BENNETT ENVIRONMENTAL ASSOCIATES, INC.

LICENSED SITE PROFESSIONALS, ENVIRONMENTAL SCIENTISTS, GEOLOGISTS, SANITARIANS

1573 Main Street, P.O. Box 1743
Brewster, MA 02631

(508) 896-1706
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LETTER OF TRANSMITTAL

TO:

US EPA - Region 1
c/o Ms. Shelley Puleo
Industrial NPDES Permits (CMU)
1 Congress Street (Suite 1100)
Boston, MA 02114-2023

DATE:

December 11, 2008

JOB NUMBER:

BEA08-10059

SHIPPING METHOD:

Regular Mail	☐	Pick Up	☐
Priority Mail	☐	Hand Deliver	☐
Express Mail	☒	Other_____	☐
Certified Mail	☐	Green Card/RR	☒

REGARDING:

NPDES RGP PERMIT APPLICATION
RELEASE ABATEMENT MEASURE [RTN 4-21678]
Saint Christopher's Church
625 Main Street
Chatham, MA

COPIES	DATE	DESCRIPTION
1	12/9/08	NPDES RGP Filing package w/ Supporting Documents

For review and comment: ☒ For approval: ☒ As requested: ☐ For your use: ☐

REMARKS:

The attached NPDES RGP permit application is being submitted through Bennett Environmental Associates (BEA) as the Environmental Consultant and LSP providing oversight to the Property Owner (Saint Christopher Church) and their Contractors (Delphi Construction, Inc. and Robert B. Our Company, Inc.). BEA was engaged when low level oil contamination to soil and groundwater was identified during construction activities wherein de-watering is required. The NPDES RGP permit is part of, and incorporated in, the MCP response actions being conducted as a Release Abatement Measure as being submitted to the MA DEP.
Our analytical results to date (attached GWA Lab ID 121881) indicated an initial lead concentration of 66 and iron concentration 19,000 ug/L in excess of the Appendix 3 limit of 8.5 and 1,000 ug/L respectively. As based on REDUA and data validation review, it was suspected that the total metal analysis represented the particulate matter wherein the dissolve lead concentration in the re-testing of the sample held by the lab (attached GWA Lab ID 122083) reported the lead concentration of non detect (<5ppb). This supports our approach that removal of solids via flocculation / settling / bag filtering will remove suspended solids as well as adsorbed metals species and that granular activated carbon treatment of the clarified water will meet all the Appendix 3, SA marine water discharge standards.
We would appreciate your assistance in expediting review and approval of this applications as impeding work progress and driving additional cost and damages to the property owner. Please call our office with any questions or for additional information. Thank you.

FROM: David C. Bennett, LSP - President

If enclosures are not as noted, kindly notify us at once

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:** Saint Christopher's Church		**Facility/site** address:		
Location of **facility/site:** longitude: 444055.49 latitude: 695736.89	Facility SIC code(s): 2531	Street: 625 Main Street		
b) Name of **facility/site owner:** Saint Christopher's Church		Town: Chatham		
Email address of owner: bxmwood@concast.net		State: MA	Zip: 02633	County: Barnstable
Telephone no.of facility/site **owner:** 508-737-3925				
Fax no. of facility/site **owner:** none		**Owner** is (check one): 1. Federal____ 2. State/Tribal____ 3. Private ✓ 4. other, if so, describe:		
Address of **owner** (if different from site):				
Street:				
Town:	State:	Zip:	County:	
c) Legal name of **operator:** Robert B. Our Co., Inc	**Operator** telephone no: 508-432-0530			
	Operator fax no.: 508-432-7057		**Operator** email:	
Operator contact name and title: Ms. Abby Our, Construction Mgr.				
Address of **operator** (if different from owner):	Street: PO Box 1539			
Town: Harwich	State: MA	Zip: 02645	County: Barnstable	

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: RTN 4-21678 2. permit or license # assigned: 3. state agency contact information: name, location, and telephone number: Courtland Ridings MADEP, Lakeville 508-946-2722	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:

dewatering of historically petroleum impacted groundwater for footing construction w/ sediment settling/flocculation, bag filters and activated carbon treatment prior to discharge

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 0.2228 Average flow 0.1114 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. 444055.49 lat. 695736.89; 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 12/15/08 end 04/15/09

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		✓	1	groundwater	SM2450D	10ppm			64,000	17.4
2. Total Residual Chlorine		✓	1	grab	TRC0712W	0.2ppm			300	0.08
3. Total Petroleum Hydrocarbons		✓	1	groundwater	8015B	0.2ppm			900	0.24
4. Cyanide	✓		1	groundwater	EPA9012A	0.01ppm				
5. Benzene	✓		1	groundwater	8260	3ppb				
6. Toluene	✓		1	groundwater	8260	3ppb				
7. Ethylbenzene	✓		1	groundwater	8260	3ppb				
8. (m,p,o) Xylenes	✓		1	groundwater	8260	3ppb				
9. Total BTEX[4]	✓		1	groundwater	8260	3ppb				

[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 [5] (1,2- Dibromo-methane)	✓		1	groundwater	8260B	0.02ppb				
11. Methyl-tert-Butyl Ether (MtBE)	✓		1	groundwater	8260B	3ppb				
12. tert-Butyl Alcohol (TBA)	✓		1	groundwater	8260B	100ppb				
13. tert-Amyl Methyl Ether (TAME)	✓		1	groundwater	8260B	3ppb				
14. Naphthalene	✓		1	groundwater	8270C	0.5ppb				
15. Carbon Tetra-chloride	✓		1	groundwater	8260B	3ppb				
16. 1,4 Dichlorobenzene	✓		1	groundwater	8260B	3ppb				
17. 1,2 Dichlorobenzene	✓		1	groundwater	8260B	3ppb				
18. 1,3 Dichlorobenzene	✓		1	groundwater	8260B	3ppb				
19. 1,1 Dichloroethane	✓		1	groundwater	8260B	3ppb				
20. 1,2 Dichloroethane	✓		1	groundwater	8260B	3ppb				
21. 1,1 Dichloroethylene	✓		1	groundwater	8260B	3ppb				
22. cis-1,2 Dichloro-ethylene	✓		1	groundwater	8260B	3ppb				
23. Dichloromethane (Methylene Chloride)	✓		1	groundwater	8260B	3ppb				
24. Tetrachloroethylene	✓		1	groundwater	8260B	3ppb				

[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	✓		1	groundwater	8260B	3ppb				
26. 1,1,2 Trichloroethane	✓		1	groundwater	8260B	3ppb				
27. Trichloroethylene	✓		1	groundwater	8260B	3ppb				
28. Vinyl Chloride	✓		1	groundwater	8260B	3ppb				
29. Acetone	✓		1	groundwater	8260B	3ppb				
30. 1,4 Dioxane	✓		1	groundwater	8260B	2500ppb				
31. Total Phenols	✓		1	groundwater	8270C	5ppb				
32. Pentachlorophenol	✓		1	groundwater	8270C	1ppb				
33. Total Phthalates [6] (Phthalate esthers)	✓		1	groundwater	8270C	5ppb				
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	✓		1	groundwater	8270C	5ppb				
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	✓		1	groundwater	8270C	0.1ppb				
a. Benzo(a) Anthracene	✓		1	groundwater	8270C	0.1ppb				
b. Benzo(a) Pyrene	✓		1	groundwater	8270C	0.1ppb				
c. Benzo(b)Fluoranthene	✓		1	groundwater	8270C	0.1ppb				
d. Benzo(k) Fluoranthene	✓		1	groundwater	8270C	0.1ppb				
e. Chrysene	✓		1	groundwater	8270C	0.1ppb				

[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	✓		1	GW grab	8270	<0.01				
g. Indeno(1,2,3-cd) Pyrene	✓		1	GW grab	8270	<0.01				
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)										
h. Acenaphthene	✓		1	GW grab	8270	0.5				
i. Acenaphthylene	✓		1	GW grab	8270	<0.01				
j. Anthracene	✓		1	GW grab	8270	0.5				
k. Benzo(ghi) Perylene	✓		1	GW grab	8270	<0.01				
l. Fluoranthene	✓		1	GW grab	8270	0.5				
m. Fluorene	✓		1	GW grab	8270	0.5				
n. Naphthalene-	✓		1	GW grab	8270	0.5				
o. Phenanthrene	✓		1	GW grab	8270	0.5				
p. Pyrene	✓		1	GW grab	8270	0.5				
37. Total Polychlorinated Biphenyls (PCBs)	✓		1	GW grab	8082	0.2				
38. Antimony	✓		1	GW grab	200	0.003				
39. Arsenic	✓		1	GW grab	200	<0.01				
40. Cadmium	✓		1	GW grab	200	0.0025				
41. Chromium III	✓		1	GW grab	200	<0.01				
42. Chromium VI	✓		1	GW grab	7196	<0.01				

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	groundwater	EPA 200	0.025ppm				
44. Lead		✓	1	grab	EPA 200	0.001ppm			66	0.02
45. Mercury	✓		1	gw grab	EPA 200	0.002ppm				
46. Nickel	✓		1	gw grab	EPA 200	0.04ppm				
47. Selenium	✓		1	gw grab	EPA 200	0.05ppm				
48. Silver	✓		1	gw grab	EPA 200	0.007ppm				
49. Zinc	✓		1	gw grab	EPA 200	0.2ppm				
50. Iron		✓	1	gw grab	EPA 200	0.1ppm			19,000	5.2
Other (describe): total chrome		✓	1	gw grab	EPA200	0.0025ppm			10	0.004

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:						
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): floculation in 1st, wiered frac tank			
c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate**(s) (gallons per minute) of the treatment system: Average flow rate of discharge 50 Maximum flow rate of treatment system 100 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: excavation dewatering of groundwater through settling/floculation, bag filters& GAC & into storm drain on Main Street & via conveyances to Oyster Pond						
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 SA						
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water not applicable 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 ? 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: Saint Christopher"s Church

Operator signature: Abigail Our, RBO 12/10/08

Title: Abigail Our, Construction Manager for Robert B. Our Co., Inc.

Date: 12-9-08

7. Supplemental Information:

Figure 1. Site Locus Map on USGS topo
Figure 2. Regional Groundwater Contour Map
Figure 3. MA GIS Priority Resource Map
Figure 4. Site & Outfall Loci on NHESP Map

Attachments.
NHESP Response re No Filing necessary
Robert B. Our Process Flow Schematic
MSDS for Sediment Flocculant
Schematics for Frac Tanks (18,000 gal & 20,000 gal), Strainers, Filters and GAC elements
Analytical Data for raw influent groundwater GWA Lab ID 121881
And GWA Lab ID 122083 post treatment groundwater w/ non detect for lead

FIGURES

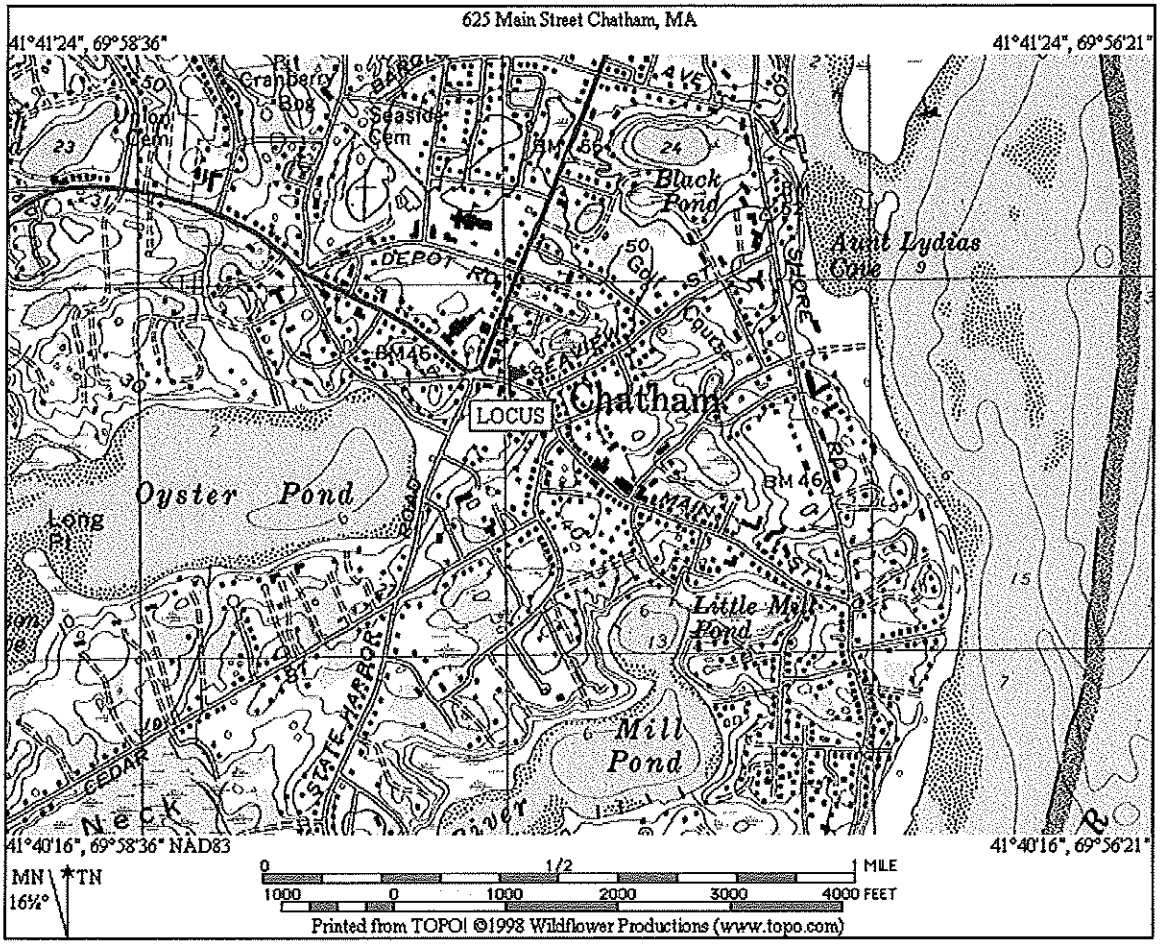


FIGURE 1:

The subject Site located at 625 Main Street in Chatham, MA east of the intersection of Main Street (Route 28) and Old Harbor Road (Route 28). The Site, developed by St. Christopher's Church and is identified on Chatham Assessor's Map 14E as Parcel 41A and contains some 0.81 acres of land. The immediately surrounding area is characterized as highly developed with year-round commercial and industrial-use properties. Seasonal and year-round commercial and residential properties surround the Subject Property. The westerly abutting CVS property is a former MADEP disposal site currently closed via a Class A-3 RAO.

