	15.6	0.53	ug/l	
208-96-8	Acenaphthylene	5.7	0.53	ug/l	
120-12-7	Anthracene	ND	0.53	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.27	ug/l	
50-32-8	Benzo(a)pyrene	1.1	0.53	ug/l	
205-99-2	Benzo(b)fluoranthene	4.4	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	5.6	0.53	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.53	ug/l	
218-01-9	Chrysene	1.2	0.53	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.53	ug/l	
206-44-0	Fluoranthene	2.2	0.53	ug/l	
86-73-7	Fluorene	40.8	0.53	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	3.2	0.53	ug/l	
91-57-6	2-Methylnaphthalene	281	1.1	ug/l	
91-20-3	Naphthalene	125	0.53	ug/l	
85-01-8	Phenanthrene	71.4	0.53	ug/l	
129-00-0	Pyrene	13.5	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	40%		10-120%
4165-62-2	Phenol-d5	33%		10-120%
118-79-6	2,4,6-Tribromophenol	84%		23-135%
4165-60-0	Nitrobenzene-d5	43%		30-120%
321-60-8	2-Fluorobiphenyl	30%		25-120%
1718-51-0	Terphenyl-d14	33%		24-132%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST

495 Tech Center West, Bldg. 1, Marlboro, MA 01752
(508) 481-6200 Fax: (508) 481-7753

Accutest Job #: M51340

Client Information			Facility Information		
Consultants Name	Geologic Services Corporation		Project Name	Clinton	
Address	30 Porter Rd.		Street	682 Main Street	
City	Littleton	State: MA, Zip: 01460	City	Clinton	State: MA
Project Contact:	Moira Johnson		Invoice Contact:	Moira Johnson	
Phone #:	978-486-0060		Invoice Phone #	978-486-0060	
Fax #:	978-486-0630		Location ID#	2-0762	
AFE#			PO#	Bill GSC	

Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Preservation: HCL	NaOH	HNO3	H2SO4	MEOH	Other	None	8260C with prep by 5030 - ONLY volatiles on attached RGP list	8270D with prep by 3535 or 3520C - ONLY Semivolatiles on attached RGP list	Hex Chrome (218.6)	Total CN (335.4)	TPH (1664)	Metals + Hg (6010 b/200.7 with prep by 3010)	TSS (160.2)	TRC (330.5)	PCBs (1668a)	EDB (via SOM.)	Oil + Grease
GACINF01 - 1	~~9/21/2005~~ 10/4/05	0810	MSJ	GW	11	4	1				2		X	X		X	X		X		X	X	X

Turnaround Information		Data Deliverable Information		Accutest Log-in Information
[X] Std. 14 Day Turnaround	Approved By:	[ ] Commercial "A"	[ ] FULL CLP	
[ ] 7 Day *EMERGENCY*		[ ] Commercial "B"	[ ] State Forms	NOTE: All minimum levels, test methods, and preparation methods must be in accordance with attached Appendix VI of the RGP Document.
[ ] 4 Day *EMERGENCY*		[ ] Full Deliverables	[ ] Disk Deliverable Format____	
[ ] 3 Day *EMERGENCY*		[ ] Other		
[ ] 2 Day *EMERGENCY*				EDB prep w/ Sodium thiosulfate
[ ] 1 Day *EMERGENCY*				
Emergency T/A is for FAX or Lablink Data		Commercial "A" = Results Only	Loc. 4F, 13D, 4H4, 1C	

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
Moira Johnson	10/4/05 0900	1 Myriam Swelney	2		2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
		3	4		4
Relinquished by Sampler:	Date Time:	Received By:	Seal #	Preserve where applicable	On Ice: 3.9°C Temp.
		5			

M51340: Chain of Custody
Page 1 of 1

ATTACHMENT D
STREAMSTAT OUTPUT

Clinton RGP

Streamflow Statistics Report

Date: Thu May 18 14:41:46 2006
Latitude: 42.4333
Longitude: -71.682
Measured Basin Characteristics:
Drainage Area (square miles): 126.38
Stratified Drift Area (square miles): 29.70
Stream Length (miles): 245.05
Slope (percent): 4.41
Region: 0

Statistic	Estimated streamflow, ft^3/s	90% Prediction interval	
		Minimum	Maximum
99-percent duration flow	8.67	1.92	36.61
98-percent duration flow	10.70	2.50	43.30
95-percent duration flow	16.83	4.51	60.69
90-percent duration flow	24.91	7.34	82.70
85-percent duration flow	32.15	10.03	101.21
80-percent duration flow	39.98	12.39	127.20

75-percent duration flow	49.36	15.79	152.44
70-percent duration flow	62.81	20.33	192.15
60-percent duration flow	101.97	42.91	240.88
50-percent duration flow	132.88	60.01	293.06
7-day, 2-year low flow	16.83	4.15	65.69
7-day, 10-year low flow	8.36	1.75	37.32
August median flow	32.76	10.23	103.05

U.S. Department of the Interior, U.S. Geological Survey
10 Bearfoot Road
Northborough, MA 01532
(508) 490-5000

Maintainer: webmaster@mass1.er.usgs.gov