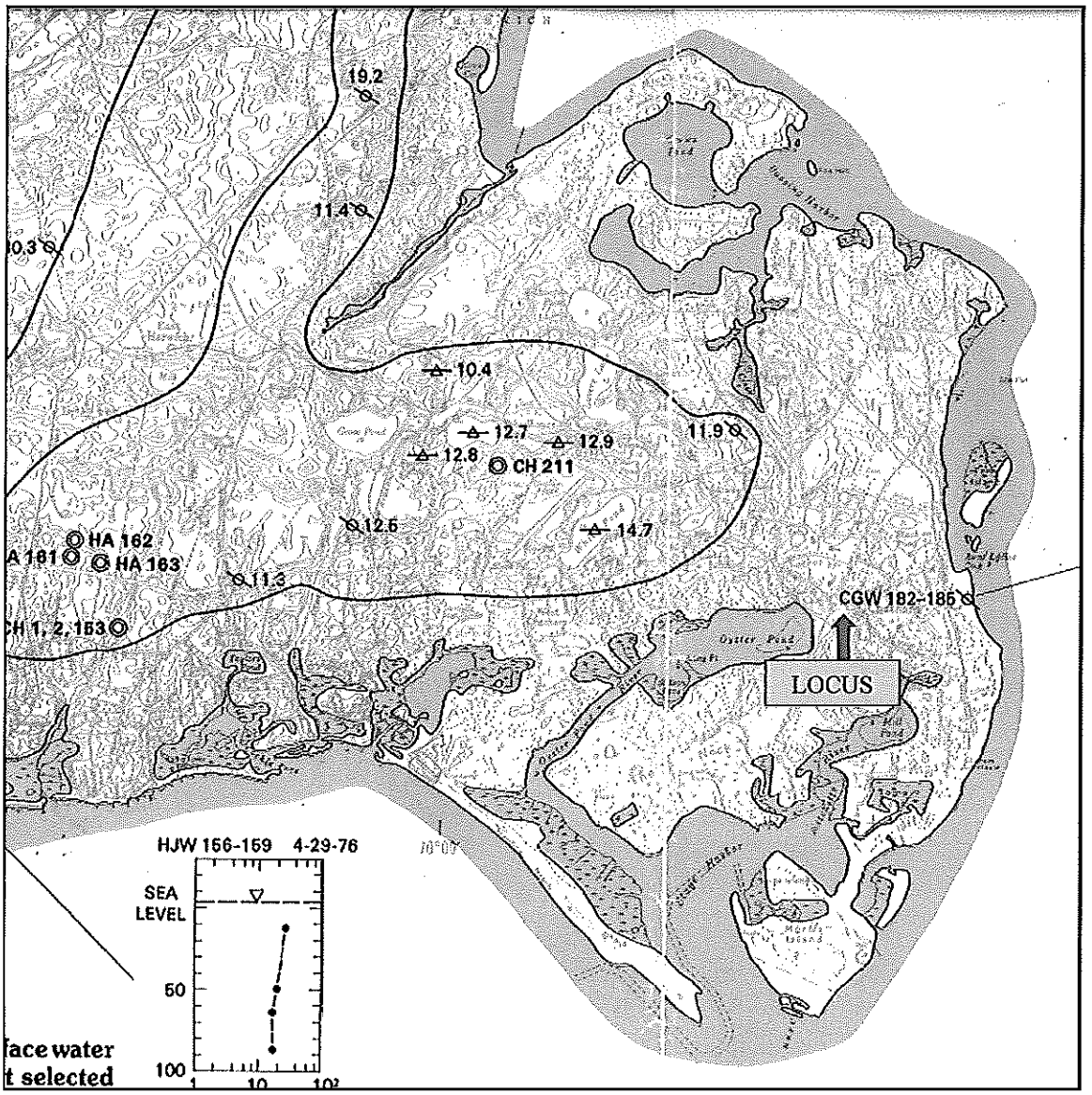


FIGURE 2:

Site-specific groundwater was encountered at approximately 5' below grade surface (bgs). Regional groundwater contours illustrate a southeasterly flow direction towards Stage Harbor, associated surface water bodies and ultimately Chatham Harbor. Site-specific groundwater flow is likely more westerly and towards Oyster Pond and Oyster River.

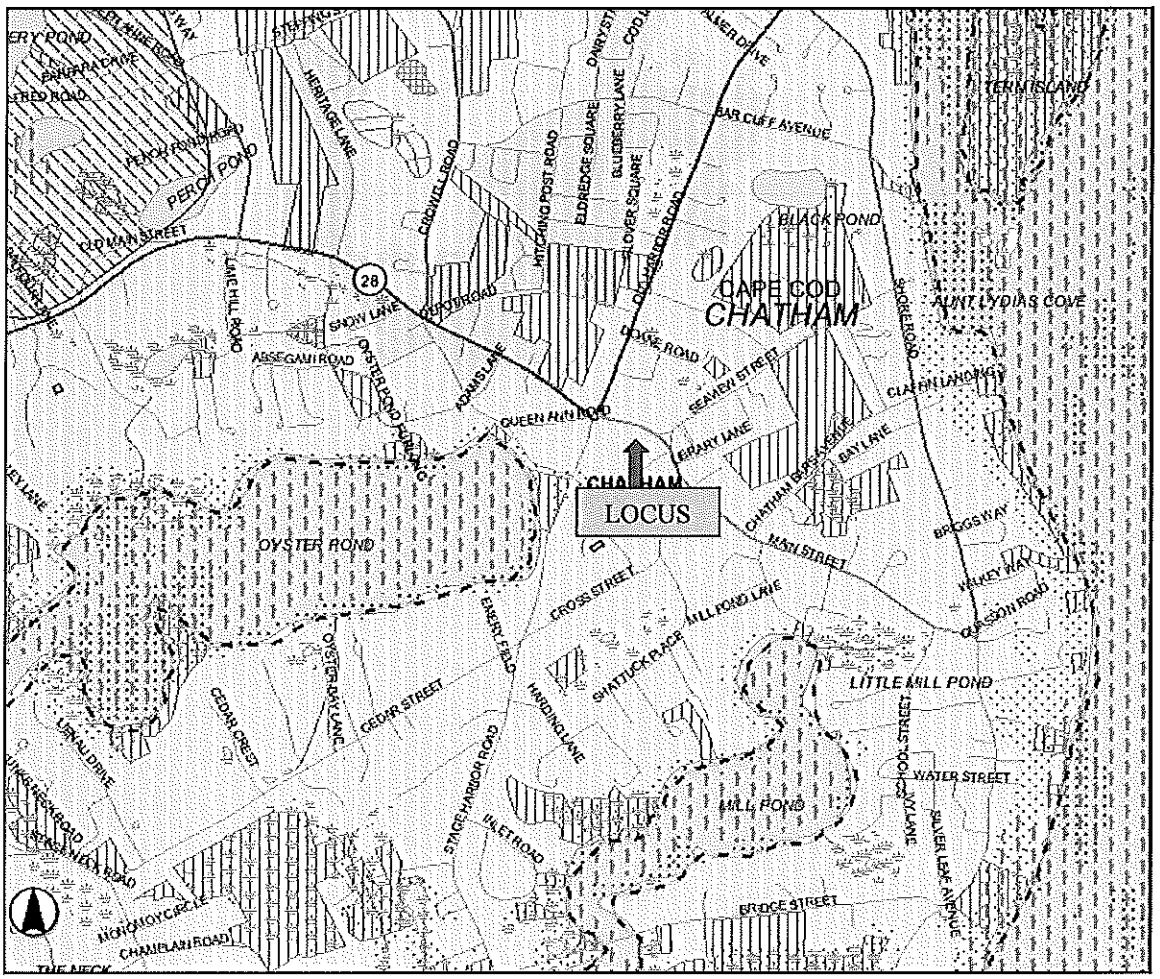


FIGURE 3:

According to the MA GIS Priority Resource mapping, the Subject Property is not located within the Zone II of any public water supply wells. The property is not within 500' of any known private potable well or within the Zone A of any surface water supply. The property is located within a medium-yield Potential Drinking Water Source Area (PDWSA). As such, the RCGW-1 Reportable Concentrations are applicable for groundwater quality, while the GW-1, GW-2 and GW-3 groundwater criteria are applicable in Method 1-Risk Characterization. In addition, based on site features, the RCS-1 Reportable Concentrations are considered applicable for soils, while the S-1, S-2, S-3/GW-1, GW-2 and GW-3 soil categories are considered applicable relative to frequency/intensity of use and accessibility in Method 1 - Risk Characterization. This criterion is used to determine notification and/or remedial response liabilities pursuant to 310 CMR 40.0000.

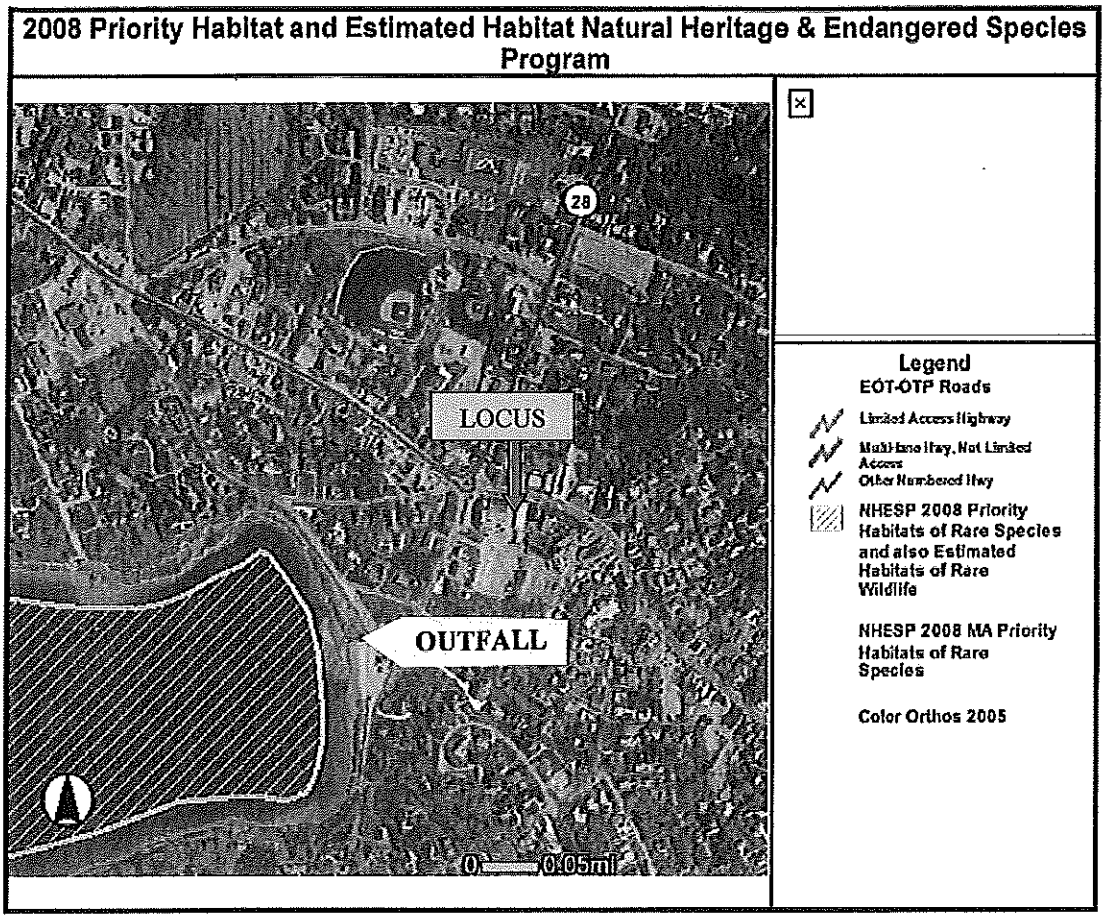


FIGURE: 4
Site Locus (St. Christopher's Church) with location of stormdrain outfall on Oyster Pond

NHESP Response

Brian Clarke

From: Veinotte, Amanda [Amanda.Veinotte@state.ma.us]
Sent: Monday, December 08, 2008 3:00 PM
To: Brian Clarke
Subject: RE: Oyster Pond Chatham

Dear Brian:

The NHESP has reviewed the information you have provided and determined that no filing is necessary for this project. If you need a rare species list, please provide a MESA Information Request Form with the $50 fee.

Thank you,

Amanda Veinotte

-----Original Message-----
From: Brian Clarke [mailto:bclarke@bennett-ea.com]
Sent: Monday, December 08, 2008 1:24 PM
To: Veinotte, Amanda (FWE)
Subject: Oyster Pond Chatham

I got your name from Amy as she is on vaca this week. I am attaching a site locus / NHESP map and wondered if you could help me expedite the process as I am filing a NPDES RGP ASAP. St. Christopher's Church is renovating and encountered some historic petroleum contamination. They must dewater for the footings and we are treating the water via settling/flocculation/filtering and carbon prior to the clean water entering the stormdrain system and ultimately Oyster Pond. Any suggestions? There is a 5-10 day lag period for the RGP. Thanks in advance for any help.

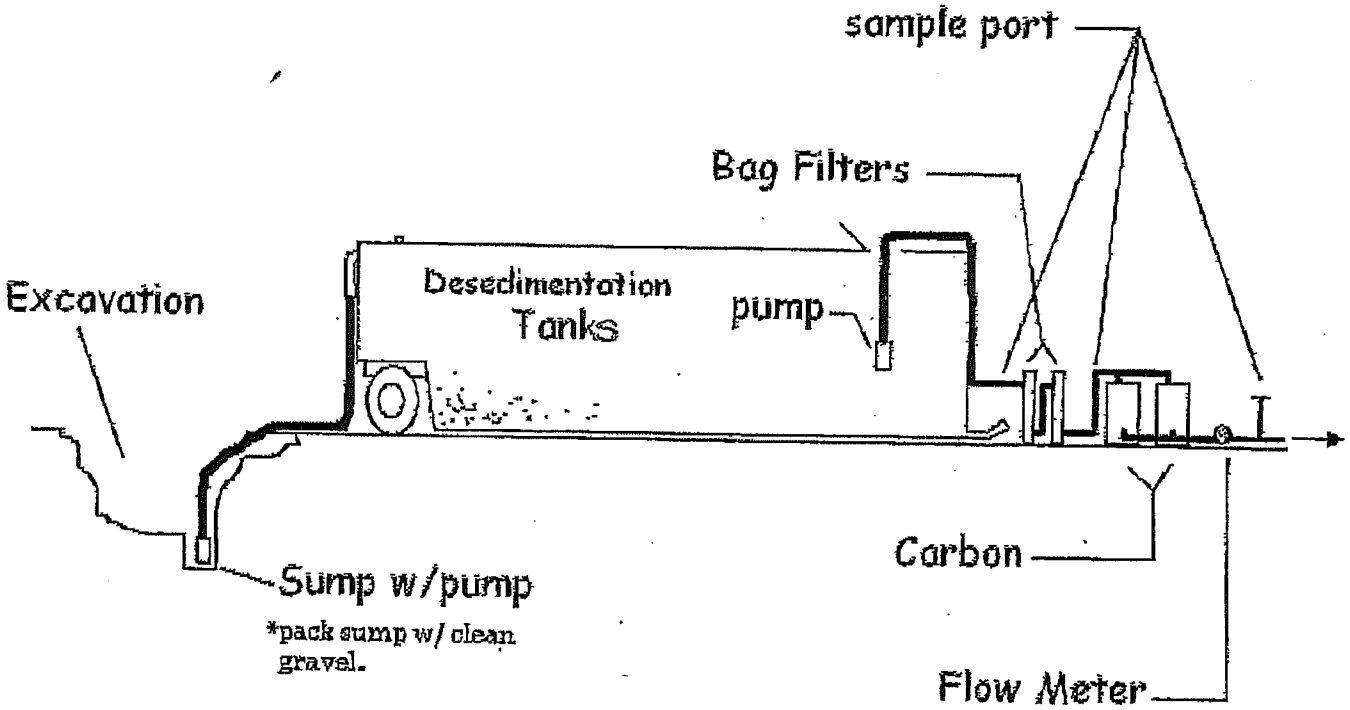
Brian Clarke
Geologist

BENNETT ENVIRONMENTAL ASSOCIATES, INC
1573 Main Street / P.O. Box 1743
Brewster, MA 02631
508-896-1706
508-896-5109 fax
http://bennett-ea.com

Process Flow Schematic

Robert B. Our Co., Inc.

Process Flow Diagram



Excavation dewatering of groundwater @ 50gpm into;

1- 18,000 gal. Weir baffled frac tank w/ flocculant (see attached MSDS)
2- 21,000 gallon frac tank
3- pumped from frac tank #2 thru bag filters and granular activated carbon vessels
4- clean effluent pumped to stormdrain collection system and ultimately Oyster Pond

MSDS for
Sediment Flocculant

Updated 10/23/06

Applied Polymer Systems, Inc.

Material Safety Data Sheet

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

Product Name: APS 703d #3 Floc Log®

Supplied:
Applied Polymer Systems, Inc.
519 Industrial Drive
Woodstock, GA 30189
Tel. 678-494-5998
Fax. 678-494-5298
www.slitstop.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Identification of the preparation: Anionic water-soluble Co-polymer gel

3. HAZARD IDENTIFICATION

Placement of these materials on wet walking surface will create extreme slipping hazard.

4. FIRST AID MEASURES

Inhalation: None

Skin contact: Contact with wet skin could cause dryness and chapping. Wash with water and soap. Use of gloves recommended.

Eye contact: Rinse thoroughly with plenty of water, also under the eyelids, seek medical attention in case of persistent irritation.

Ingestion: Consult a physician

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Water, water spray, foam, carbon dioxide, dry powder.

Special fire-fighting precautions: Floc Logs that become wet render surfaces extremely slippery.

Protective equipment for firefighters: No special equipment required.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: No special precautions required.

Methods for cleaning up: Dry wipe as well as possible. Keep in suitable and closed containers for disposal. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Handling: Avoid contact with skin and eyes. Wash hands after handling.

Storage: Keep in a cool, dry place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Frac Tank Schematics

Toll free: 800-421-7471
Fax: 973-466-3040

Specifications for:

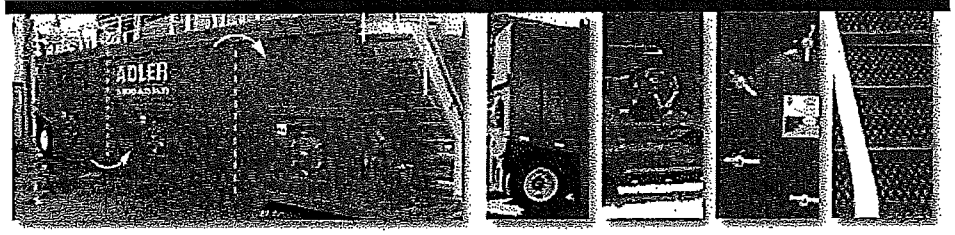
18,000 Gallon Weir Tank

Mechanical features:

- 4" top fill tube
- 4 Standard 22" side hinged accessways
- Multiple 4" valved fill/drain ports including floor level valves for low point drain out
- 4" Vent
- Sloped bottom for 100% drain out and easier cleaning after use
- Smooth wall construction - no internal cross bracing
- Front mounted ladderwell for top access
- Fixed rear axle
- Nose rail cut - out for easy access when installing hose and fittings on the front /bottom of tank
- Equipped with internal baffles or weirs (over and under) to accelerate settling of unwanted solids and fine sediments, may also be used in the separation of unwanted floating materials
- This tank can be used in a pump through capacity or in a batch treatment capacity
- Flows of up to 100 GPM are achievable depending on your circumstances. The tank may also be modified to achieve higher flows while keeping efficiency
- Contact your local representative for assistance

Safety features:

- All tanks are equipped with non-slip step material on ladderwells and catwalks
- All tanks are equipped with folding safety handrails
- All rails and catwalks are painted "safety yellow" for high visibility
- Safe operation reminder decals are applied on risk areas such as steps, valves and hatches
- Tanks are equipped with fill level charts and may be fitted with audible alarms, strobes and level gauges(digital and mechanical)



Close Window

Toll free: 800-421-7471
Fax: 973-466-3040

Specifications for:

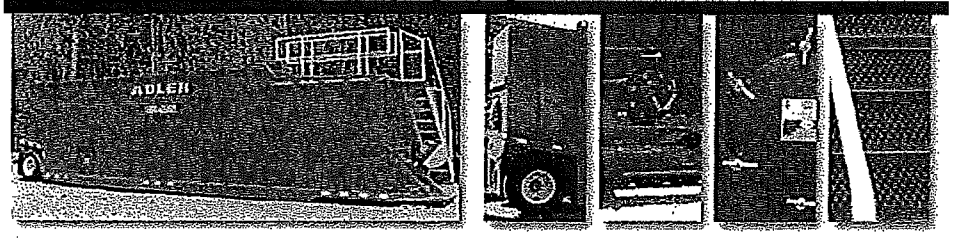
21,000 Gallon Frac Tank

Mechanical features:

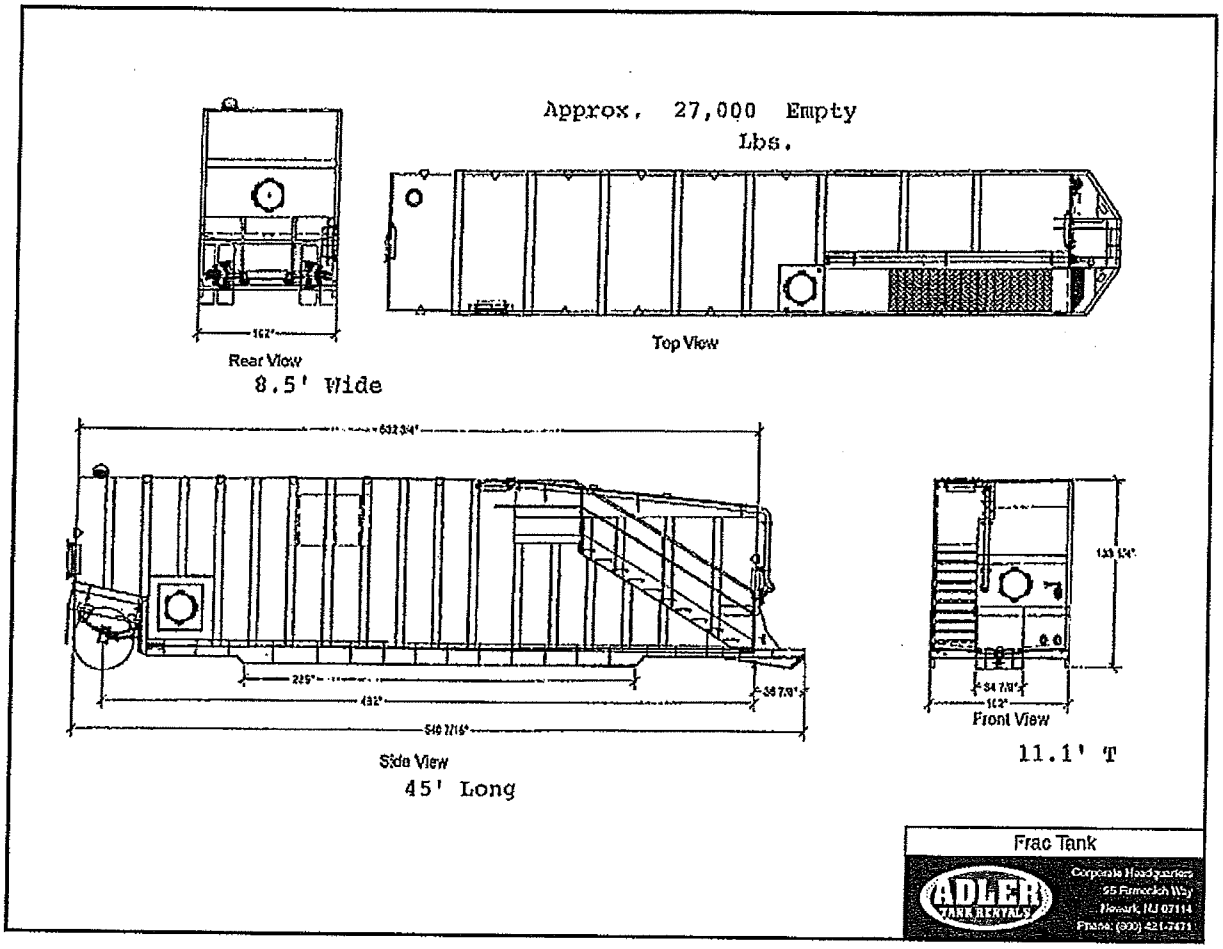
- 4" top fill tube
- 4 Standard 22" side hinged accessways
- Multiple 4" valved fill/drain ports including floor level valves for low point drain out
- 4" Vent
- Sloped bottom for 100% drain out and easier cleaning after use
- Smooth wall construction - no internal cross bracing
- Front mounted ladderwell for top access
- Fixed rear axle
- Nose rail cut - out for easy access when installing hose and fittings on the front /bottom of tank

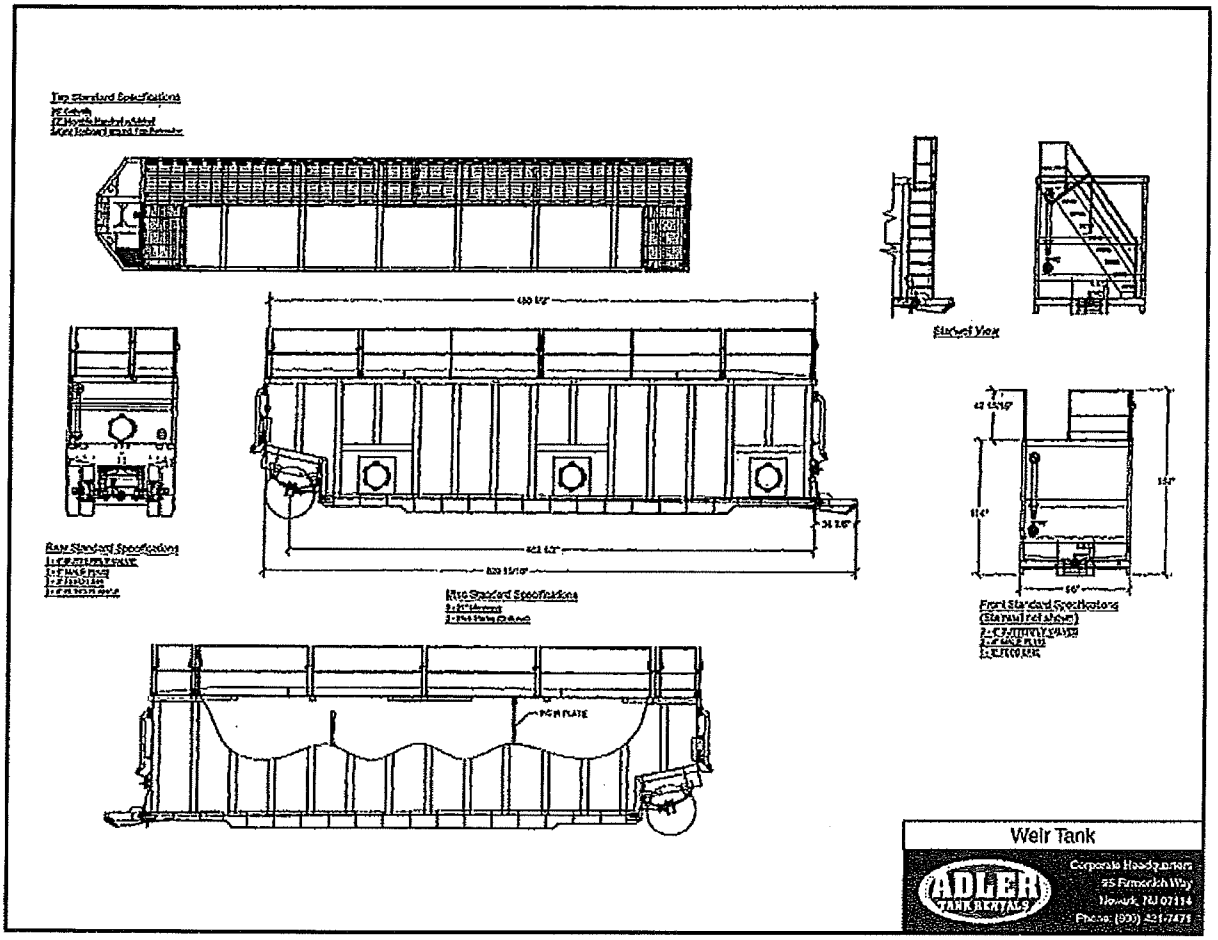
Safety features:

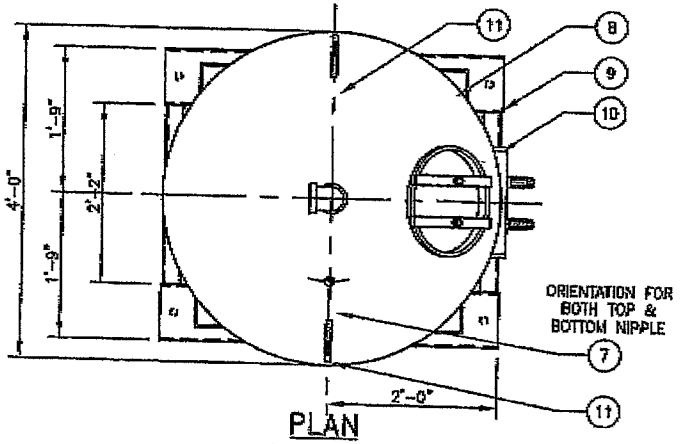
- All tanks are equipped with non-slip step material on ladderwells and catwalks
- All tanks are equipped with folding safety handrails
- All rails and catwalks are painted "safety yellow" for high visibility
- Safe operation reminder decals are applied on risk areas such as steps, valves and hatches
- Tanks are equipped with fill level charts and may be fitted with audible alarms, strobes and level gauges(digital and mechanical)



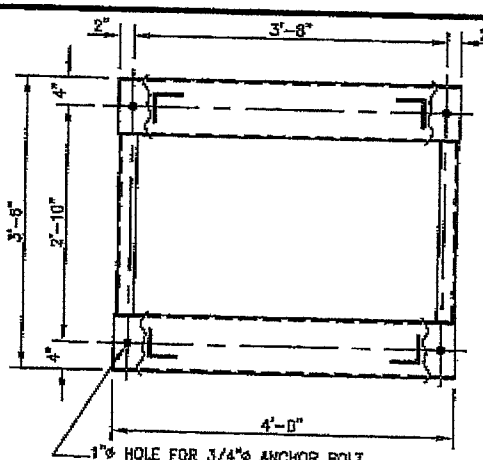
Close Window


Approx. 27,000 Empty Lbs.
Rear View
8.5' Wide
Top View
Side View
45' Long
Front View
11.1' T
Frac Tank
ADLER TANK RENTALS
Corporate Headquarters
55 Fieldcrest Way
Newark, NJ 07114
Phone: (800) 421-7471

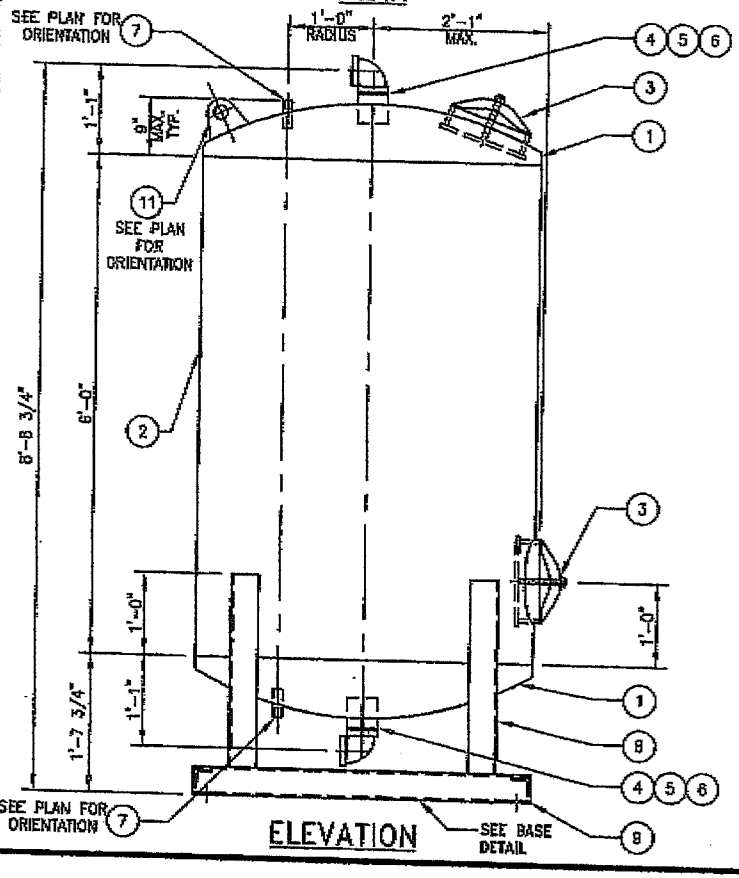

Weir Tank
ADLER TANK RENTALS
Corporate Headquarters
Newark, NJ 07114



PLAN



BASE DETAIL



ELEVATION

#	QTY.	DESCRIPTION
1	2	C.S. STD. Flanged&Dished Non-Code tank head 3/16" THK.
2	1	C.S. 3/16" THK. x 48" OD x 72" Long
3	2	C.S. Elliptical Non-Code Manway Assembly 12"x16" w/ 2 yoke
4	2	3"ø, 150 LBS, C.S. Black Pipe Threaded Coupling
5	2	3"ø, SCH 40, C.S. Close Threaded Nipple
6	2	3"ø, 150 LBS, C.S. Black Pipe 90° Elbow
7	2	1"ø, SCH 40, C.S. 4" Long Threaded Nipple
8	4	Angle 4" x 4" x 1/4" Support Leg
9	2	HSS 8" x 4" x 1/4" Base
10	2	Angle 2 1/2" x 2 1/2" x 1/4" Cross Tie
11	2	Lifting Lug (Design by Fabricator, See Note 2)

GENERAL NOTES

1) MATERIAL SHALL BE CARBON STEEL GRADE A 36 UNLESS NOTED OTHERWISE.

2) FABRICATOR TO DESIGN LIFTING LUGS TO MEET 5500 LBS LIFTING REQUIREMENT.

3) TANK INTERIOR SHALL BE SANDBLASTED TO SSPC-SP-5 WHITE METAL FINISH, PAINTING BY OTHERS.

4) TANK EXTERIOR SANDBLASTING AND PAINTING BY OTHERS.

5) TANK SHALL BE LEVEL +/- ONE DEGREE.

6) FABRICATION TOLERANCE SHALL BE +/- (1/4) INCH.

7) UNLESS NOTED OTHERWISE, ALL WELDS SHALL BE SEAL WELD, ALL JOINTS SHALL BE WELDED BOTH SIDE WHERE APPLICABLE.

8) STEEL PLATES JOINING METHOD SHOWN ARE INTENDED FOR REFERENCES ONLY. FINAL STEEL JOINING METHOD SHALL BE DETERMINE BY FABRICATOR TO SUIT THEIR SHOP PREFERENCES.

9) THE TANK SHALL BE PRESSURE TESTED TO HOLD WATER AT FULL CAPACITY AT 75 PSI PRIOR SHIPMENT.

10) THIS DRAWINGS IS THE PROPERTY OF GROUND/WATER TREATMENT & TECHNOLOGY, INC

NO.	REVISIONS	DATE
A	FOR QUOTATION	06/28/05

2000 LBS LIQUID PHASE ADSORPTION TANK GENERAL ARRANGEMENT & DETAILS

SCALE: NONE	APPROVED:	DRAWN BY: TLo
DATE: 06/27/05		

GROUNDWATER TREATMENT & TECHNOLOGY
P.O. BOX 1174
DENVILLE, NJ 07834

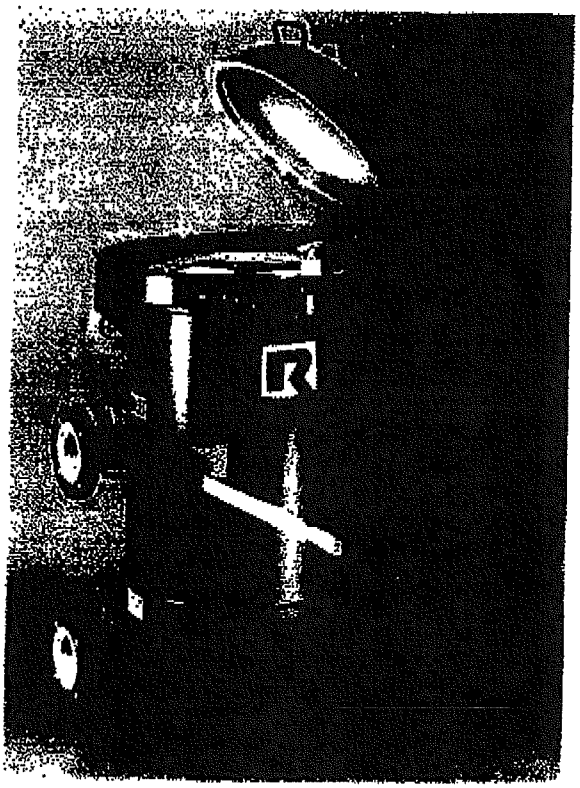
FILE: 11-1181 DRAWING NUMBER: M-02

Multi-Basket Strainers and Multi-Bag Filters

These multi-basket strainers and bag filters offer a wide range of flow capacities and contaminant-holding capabilities. They contain from 2 to 23 baskets.

To serve as a strainer, a unit is ordered with perforated stainless steel baskets (mesh-lined if desired). When ordered as a filter, it's fitted with perforated stainless steel baskets designed to hold disposable or cleanable filter bags. Industry-standard size bags are used: the standard 30 inch baskets accept bag size 2, the optional 15 inch baskets take size 1.

The standard pressure rating for all models is 150 psi. All housings can be supplied with an ASME code stamp, if required.



Features

- Multiple housing styles available (standard, quick access, low profile, hinged)
- Permanently piped housings are opened without tools and without disturbing the piping
- Machined cover gasket groove provides positive O-ring sealing
- Carbon steel, 304 or 316 stainless steel construction housings
- Large-area, 30 inch deep, heavy-duty, 9/64 inch perforated baskets
- Easy to clean
- Low pressure drop
- Four cover seal materials: Buna N, Ethylene Propylene, Viton®, and Teflon®
- Pressure rating 150 psi
- Flanged connections for 2 through 12 inch pipe
- Vent, drain and gage connections

Options

- ASME code stamp
- Higher pressure ratings
- Corrosion allowances
- Steam jackets
- Special connection locations
- Bag hold down assembly (standard on QAC design)
- Inner baskets for dual-stage straining or filtering
- Cleanable wire mesh lined or perforated strainer baskets
- Special alloy materials
- Hydraulic cover lifting assembly
- Sanitary fittings
- Differential pressure indicators

Duplex Systems

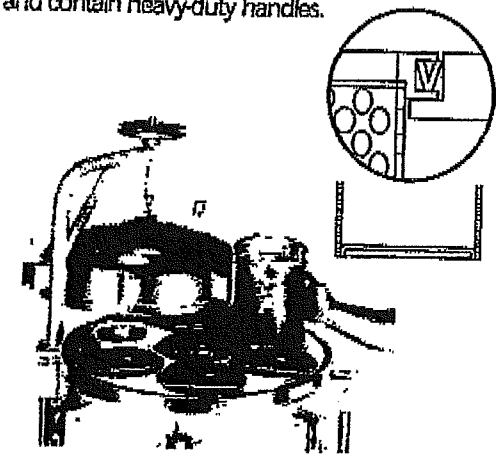
All multi-basket models described here are also available as duplex systems. Two units come piped together with valves to permit continuous use of either unit while servicing the other. One lever actuates all valves simultaneously or it can be ordered for automatic service. See page 63.

Choose Baskets That Strain or Filter

Whatever your needs dictate

Strainer baskets are cleanable, reusable.

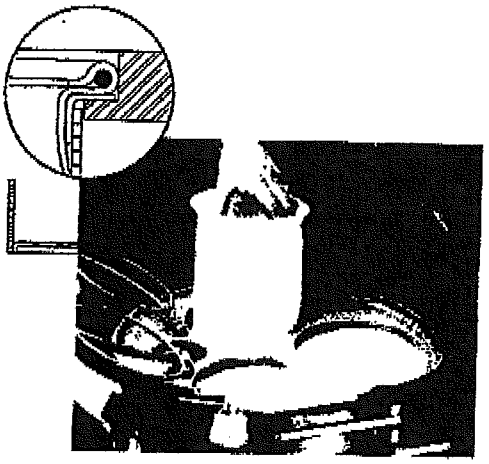
A seal is supplied on any strainer basket. It forms a seal between basket and housing to prevent dirty fluid bypass. Choose between various perforation sizes or wire mesh. Strainer baskets have flat, non-perforated bottoms and contain heavy-duty handles.



Filter bag baskets hold disposable filter bags.

Filter bags have an interference fit between the bags top rim and the housing causing a positive seal to prevent fluid bypass. Filter bag baskets have flat perforated bottoms.

Filter bags are available in a wide variety of felt, micro-fiber, monofilament and multifilament mesh materials. They are detailed completely on pages 126-128.



DUAL-STAGE– Dual-stage action will increase strainer or filter life and reduce servicing needs. This straining/filtering action can be achieved by ordering a second, inner basket. It is supported on the top flange of the outer basket. Both baskets can be utilized as strainers (with or without wire mesh linings), filter bag baskets, or a combination of strainer and bag basket.

Basket Data

Surface area of each 30 in. basket: 4.4 sq. ft. Volume of each 30 in. basket: 0.6 cu. ft.

Basket Construction

For cleanable strainer baskets, choose from the following perforation diameters: 1/4, 3/16, 9/64, 3/32, or 1/16 inch (for other not shown consult factory).

Any perforated basket can also be ordered lined with wire mesh. Stainless steel wire is used in mesh sizes 20, 30, 40, 50, 60, 70, 80, 100, 150, or 200.

Filter bag baskets, have standard 9/64 inch diameter perforations that are 51% open area. A wire mesh can also be utilized with bag baskets for two advantages:

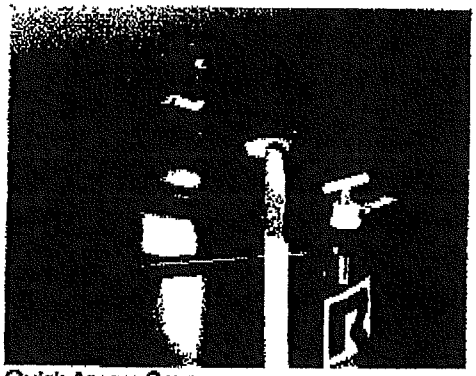
1. Fiber migration is minimized.
2. In the unlikely event of bag rupture, the wire mesh better contains the contaminant.

Choose Housing Style

Designed to suit your requirements

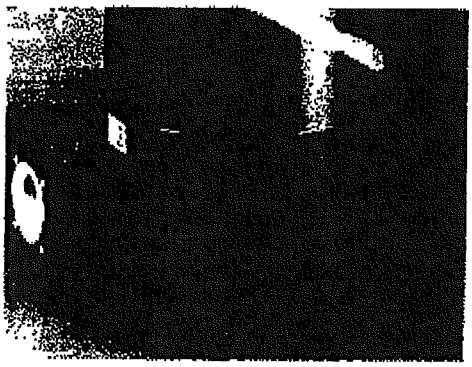
The versatility of Rosedale Products provides a choice of several different designs.

- **Quick Access Cover (QAC)** features a clamp and spring assisted hinged cover that is quick and easy to open and close with no tools required. This will significantly reduce change-out time and lower operating costs. The QAC is rated to 150 PSI and constructed to meet ASME code requirements. Built-in safety features ensure that the cover cannot be opened unless the internal pressure is first released. The QAC is offered with our low profile design making bags more accessible and easy to remove.



Quick Access Cover

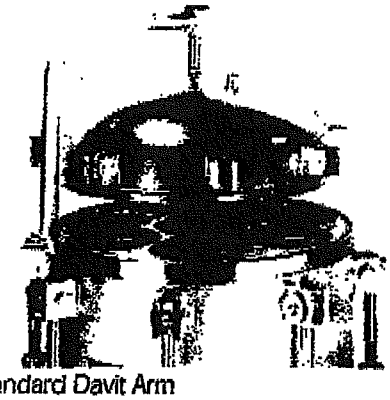
- **Low Profile Design (SLP) Housings** are compact and space saving, allowing for ease of bag change-out. Standard operating height is reduced, resulting in a safe design by eliminating platforms and ladders. The SLP is manufactured in any housing version, including our standard davit arm cover, QAC design, and spring assisted hinged cover.



Low Profile Design

- **Spring Assisted Hinged Cover (HLP)** opens and closes without effort. Simply loosen the swing bolts and lift the cover up to open. An automatic cover stop is provided. This design saves time by eliminating the labor intensive handwheel. It is offered standard with our low profile design, or can be ordered in the QAC design.

- **Standard Housing Design (STD)** is durable and economic. It includes a davit arm and handwheel to facilitate cover removal. It is our most versatile housing design offering a variety of options, including our low profile design.

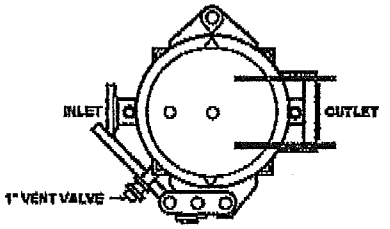


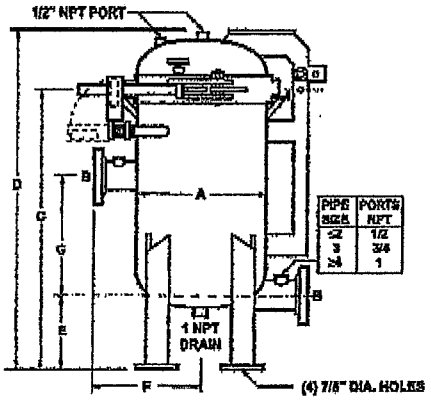
Standard Davit Arm

QAC Low Profile

MODEL NUMBER	A	Pipe Sizes B	Leg Bolt Circle Dia.	C	D	E	F	G
16 & 18	18	2	16.0	37.6	45.4	8.00	14.0	15.0
		3		38.1	45.9	9.00	15.0	17.0
22 & 24	24	2	22.0	41.2	49.9	8.00	17.0	15.0
		3		41.6	50.3	9.00	18.0	17.0
		4		41.7	49.8	9.00	19.0	19.0

Dimensions (IN)





QAC Low Profile

Model Selection

Model No.	Number of Baskets	Straining, Filtering Area, ft2	Nominal Flow Rate (gpm)**	Inlet/ Outlet Size (in)	Available Housing Styles
16	2	8.8	200	2,3,4*	Std,SLP,HLP,QAC
18	3	13.2	300	2,3,4*	Std,SLP,HLP,QAC
22	4	17.6	400	2,3,4,6*	Std,SLP,HLP,QAC
24	6	26.4	600	2,3,4,6*	Std,SLP,HLP,QAC
30	8	35.2	800	2,3,4,6,8*	Std,SLP,HLP
36	12	52.8	1200	2,3,4,6,8,10*	Std,SLP,HLP
42	17	74.8	1700	2,3,4,6,8,10,12*	Std,SLP,HLP
48	23	101.2	2300	2,3,4,6,8,10,12*	Std,SLP,HLP

*Not available on SLP, HLP, and QAC styles.

**Nominal flow rate is based on water @ 1 psi ΔP. For optimum filtering effectiveness, a maximum fluid velocity of 10 ft/sec should be maintained.

Pressure Drop Data

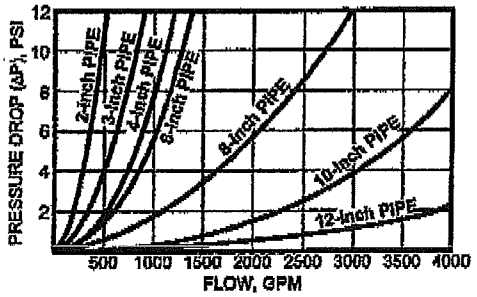
Basket strainers and bag filters are usually selected so that the pressure drop does not exceed 2 psi, when they are clean. Higher pressure drops may be tolerated when contaminant loading is low.

Determining housing pressure drop:

The pressure drops shown on the graph are reliable for all multi-basket housings, including strainer baskets or bag filter (perforated only or mesh lined). The pressure drop of any housing is governed by the size of the inlet and outlet, not the vessel itself.

1. Using the desired pipe size and approximate flow rate, determine the basic pressure drop from the graph.
2. Multiply the pressure drop obtained in step 1 by the viscosity correction factor found in the accompanying table.
3. You now have the pressure drop for a clean multi-basket unit. If bag filters are to be employed, you must add the pressure drop they incur to get a true pressure drop for the assembly.

Note: Filter bags are specified separately. See pages 120-130.



Recommended flow rates are based on housing only. Fluid viscosity, filter bag used, and expected dirt load should be considered when sizing a filter.

Viscosity Factors

	CPS NUMBER							
1 (H_2O)	50	100	200	400	600	800	1000	2000
.65	.85	1.00	1.10	1.20	1.40	1.50	1.60	1.80

Analytical Data

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532

Telephone (508) 759-4441
FAX (508) 759-4475
www.groundwateranalytical.com

December 5, 2008

Mr. David Bennett
Bennett Environmental Associates, Inc.
P.O. Box 1743
Brewster, MA 02631

LABORATORY REPORT

Project: **St. Christopher's/BEA08-10059**
Lab ID: **121881**
Received: **11-24-08**

Dear Dave:

Enclosed are the analytical results for the above referenced project. The project was processed for Priority turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC or NVLAP standards, except as may be specifically noted, or described in the project narrative. The analytical results relate only to the samples received. This report may only be used or reproduced in its entirety.

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

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Eric H. Jensen
Operations Manager

EHJ/ker
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project: **St. Christopher's/BEA08-10059**
Client: **Bennett Environmental Associates, Inc.**
Lab ID: **121881**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **11-24-08**

Temperature: **2.8ºC**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
121881-1	MW-3		Aqueous	11/24/08 14:00	EPA 8260B Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1094222	40 mL Amber VOA Via	Proline	BX30513	HCL	R-5500D	06-13-08	n/a		
C1094220	40 mL Amber VOA Via	Proline	BX30513	HCL	R-5500D	06-13-08	n/a		
C1113231	40 mL Amber VOA Via	n/a	n/a	HCL	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
121881-2	MW-3		Aqueous	11/24/08 14:00	EPA 8011 EDB and DBCP by GC/ECD				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1064503	40 mL VOA Vial	Proline	BX29308	None	n/a	n/a	n/a		
C1064502	40 mL VOA Vial	Proline	BX29308	None	n/a	n/a	n/a		
C1064501	40 mL VOA Vial	Proline	BX29308	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
121881-3	MW-3		Aqueous	11/24/08 14:00	EPA 8270C Semivolatile Organics (Low Level)				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C617706	1 L Amber Glass	Proline	BX17813	None	n/a	n/a	09-02-05		
C617703	1 L Amber Glass	Proline	BX17813	None	n/a	n/a	09-02-05		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
121881-4	MW-3		Aqueous	11/24/08 14:00	TPH by GC EPA 8015B Mod				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1149005	1 L Amber Glass	Proline	BX31906	H2SO4	n/a	n/a	11-14-08		
C1149002	1 L Amber Glass	Proline	BX31906	H2SO4	n/a	n/a	11-14-08		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
121881-5	MW-3		Aqueous	11/24/08 14:00	EPA 8082 PCBs				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1137167	1L Plastic	Proline	BX31812	None	n/a	n/a	10-23-08		
C1137159	1L Plastic	Proline	BX31812	None	n/a	n/a	10-23-08		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
121881-6	MW-3		Aqueous	11/24/08 14:00	SM 4500-Cl G Total Residual Chlorine SM 2540 D Total Suspended Solids				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1137156	1L Plastic	Proline	BX31812	None	n/a	n/a	10-23-08		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
121881-7	MW-3		Aqueous	11/24/08 14:00	EPA 9012A Total Cyanide				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1041690	500 mL Plastic	Proline	BX29067	NaOH	n/a	n/a	02-19-08		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
121881-8	MW-3		Aqueous	11/24/08 14:00	EPA 7196A Hexavalent Chromium				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1137130	1L Plastic	Proline	BX31812	None	n/a	n/a	10-23-08		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
121881-9	MW-3		Aqueous	11/24/08 14:00	EPA 200.7 Ag Cd Cr Cu Fe Ni Se Zn Total EPA 200.9 As Pb Sb Total EPA 245.1 Hg Total				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1076363	500 mL Plastic	Proline	BX30384	HNO3	R-5458D	05-02-08	05-09-08		

GROUNDWATER ANALYTICAL

Data Certification

Project: **St. Christopher's/BEA08-10059** Lab ID: **121881**
Client: **Bennett Environmental Associates, Inc.** Received: **11-24-08 17:36**

MA DEP Compendium of Analytical Methods						
Project Location: **n/a**				MA DEP RTN: **n/a**		
This Form provides certifications for the following data set:						
EPA 8260B: 121881-1						
EPA 8270C: 121881-3						
EPA 8082: 121881-5						
EPA 9012A: 121881-7						
EPA 7196A: 121881-8						
Sample Matrices:	Groundwater (X)	Soil/Sediment ( )	Drinking Water ( )	Other ( )		
MCP SW-846 Methods Used	8260B (X)	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )	
	8270C (X)	8081A ( )	VPH ( )	6020A ( )	9012A[2] (X)	
As specified in MA DEP Compendium of Analytical Methods. (check all that apply)	8082 (X)	8021B ( )	EPH ( )	7000 S[3] (X)	Other ( )	
	1. List Release Tracking Number (RTN), if known.					
	2. SW-846 Method 9012A (Equivalent to 9014) or MA DEP Physiologically Available Cyanide (PAC) Method					
	3. S - SW-846 Methods 7000 Series. List individual method and analyte.					

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

A.	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	Yes
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
C.	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty," as described in Section 2.0 of the MA DEP document CAM VII A, *Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data* ?	Yes
D.	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	n/a

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

All No answers are addressed in the attached Project 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: Position: Operations Manager
Printed Name: Eric H. Jensen Date: 12-05-08

GROUNDWATER ANALYTICAL

EPA Method 8260B
Volatile Organics by GC/MS

Field ID:	**MW-3**	Matrix:	**Aqueous**
Project:	**St. Christopher's/BEA08-10059**	Container:	**40 mL Amber VOA Vial**
Client:	**Bennett Environmental Associates, Inc.**	Preservation:	**HCl/ Cool**
Laboratory ID:	**121881-1**	QC Batch ID:	**VM7-3057-W**
Sampled:	**11-24-08 14:00**	Instrument ID:	**MS-7 HP 6890**
Received:	**11-24-08 17:36**	Sample Volume:	**25 mL**
Analyzed:	**12-01-08 10:20**	Dilution Factor:	**5**
Analyst:	**LMG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	3
74-87-3	Chloromethane	BRL		ug/L	3
75-01-4	Vinyl Chloride	BRL		ug/L	3
74-83-9	Bromomethane	BRL		ug/L	3
75-00-3	Chloroethane	BRL		ug/L	3
75-69-4	Trichlorofluoromethane	BRL		ug/L	3
60-29-7	Diethyl Ether	BRL		ug/L	10
75-35-4	1,1-Dichloroethene	BRL		ug/L	3
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	25
67-64-1	Acetone	BRL		ug/L	50
75-15-0	Carbon Disulfide	BRL		ug/L	25
75-09-2	Methylene Chloride	BRL		ug/L	13
156-60-5	*trans*-1,2-Dichloroethene	BRL		ug/L	3
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	BRL		ug/L	3
75-34-3	1,1-Dichloroethane	BRL		ug/L	3
594-20-7	2,2-Dichloropropane	BRL		ug/L	3
156-59-2	*cis*-1,2-Dichloroethene	BRL		ug/L	3
78-93-3	2-Butanone (MEK)	BRL		ug/L	25
74-97-5	Bromochloromethane	BRL		ug/L	3
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	25
67-66-3	Chloroform	BRL		ug/L	3
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	3
56-23-5	Carbon Tetrachloride	BRL		ug/L	3
563-58-6	1,1-Dichloropropene	BRL		ug/L	3
71-43-2	Benzene	BRL		ug/L	3
107-06-2	1,2-Dichloroethane	BRL		ug/L	3
79-01-6	Trichloroethene	BRL		ug/L	3
78-87-5	1,2-Dichloropropane	BRL		ug/L	3
74-95-3	Dibromomethane	BRL		ug/L	3
75-27-4	Bromodichloromethane	BRL		ug/L	3
123-91-1	1,4-Dioxane	BRL		ug/L	2,500
10061-01-5	*cis*-1,3-Dichloropropene	BRL		ug/L	2
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	25
108-88-3	Toluene	BRL		ug/L	3
10061-02-6	*trans*-1,3-Dichloropropene	BRL		ug/L	2
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	3
127-18-4	Tetrachloroethene	BRL		ug/L	3
142-28-9	1,3-Dichloropropane	BRL		ug/L	3
591-78-6	2-Hexanone	BRL		ug/L	25
124-48-1	Dibromochloromethane	BRL		ug/L	3
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	3
108-90-7	Chlorobenzene	BRL		ug/L	3
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	3
100-41-4	Ethylbenzene	BRL		ug/L	3
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL		ug/L	3
95-47-6	*ortho*-Xylene	BRL		ug/L	3

GROUNDWATER ANALYTICAL

EPA Method 8260B (Continued)
Volatile Organics by GC/MS

Field ID:	**MW-3**	Matrix:	**Aqueous**
Project:	**St. Christopher's/BEA08-10059**	Container:	**40 mL Amber VOA Vial**
Client:	**Bennett Environmental Associates, Inc.**	Preservation:	**HCl/ Cool**
Laboratory ID:	**121881-1**	QC Batch ID:	**VM7-3057-W**
Sampled:	**11-24-08 14:00**	Instrument ID:	**MS-7 HP 6890**
Received:	**11-24-08 17:36**	Sample Volume:	**25 mL**
Analyzed:	**12-01-08 10:20**	Dilution Factor:	**5**
Analyst:	**LMG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
100-42-5	Styrene	BRL		ug/L	3
75-25-2	Bromoform	BRL		ug/L	3
98-82-8	Isopropylbenzene	BRL		ug/L	3
108-86-1	Bromobenzene	BRL		ug/L	3
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	3
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	3
103-65-1	*n*-Propylbenzene	BRL		ug/L	3
95-49-8	2-Chlorotoluene	BRL		ug/L	3
108-67-8	1,3,5-Trimethylbenzene	BRL		ug/L	3
106-43-4	4-Chlorotoluene	BRL		ug/L	3
98-06-6	*tert*-Butylbenzene	BRL		ug/L	3
95-63-6	1,2,4-Trimethylbenzene	BRL		ug/L	3
135-98-8	*sec*-Butylbenzene	BRL		ug/L	3
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	3
99-87-6	4-Isopropyltoluene	BRL		ug/L	3
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	3
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	3
104-51-8	*n*-Butylbenzene	BRL		ug/L	3
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	3
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	3
87-68-3	Hexachlorobutadiene	BRL		ug/L	3
91-20-3	Naphthalene	BRL		ug/L	3
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	3
75-65-0	*tert*-Butyl Alcohol (TBA)	BRL		ug/L	100
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	3
637-92-3	Ethyl *tert*-butyl Ether (ETBE)	BRL		ug/L	3
994-05-8	*tert*-Amyl Methyl Ether (TAME)	BRL		ug/L	3

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	10	**104** %	70 - 130 %
1,2-Dichloroethane-d_4	10	11	**107** %	70 - 130 %
Toluene-d_8	10	10	**103** %	70 - 130 %
4-Bromofluorobenzene	10	10	**104** %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Sample preparation performed by EPA Method 5030B.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

EPA Method 8011
EDB and DBCP by GC/ECD

Field ID:	**MW-3**	Matrix:	**Aqueous**
Project:	**St. Christopher's/BEA08-10059**	Container:	**40 mL VOA Vial**
Client:	**Bennett Environmental Associates, Inc.**	Preservation:	**Cool**
Laboratory ID:	**121881-02**	QC Batch ID:	**PV-0945-E**
Sampled:	**11-24-08 14:00**	Instrument ID:	**GC-5 HP 5890**
Received:	**11-24-08 17:36**	Sample Volume:	**33 mL**
Extracted:	**11-29-08 11:00**	Final Volume:	**1 mL**
Analyzed:	**11-29-08 17:49**	Dilution Factor:	**1**
Analyst:	**CRL**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.02
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	BRL		ug/L	0.02

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

EPA Method 8270C
Semivolatile Organics by GC/MS (Part 1)

Field ID:	**MW-3**	Matrix:	**Aqueous**
Project:	**St. Christopher's/BEA08-10059**	Container:	**1 L Amber Glass**
Client:	**Bennett Environmental Associates, Inc.**	Preservation:	**Cool**
Laboratory ID:	**121881-03**	QC Batch ID:	**SV-2323-F**
Sampled:	**11-24-08 14:00**	Instrument ID:	**MS-12 Agilent 6890**
Received:	**11-24-08 17:36**	Sample Volume:	**1,000 mL**
Extracted:	**12-01-08 13:30**	Final Volume:	**1 mL**
Analyzed:	**12-02-08 13:41**	Dilution Factor:	**1**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
62-75-9	N-Nitrosodimethylamine	BRL		ug/L	5
110-86-1	Pyridine	BRL		ug/L	5
108-95-2	Phenol	BRL		ug/L	5
62-53-3	Aniline	BRL		ug/L	5
111-44-4	Bis(2-chloroethyl) ether	BRL		ug/L	5
95-57-8	2-Chlorophenol	BRL		ug/L	5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	5
100-51-6	Benzyl Alcohol	BRL		ug/L	5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	5
95-48-7	2-Methylphenol	BRL		ug/L	5
108-60-1	Bis(2-chloroisopropyl) ether	BRL		ug/L	5
108-39-4/106-44-5	3 and 4-Methylphenol *	**14**		ug/L	5
621-64-7	N-Nitrosodi-n-propylamine	BRL		ug/L	5
98-86-2	Acetophenone	BRL		ug/L	5
67-72-1	Hexachloroethane	BRL		ug/L	5
98-95-3	Nitrobenzene	BRL		ug/L	5
78-59-1	Isophorone	BRL		ug/L	5
88-75-5	2-Nitrophenol	BRL		ug/L	5
105-67-9	2,4-Dimethylphenol	BRL		ug/L	5
111-91-1	Bis(2-chloroethoxy) methane	BRL		ug/L	5
120-83-2	2,4-Dichlorophenol	BRL		ug/L	5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	5
106-47-8	4-Chloroaniline	BRL		ug/L	5
87-68-3	Hexachlorobutadiene	BRL		ug/L	5
59-50-7	4-Chloro-3-methylphenol	BRL		ug/L	5
77-47-4	Hexachlorocyclopentadiene	BRL		ug/L	5
88-06-2	2,4,6-Trichlorophenol	BRL		ug/L	5
95-95-4	2,4,5-Trichlorophenol	BRL		ug/L	5
91-58-7	2-Chloronaphthalene	BRL		ug/L	5
88-74-4	2-Nitroaniline	BRL		ug/L	5
100-25-4	1,4-Dinitrobenzene	BRL		ug/L	5
131-11-3	Dimethyl phthalate	BRL		ug/L	5
99-65-0	1,3-Dinitrobenzene	BRL		ug/L	5
606-20-2	2,6-Dinitrotoluene	BRL		ug/L	5
528-29-0	1,2-Dinitrobenzene	BRL		ug/L	5
99-09-2	3-Nitroaniline	BRL		ug/L	5
51-28-5	2,4-Dinitrophenol	BRL		ug/L	10
100-02-7	4-Nitrophenol	BRL		ug/L	5
132-64-9	Dibenzofuran	BRL		ug/L	5
121-14-2	2,4-Dinitrotoluene	BRL		ug/L	5
84-66-2	Diethyl phthalate	BRL		ug/L	5
7005-72-3	4-Chlorophenyl phenyl ether	BRL		ug/L	5
100-01-6	4-Nitroaniline	BRL		ug/L	5
534-52-1	4,6-Dinitro-2-methylphenol	BRL		ug/L	5

GROUNDWATER ANALYTICAL

EPA Method 8270C (Continued)
Semivolatile Organics by GC/MS (Part 1)

Field ID:	**MW-3**	Matrix:	**Aqueous**
Project:	**St. Christopher's/BEA08-10059**	Container:	**1 L Amber Glass**
Client:	**Bennett Environmental Associates, Inc.**	Preservation:	**Cool**
Laboratory ID:	**121881-03**	QC Batch ID:	**SV-2323-F**
Sampled:	**11-24-08 14:00**	Instrument ID:	**MS-12 Agilent 6890**
Received:	**11-24-08 17:36**	Sample Volume:	**1,000 mL**
Extracted:	**12-01-08 13:30**	Final Volume:	**1 mL**
Analyzed:	**12-02-08 13:41**	Dilution Factor:	**1**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
86-30-6	N-Nitrosodiphenylamine †	BRL		ug/L	5
122-66-7	1,2-Diphenylhydrazine ◊	BRL		ug/L	5
101-55-3	4-Bromophenyl phenyl ether	BRL		ug/L	5
86-74-8	Carbazole	BRL		ug/L	5
84-74-2	Di-*n*-butyl phthalate	BRL		ug/L	5
85-68-7	Butyl benzyl phthalate	BRL		ug/L	5
91-94-1	3,3'-Dichlorobenzidine	BRL		ug/L	5
117-81-7	Bis(2-ethylhexyl) phthalate	BRL		ug/L	5
117-84-0	Di-*n*-octyl phthalate	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	12	**59** %	15 - 110 %
Phenol-d5	20	10	**50** %	15 - 110 %
Nitrobenzene-d5	10	9	**87** %	30 - 130 %
2-Fluorobiphenyl	10	9	**90** %	30 - 130 %
2,4,6-Tribromophenol	20	21	**105** %	15 - 110 %
Terphenyl-d14	10	9	**87** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

* Analyzed as 4-Methylphenol.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

GROUNDWATER ANALYTICAL

EPA Method 8270C
Semivolatile Organics by GC/MS-SIM (Part 2)

Field ID:	**MW-3**	Matrix:	**Aqueous**
Project:	**St. Christopher's/BEA08-10059**	Container:	**1 L Amber Glass**
Client:	**Bennett Environmental Associates, Inc.**	Preservation:	**Cool**
Laboratory ID:	**121881-03**	QC Batch ID:	**SV-2323-F**
Sampled:	**11-24-08 14:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**11-24-08 17:36**	Sample Volume:	**1,000 mL**
Extracted:	**12-01-08 13:30**	Final Volume:	**1 mL**
Analyzed:	**12-02-08 14:29**	Dilution Factor:	**1**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/L	0.5
91-57-6	2-Methylnaphthalene	BRL		ug/L	0.5
208-96-8	Acenaphthylene	BRL		ug/L	0.5
83-32-9	Acenaphthene	BRL		ug/L	0.5
86-73-7	Fluorene	BRL		ug/L	0.5
85-01-8	Phenanthrene	BRL		ug/L	0.5
120-12-7	Anthracene	BRL		ug/L	0.5
206-44-0	Fluoranthene	BRL		ug/L	0.5
129-00-0	Pyrene	BRL		ug/L	0.5
56-55-3	Benzo[a]anthracene	BRL		ug/L	0.1
218-01-9	Chrysene	BRL		ug/L	0.1
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	0.1
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	0.1
50-32-8	Benzo[a]pyrene	BRL		ug/L	0.1
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	0.1
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	0.1
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	0.1
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
118-74-1	Hexachlorobenzene	BRL		ug/L	0.5
87-86-5	Pentachlorophenol	BRL		ug/L	1.0

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	14	**68** %	15 - 110 %
Phenol-d5	20	11	**55** %	15 - 110 %
Nitrobenzene-d5	10	8.8	**89** %	30 - 130 %
2-Fluorobiphenyl	10	7.9	**79** %	30 - 130 %
2,4,6-Tribromophenol	20	19	**96** %	15 - 110 %
Terphenyl-d14	10	8.9	**89** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Sample extraction performed by EPA Method 3510C.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

EPA Method 8015B (Modified)
Total Petroleum Hydrocarbons by GC/FID

Field ID:	**MW-3**	Matrix:	**Aqueous**
Project:	**St. Christopher's/BEA08-10059**	Container:	**1 L Amber Glass**
Client:	**Bennett Environmental Associates, Inc.**	Preservation:	**H2SO4/ Cool/Cool**
Laboratory ID:	**121881-4**	QC Batch ID:	**HF-2083-F**
Sampled:	**11-24-08 14:00**	Instrument ID:	**GC4 HP 5890**
Received:	**11-24-08 17:36**	Sample Volume:	**1,000 mL**
Extracted:	**12-01-08 10:30**	Final Volume:	**1 mL**
Analyzed:	**12-01-08 21:57**	Dilution Factor:	**1**
Analyst:	**MB**		

Analyte	Concentration	Notes	Units	Reporting Limit
Total Petroleum Hydrocarbons	**0.9**		mg/L	0.2

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	0.040	0.035	**88** %	60 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified to quantify total petroleum hydrocarbons in the range n-C 9 through n-C 36. Results are quantified on the basis of a series of aromatic and aliphatic hydrocarbons, using 5-alpha-androstane as an internal standard.
Sample extraction performed by EPA Method 3510C.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

EPA Method 8082
Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID:	**MW-3**	Matrix:	**Aqueous**
Project:	**St. Christopher's/BEA08-10059**	Container:	**1L Plastic**
Client:	**Bennett Environmental Associates, Inc.**	Preservation:	**Cool**
Laboratory ID:	**121881-05**	QC Batch ID:	**PB-2482-F**
Sampled:	**11-24-08 14:00**	Instrument ID:	**GC-11 Agilent 6890**
Received:	**11-24-08 17:36**	Sample Weight:	**1000 mL**
Extracted:	**12-01-08 08:00**	Final Volume:	**1 mL**
Cleaned Up:	**12-01-08 11:00**	Dilution Factor:	**1**
Analyzed:	**12-01-08 23:53**		
Analyst:	**AWG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/L	0.2
11104-28-2	Aroclor 1221	BRL		ug/L	0.2
11141-16-5	Aroclor 1232	BRL		ug/L	0.2
53469-21-9	Aroclor 1242	BRL		ug/L	0.2
12672-29-6	Aroclor 1248	BRL		ug/L	0.2
11097-69-1	Aroclor 1254	BRL		ug/L	0.2
11096-82-5	Aroclor 1260	BRL		ug/L	0.2
37324-23-5	Aroclor 1262 †	BRL		ug/L	0.2
11100-14-4	Aroclor 1268 †	BRL		ug/L	0.2

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First	Tetrachloro-*m*-xylene	0.20	0.13	**64** %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.12	**59** %	30 - 150 %
Second	Tetrachloro-*m*-xylene	0.20	0.14	**71** %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.11	**57** %	30 - 150 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Non-target analyte. Result is based on a single mid-range calibration standard.

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **MW-3** Matrix: **Aqueous**
Project: **St. Christopher's/BEA08-10059** Received: **11-24-08 17:36**
Client: **Bennett Environmental Associates, Inc.**

Lab ID: **121881-06** Sampled: **11-24-08 14:00** Container: **1L Plastic** Preservation: **Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	**64**	mg/L	10	5	100 mL	11-25-08 19:33	TSS-1556-W	SM 2540 D	3	KG
Chlorine, Total Residual	**0.3**	mg/L	0.2	1	5 mL	11-25-08 11:30	TRC-0712-W	SM 4500-Cl G	2	DEB

Lab ID: **121881-07** Sampled: **11-24-08 14:00** Container: **500 mL Plastic** Preservation: **NaOH/Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Cyanide, Total	BRL	mg/L	0.01	1	50 mL	11-26-08 18:44	TCN-1460-W	EPA 9012A	1	LD

Lab ID: **121881-08** Sampled: **11-24-08 14:00** Container: **1L Plastic** Preservation: **Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Chromium, Hexavalent	BRL	mg/L	0.01	1	5 mL	11-24-08 18:00	HC-0144-W	EPA 7196A	2	JK

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

RL Reporting Limit.

DF Dilution Factor.

1 Instrument ID: Lachat 8000 Autoanalyzer

2 Instrument ID: Thermo Electron Genesys 20

3 Instrument ID: Mettler AT 200 Balance

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	**MW-3**	Matrix:	**Aqueous**
Project:	**St. Christopher's/BEA08-10059**	Container:	**500 mL Plastic**
Client:	**Bennett Environmental Associates, Inc.**	Preservation:	**HNO3 / Cool**
Laboratory ID:	**121881-9**	Preserved:	**11-24-08 14:00**
Sampled:	**11-24-08 14:00**		
Received:	**11-24-08 17:36**		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 200.8[1]	MB-3549-W	EPA 200.8	11-25-08 14:16	50 mL	ICP-MS PE ELAN 9000	MFP
EPA 200.7[2]	MB-3549-W	EPA 200.7	11-25-08 14:16	50 mL	ICP-1 PE 3000	MFP
EPA 245.1[3]	MP-2157-W	EPA 245.1	12-01-08 10:05	25 mL	CVAA-1 PE FIMS	DET

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-36-0	Antimony, Total	BRL		mg/L	0.003	1	12-01-08 00:00	EPA 200.8[1]
7440-38-2	Arsenic, Total	BRL		mg/L	0.01	1	12-01-08 00:00	EPA 200.8[1]
7440-43-9	Cadmium, Total	BRL		mg/L	0.0025	1	11-26-08 20:43	EPA 200.7[2]
7440-47-3	Chromium, Total	**0.01**		mg/L	0.01	1	11-26-08 20:43	EPA 200.7[2]
7440-50-8	Copper, Total	BRL		mg/L	0.025	1	12-01-08 21:58	EPA 200.7[2]
7439-89-6	Iron, Total	**19**		mg/L	0.1	1	11-26-08 20:43	EPA 200.7[2]
7439-92-1	Lead, Total	**0.066**		mg/L	0.001	1	12-01-08 00:00	EPA 200.8[1]
7439-97-6	Mercury, Total	BRL		mg/L	0.0002	1	12-01-08 14:33	EPA 245.1[3]
7440-02-0	Nickel, Total	BRL		mg/L	0.04	1	12-01-08 00:00	EPA 200.7[2]
7782-49-2	Selenium, Total	BRL		mg/L	0.05	1	11-26-08 20:43	EPA 200.7[2]
7440-22-4	Silver, Total	BRL		mg/L	0.007	1	11-26-08 20:43	EPA 200.7[2]
7440-66-6	Zinc, Total	BRL		mg/L	0.2	1	11-26-08 20:43	EPA 200.7[2]

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**St. Christopher's/BEA08-10059**	Lab ID:	**121881**
Client:	**Bennett Environmental Associates, Inc.**	Received:	**11-24-08 17:36**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1 . Sample 121881-1 was analyzed by EPA 8260B full list per Brian Clarke, 12-05-08.

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1 . EPA 8260B Note: Sample 121881-1. Sample was diluted prior to analysis. Dilution was required due to observed foaming characteristics of sample. Sample foaming interferes with purge and trap sample concentration.

2 . EPA 8270C Modification: Sample 121881-3. Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method. GC/MS-SIM was used to achieve low quantification limits necessary for regulatory compliance.

3 . EPA 8270C Non-conformance: Laboratory control sample (LCS) had analyte N-Nitrosodiphenylamine above recommended recovery limits for QC batch SV-2323-F.

4 . EPA 8270C Non-conformance: Laboratory control sample (LCS) had analytes with RPD recoveries above recommended recovery limits for QC batch SV-2323-F.

5 . EPA 8270C Non-conformance: Laboratory control sample (LCS) has a surrogate with a recovery above recommended limts for QC batch SV-2323-F.

GROUNDWATER ANALYTICAL

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Buzzards Bay, MA 02532
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www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

Project Name: St. Christophers	Firm: Bonnett Env. Assoc. (BEA)
Project Number: BEA08 10059	Address: Port 1743
Sampler Name: BC	City / State / Zip: Brewster 02631
Project Manager: DCB/BC	Telephone: 508 896 1706

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- ☐ STANDARD (10 Business Days)
- ☑ PRIORITY (5 Business Days)
- ☐ RUSH (RAN- _____)
  (Rush requires Rush Authorization Number)
- ☐ Please Email to: DBonnett@...
- ☐ Please FAX to: _____

BILLING

- ☑ Purchase Order No.: 10059
- ☐ Third Party Billing: _____
- ☐ GWA Quote: _____

ANALYSIS REQUEST

OPTIONS / SDWA / NPDES / RCRA/21E

Volatiles: ☐ TIC Search; ☐ 624.2-MTBE; ☐ 624; ☐ 8260B TCL+MTBE; ☐ 8260B NH PETROLEUM; ☐ 8260B; ☐ 602-MTBE; ☐ 601; ☐ 601/602-MTBE; ☐ 8021B Aromatics; ☐ 8021B Halocarbons; ☐ 8021B

Semivolatiles: ☐ Acid Only; ☐ B/N Only; ☐ TIC Search; ☐ 525.2; ☐ 625; ☐ 625 PAHs only; ☐ 8270C; ☐ 8270C PAHs only

Pest/Herb/PCBs Extractable: ☐ 505 ☐ 508; ☐ 608 Pesticides; ☐ 608 PCBs; ☐ 625; ☐ 8081A Pesticides; ☐ 8082 PCBs; ☐ 8151A Herbicides

Pest/Herb/PCBs Vol.: ☐ 531.1; ☐ 515.1; ☐ 504.1 EDB/DBCP; ☐ 8011 EDB/DBCP

Metals: Specify For Water Samples ☐ Total ☐ Dissolved; ☐ 13 Priority Pollutant; ☐ 8 RCRA; ☐ 5 RCRA; ☐ MA List Metals; ☐ 23 TAL; ☐ Specify:

Petroleum Hydrocarbon Ext. TPH: ☐ 1PH-IR; ☐ Diesel Range Organics (DRO) ☐ ME DRO; ☐ CT ETPH; ☐ MA DEP EPH w/all targets ☐ EPH Carbon Ranges only ☐ EPH w/4 PAHs; ☐ Hydrocarbon Fingerprint (GC/FID by ASTM D3328-00-Mod.); ☐ TPH by GC/FID (8015B Mod) Quantitative Only; ☐ Gasoline Range Organics (GRO) ☐ ME GRO; ☐ MA DEP VPH w/all targets ☐ VPH Carbon ranges only

Petroleum Hydrocarbon Vol. TPH: ☐ TCLP ☐ SPLP ☐ 8 Metals ☐ Pb only ☐ VOA ☐ Semi VOA ☐ Pesticides ☐ Herbicides; ☐ Corrosivity (as pH) ☐ Reactivity ☐ Ignitability (as Flashpoint) ☐ Paint Filter; ☐ MA Base Disposal Criteria: 8260B, TPH by GC, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity; ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Fluoride ☐ Sulfate; ☐ Dissolved Phosphorus; ☐ Ammonia ☐ TKN ☐ Total Phosphorus ☐ Total N (as NO2/NO3/TKN); ☐ Oil & Grease; ☐ COD ☐ TOC; ☐ BOD ☐ TDS ☐ TSS ☐ TS ☐ Alkalinity; ☐ Cyanide, Total ☐ Cyanide, Physiologically Available; ☐ pH ☐ Dissolved Oxygen ☐ Turbidity

Other: ☐ Total Coliform ☐ Fecal Coliform ☐ HPC

Sampling DATE	Sampling TIME	SAMPLE IDENTIFICATION	Matrix	Type	Container(s)	Preservation	Filtered	LABORATORY NUMBER (Lab Use Only)
11/24/8	1400	MW-3	GROUNDWATER	COMPOSITE	NUMBER: 1	HCl	YES	
			DRINKING WATER	GRAB	40mL VOA Vial	HNO3	NO	
			WASTEWATER		60mL/2 oz Amber Glass	H2SO4		
			SOIL		120mL/4 oz Amber Glass	NaOH		
			OTHER SOLID		250mL/8 oz Glass	Methanol		
			OIL/ORGANIC LIQUID		500mL/16 oz Glass	Sodium Bisulfate		
					1L/32 oz Amber Glass	ICE		
					250mL/8 oz Plastic			
					500mL/16 oz Plastic			
					1L/32 oz Plastic			
					120mL Sterile			

Page 15 of 42

REMARKS / SPECIAL INSTRUCTIONS

MA DEP MCP Data Enhancement Affirmation

- ☑ YES ☐ NO MCP Data Certification required.
- ☐ YES ☐ NO MCP Drinking Water Sample included.

(Require collection of contingent duplicate sample. Trip blanks are also required, if VOA sample collected).

Signature: _____

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
☐ CT	☐ MCP GW-1/S-1	☐ PWS Form
☐ ME	☐ MCP GW-2/S-2	☐ MWRA
☑ MA	☐ NY STARS	☐ _____
☐ NH	☐ Drinking Water	
☐ NY	☐ Wastewater	
☐ RI	☐ Waste Disposal	
☐ VT	☐ Dredge Material	
☐ ___	☑ RGP -NPDES	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required	Selection of QC Sample
☐ Sample Duplicate	☐ Please use sample:
☐ Matrix Spike	_____
☐ Matrix Spike Duplicate	

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

	Date	Time		
Relinquished by Sampler:	11/24/8	1615	Received by:	Receipt Temperature: ☐ Ice ☐ Refrigerated 2-8°C Recommended 2 - 8
Relinquished by:	11/24/8	1615	Received by:	Container Count: 16
Relinquished by:	11/24/8	1736	Received by Laboratory:	Shipping/Airbill Number:

Method of Shipment: ☑ GWA Courier ☐ Express Mail ☐ Federal Express ☑ UPS ☐ Hand ☐ _____

Custody Seal Number:

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category:	**EPA 8015B Mod TPH**	Instrument ID:	**GC4 HP 5890**
QC Batch ID:	**HF-2083-F**	Extracted:	**12-01-08 10:30**
Matrix:	**Aqueous**	Analyzed:	**12-01-08 16:25**
Units:	**mg/L**	Analyst:	**MB**

Analyte	Spiked	Measured	Recovery	QC Limits
Fuel Oil No. 2	2.0	1.3	**65** %	60 - 140 %

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	0.040	0.030	**75** %	60 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified to quantify total petroleum hydrocarbons in the range n-C 9 through n-C 36. Results are quantified on the basis of a series of aromatic and aliphatic hydrocarbons, using 5-alpha-androstane as an internal standard.
Sample extraction performed by EPA Method 3510C.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA 8015B Mod TPH**	Instrument ID:	**GC4 HP 5890**
QC Batch ID:	**HF-2083-F**	Extracted:	**12-01-08 10:30**
Matrix:	**Aqueous**	Analyzed:	**12-01-08 15:34**
		Analyst:	**MB**

Analyte	Concentration	Notes	Units	Reporting Limit
Total Petroleum Hydrocarbons	BRL		mg/L	0.2

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	0.040	0.036	**90** %	60 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified to quantify total petroleum hydrocarbons in the range n-C 9 through n-C 36. Results are quantified on the basis of a series of aromatic and aliphatic hydrocarbons, using 5-alpha-androstane as an internal standard.
Sample extraction performed by EPA Method 3510C.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Laboratory Control Samples

Category: **Inorganics**
Matrix: **Aqueous**
Units: **mg/L**

Sample Type	Method	QC Batch ID	Prep Method	Prepared	Analyzed	Instrument ID	Analyst
LCS	EPA 9012A	TCN-1460-W	EPA 9012A	11/25/2008 17:10	11/26/2008 18:42	Lachat 8000 Autoanalyzer	LD
LCSD	EPA 9012A	TCN-1460-W	EPA 9012A	11/25/2008 17:10	11/26/2008 18:43	Lachat 8000 Autoanalyzer	LD

Analyte	LCS			LCS Duplicate				QC Limits		Method
	Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
Cyanide, Total	0.44	0.47	**107%**	0.45	0.49	**108%**	**1 %**	80-120%	20 %	EPA 9012A

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **Inorganic Chemistry**
Matrix: **Aqueous**

Analyte	Units	Spiked	Measured	Recovery	QC Limits	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	mg/L	78	86	**110 %**	80 - 120 %	11-25-08 19:33	TSS-1556-W	SM 2540 D	2	KLG
Chlorine, Total Residual	mg/L	1	1	**100 %**	80 - 120 %	11-25-08 11:30	TRC-0712-W	SM 4500-Cl G	1	DEB
Chromium, Hexavalent	mg/L	0.1	0.1	**96 %**	80 - 120 %	05-08-01 00:00	HC-0144-W	EPA 7196A	1	SBB

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

1 Instrument ID: Thermo Electron Genesys 20

2 Instrument ID: Mettler AT 200 Balance

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **Inorganic Chemistry**
Matrix: **Aqueous**

Analyte	Result	Units	RL	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	BRL	mg/L	2	11-25-08 19:33	TSS-1556-W	SM 2540 D	3	KLG
Chlorine, Total Residual	BRL	mg/L	0.2	11-25-08 11:30	TRC-0712-W	SM 4500-Cl G	2	DEB
Chromium, Hexavalent	BRL	mg/L	0.01	05-08-01 00:00	HC-0144-W	EPA 7196A	2	SBB
Cyanide, Total	BRL	mg/L	0.01	11-26-08 18:42	TCN-1460-W	EPA 9012A	1	LD

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

RL Reporting Limit.

1 Instrument ID: Lachat 8000 Autoanalyzer

2 Instrument ID: Thermo Electron Genesys 20

3 Instrument ID: Mettler AT 200 Balance

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8082**	Instrument ID:	**GC-11 Agilent 6890**	Instrument ID:	**GC-11 Agilent 6890**
QC Batch ID:	**PB-2482-F**	Extracted:	**12-01-08 08:00**	Extracted:	**12-01-08 08:00**
Matrix:	**Aqueous**	Cleaned Up:	**12-01-08 11:00**	Cleaned Up:	**12-01-08 11:00**
Units:	**ug/L**	Analyzed:	**12-01-08 21:31**	Analyzed:	**12-01-08 21:55**
		Analyst:	**AWG**	Analyst:	**AWG**

CAS Number	Analyte	LCS					LCS Duplicate							QC Limits	
		Spiked	Measured		Recovery		Spiked	Measured		Recovery		RPD			
			1st Col	2nd Col	1st Col	2nd Col		1st Col	2nd Col	1st Col	2nd Col	1st Col	2nd Col	Spike	RPD
12674-11-2	Aroclor 1016	5.0	4.3	4.2	**86%**	**83%**	5.0	4.5	4.6	**90%**	**92%**	**5 %**	**11 %**	40 - 140%	30 %
11096-82-5	Aroclor 1260	5.0	4.0	3.8	**79%**	**75%**	5.0	4.7	4.6	**94%**	**93%**	**17 %**	**20 %**	40 - 140%	30 %

QC Surrogate Compound	Surrogate Recovery											QC Limits
Tetrachloro-*m* -xylene	0.20	0.18	0.18	**88%**	**90%**	0.20	0.18	0.18	**88%**	**92%**		30 - 150 %
Decachlorobiphenyl	0.20	0.16	0.16	**81%**	**78%**	0.20	0.20	0.20	**98%**	**98%**		30 - 150 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8082**	Instrument ID:	**GC-11 Agilent 6890**
QC Batch ID:	**PB-2482-F**	Extracted:	**12-01-08 08:00**
Matrix:	**Aqueous**	Cleaned Up:	**12-01-08 11:00**
		Analyzed:	**12-01-08 21:07**
		Analyst:	**AWG**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/L	0.2
11104-28-2	Aroclor 1221	BRL		ug/L	0.2
11141-16-5	Aroclor 1232	BRL		ug/L	0.2
53469-21-9	Aroclor 1242	BRL		ug/L	0.2
12672-29-6	Aroclor 1248	BRL		ug/L	0.2
11097-69-1	Aroclor 1254	BRL		ug/L	0.2
11096-82-5	Aroclor 1260	BRL		ug/L	0.2
37324-23-5	Aroclor 1262 †	BRL		ug/L	0.2
11100-14-4	Aroclor 1268 †	BRL		ug/L	0.2

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro-*m*-xylene	0.20	0.18	**88** %	30 - 150 %
	Decachlorobiphenyl	0.20	0.19	**94** %	30 - 150 %
Second Column	Tetrachloro-*m*-xylene	0.20	0.19	**95** %	30 - 150 %
	Decachlorobiphenyl	0.20	0.18	**92** %	30 - 150 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Non-target analyte. Result is based on a single mid-range calibration standard.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category:	**EPA Method 8011**	Instrument ID:	**GC-6 HP 5890**
QC Batch ID:	**PV-0945-E**	Extracted:	**11-29-08 11:00**
Matrix:	**Aqueous**	Analyzed:	**11-29-08 14:57**
Units:	**ug/L**	Analyst:	**CRL**

CAS Number	Analyte	Spiked	Measured		Recovery		QC Limits
			1st Column	2nd Column	1st Column	2nd Column	
106-93-4	1,2-Dibromoethane (EDB)	0.20	0.20	0.19	**98** %	**96** %	70 - 130 %
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.20	0.20	0.19	**100** %	**96** %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8011**	Instrument ID:	**GC-6 HP 5890**
QC Batch ID:	**PV-0945-E**	Extracted:	**11-29-08 11:00**
Matrix:	**Aqueous**	Analyzed:	**11-29-08 16:28**
		Analyst:	**CRL**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.02
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	BRL		ug/L	0.02

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **Metals**
Matrix: **Aqueous**
Units: **mg/L**

Analysis Method	QC Batch ID	Prep Method	Prepared	Instrument ID	Analyst
EPA 200.8	MB-3549-WL	EPA 200.7	11-25-08 14:16	ICP-MS PE ELAN 9000	MFP
EPA 200.7	MB-3549-WL	EPA 200.7	11-25-08 14:16	ICP-1 PE 3000	MFP

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits	Analyzed	Method
7440-36-0	Antimony	5.0	4.6	**92** %	85-115 %	12-01-08 00:00	EPA 200.8
7440-38-2	Arsenic	5.0	4.7	**95** %	85-115 %	12-01-08 00:00	EPA 200.8
7440-43-9	Cadmium	1.0	1.0	**96** %	85-115 %	11-26-08 20:04	EPA 200.7
7440-47-3	Chromium	1.0	1.0	**95** %	85-115 %	11-26-08 20:04	EPA 200.7
7440-50-8	Copper	1.0	0.9	**90** %	85-115 %	12-01-08 21:42	EPA 200.7
7439-89-6	Iron	5.0	5.0	**101** %	85-115 %	11-26-08 20:04	EPA 200.7
7439-92-1	Lead	5.0	4.6	**92** %	85-115 %	12-01-08 00:00	EPA 200.8
7440-02-0	Nickel	1.0	1.0	**96** %	85-115 %	11-26-08 20:04	EPA 200.7
7782-49-2	Selenium	5.0	5.0	**99** %	85-115 %	11-26-08 20:04	EPA 200.7
7440-22-4	Silver	1.0	1.0	**102** %	85-115 %	12-02-08 22:05	EPA 200.7
7440-66-6	Zinc	1.0	1.0	**96** %	85-115 %	11-26-08 20:04	EPA 200.7

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **Metals**
Matrix: **Aqueous**

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 200.8	MB-3549-WB	EPA 200.8	11-25-08 14:16	50 mL	ICP-MS PE ELAN 9000	MFP
EPA 200.7	MB-3549-WB	EPA 200.7	11-25-08 14:16	50 mL	ICP-1 PE 3000	MFP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-36-0	Antimony	BRL		mg/L	0.003	1	12-01-08 00:00	EPA 200.8
7440-38-2	Arsenic	BRL		mg/L	0.01	1	12-01-08 00:00	EPA 200.8
7440-43-9	Cadmium	BRL		mg/L	0.0025	1	11-26-08 20:00	EPA 200.7
7440-47-3	Chromium	BRL		mg/L	0.01	1	12-01-08 18:50	EPA 200.7
7440-50-8	Copper	BRL		mg/L	0.025	1	12-01-08 21:38	EPA 200.7
7439-89-6	Iron	BRL		mg/L	0.1	1	11-26-08 20:00	EPA 200.7
7439-92-1	Lead	BRL		mg/L	0.001	1	12-01-08 00:00	EPA 200.8
7440-02-0	Nickel	BRL		mg/L	0.04	1	11-26-08 20:00	EPA 200.7
7782-49-2	Selenium	BRL		mg/L	0.05	1	11-26-08 20:00	EPA 200.7
7440-22-4	Silver	BRL		mg/L	0.007	1	11-26-08 20:00	EPA 200.7
7440-66-6	Zinc	BRL		mg/L	0.2	1	11-26-08 20:00	EPA 200.7

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **Metals**
Matrix: **Aqueous**
Units: **mg/L**

Analysis Method	QC Batch ID	Prep Method	Prepared	Instrument ID	Analyst
EPA 245.1	MP-2157-WL	EPA 245.1	12-01-08 10:05	CVAA-1 PE FIMS	DET

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits	Analyzed	Method
7439-97-6	Mercury	0.0010	0.0010	**96** %	85-115 %	12-01-08 13:02	EPA 245.1

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **Metals**
Matrix: **Aqueous**

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 245.1	MP-2157-WB	EPA 245.1	12-01-08 10:05	25 mL	CVAA-1 PE FIMS	DET

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-97-6	Mercury	BRL		mg/L	0.0002	1	12-01-08 13:02	EPA 245.1

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA Method 8260B**	Instrument ID:	**MS-7 HP 6890**	Instrument ID:	**MS-7 HP 6890**
QC Batch ID:	**VM7-3057-W**	Analyzed:	**12-01-08 07:43**	Analyzed:	**12-01-08 08:23**
Matrix:	**Aqueous**	Analyst:	**LMG**	Analyst:	**LMG**
Units:	**ug/L**				

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
75-71-8	Dichlorodifluoromethane	10	7.5	**75** %	10	7.3	**73** %	**3** %	70 - 130 %	25%
74-87-3	Chloromethane	10	8.0	**80** %	10	8.1	**81** %	**1** %	70 - 130 %	25%
75-01-4	Vinyl Chloride	10	10	**103** %	10	10	**104** %	**1** %	70 - 130 %	25%
74-83-9	Bromomethane	10	11	**112** %	10	11	**106** %	**6** %	70 - 130 %	25%
75-00-3	Chloroethane	10	9.2	**92** %	10	9.1	**91** %	**2** %	70 - 130 %	25%
75-69-4	Trichlorofluoromethane	10	7.9	**79** %	10	7.9	**79** %	**1** %	70 - 130 %	25%
60-29-7	Diethyl Ether	20	17	**83** %	20	17	**84** %	**2** %	70 - 130 %	25%
75-35-4	1,1-Dichloroethene	10	8.8	**88** %	10	8.7	**87** %	**1** %	70 - 130 %	25%
76-13-1	1,1,2-Trichlorotrifluoroethane	20	18	**92** %	20	18	**92** %	**0** %	70 - 130 %	25%
67-64-1	Acetone	20	17	**85** %	20	16	**78** %	**9** %	70 - 130 %	25%
75-15-0	Carbon Disulfide	20	15	**74** %	20	15	**74** %	**1** %	70 - 130 %	25%
75-09-2	Methylene Chloride	10	7.1	**71** %	10	7.4	**74** %	**4** %	70 - 130 %	25%
156-60-5	*trans*-1,2-Dichloroethene	10	8.7	**87** %	10	8.9	**89** %	**2** %	70 - 130 %	25%
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	10	9.5	**95** %	10	10	**101** %	**6** %	70 - 130 %	25%
75-34-3	1,1-Dichloroethane	10	8.8	**88** %	10	8.8	**88** %	**0** %	70 - 130 %	25%
594-20-7	2,2-Dichloropropane	10	9.4	**94** %	10	9.2	**92** %	**2** %	70 - 130 %	25%
156-59-2	*cis*-1,2-Dichloroethene	10	9.2	**92** %	10	8.8	**88** %	**4** %	70 - 130 %	25%
78-93-3	2-Butanone (MEK)	20	16	**80** %	20	20	**99** %	**21** %	70 - 130 %	25%
74-97-5	Bromochloromethane	10	9.3	**93** %	10	9.2	**92** %	**1** %	70 - 130 %	25%
109-99-9	Tetrahydrofuran (THF)	20	18	**88** %	20	19	**96** %	**8** %	70 - 130 %	25%
67-66-3	Chloroform	10	9.1	**91** %	10	8.8	**88** %	**3** %	70 - 130 %	25%
71-55-6	1,1,1-Trichloroethane	10	8.4	**84** %	10	8.6	**86** %	**3** %	70 - 130 %	25%
56-23-5	Carbon Tetrachloride	10	7.5	**75** %	10	7.8	**78** %	**4** %	70 - 130 %	25%
563-58-6	1,1-Dichloropropene	10	8.6	**86** %	10	8.6	**86** %	**0** %	70 - 130 %	25%
71-43-2	Benzene	10	8.9	**89** %	10	9.1	**91** %	**3** %	70 - 130 %	25%
107-06-2	1,2-Dichloroethane	10	9.2	**92** %	10	9.5	**95** %	**3** %	70 - 130 %	25%
79-01-6	Trichloroethene	10	8.4	**84** %	10	8.2	**82** %	**3** %	70 - 130 %	25%
78-87-5	1,2-Dichloropropane	10	9.2	**92** %	10	9.2	**92** %	**1** %	70 - 130 %	25%
74-95-3	Dibromomethane	10	9.6	**96** %	10	9.4	**94** %	**2** %	70 - 130 %	25%
75-27-4	Bromodichloromethane	10	10	**100** %	10	9.9	**99** %	**1** %	70 - 130 %	25%
123-91-1	1,4-Dioxane	200	170	**87** %	200	180	**92** %	**6** %	70 - 130 %	25%
10061-01-5	*cis*-1,3-Dichloropropene	10	8.4	**84** %	10	8.5	**85** %	**0** %	70 - 130 %	25%
108-10-1	4-Methyl-2-Pentanone (MIBK)	20	18	**89** %	20	18	**91** %	**2** %	70 - 130 %	25%
108-88-3	Toluene	10	8.2	**82** %	10	8.1	**81** %	**1** %	70 - 130 %	25%
10061-02-6	*trans*-1,3-Dichloropropene	10	8.4	**84** %	10	8.7	**87** %	**4** %	70 - 130 %	25%
79-00-5	1,1,2-Trichloroethane	10	9.3	**93** %	10	9.5	**95** %	**2** %	70 - 130 %	25%
127-18-4	Tetrachloroethene	10	8.3	**83** %	10	8.5	**85** %	**2** %	70 - 130 %	25%
142-28-9	1,3-Dichloropropane	10	9.3	**93** %	10	9.3	**93** %	**1** %	70 - 130 %	25%
591-78-6	2-Hexanone	20	20	**98** %	20	21	**104** %	**6** %	70 - 130 %	25%
124-48-1	Dibromochloromethane	10	9.1	**91** %	10	9.6	**96** %	**5** %	70 - 130 %	25%
106-93-4	1,2-Dibromoethane (EDB)	10	9.3	**93** %	10	9.7	**97** %	**5** %	70 - 130 %	25%
108-90-7	Chlorobenzene	10	8.9	**89** %	10	9.0	**90** %	**0** %	70 - 130 %	25%
630-20-6	1,1,1,2-Tetrachloroethane	10	9.0	**90** %	10	9.0	**90** %	**1** %	70 - 130 %	25%
100-41-4	Ethylbenzene	10	8.7	**87** %	10	8.8	**88** %	**1** %	70 - 130 %	25%
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	20	17	**86** %	20	18	**88** %	**2** %	70 - 130 %	25%
95-47-6	*ortho*-Xylene	10	8.6	**86** %	10	9.0	**90** %	**4** %	70 - 130 %	25%
100-42-5	Styrene	10	9.0	**90** %	10	9.3	**93** %	**3** %	70 - 130 %	25%
75-25-2	Bromoform	10	8.5	**85** %	10	8.5	**85** %	**1** %	70 - 130 %	25%
98-82-8	Isopropylbenzene	10	7.5	**75** %	10	7.5	**75** %	**0** %	70 - 130 %	25%

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA Method 8260B**	Instrument ID:	**MS-7 HP 6890**	Instrument ID:	**MS-7 HP 6890**
QC Batch ID:	**VM7-3057-W**	Analyzed:	**12-01-08 07:43**	Analyzed:	**12-01-08 08:23**
Matrix:	**Aqueous**	Analyst:	**LMG**	Analyst:	**LMG**
Units:	**ug/L**				

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
108-86-1	Bromobenzene	10	9.4	**94** %	10	9.4	**94** %	**0** %	70 - 130 %	25%
79-34-5	1,1,2,2-Tetrachloroethane	10	9.0	**90** %	10	9.0	**90** %	**1** %	70 - 130 %	25%
96-18-4	1,2,3-Trichloropropane	10	11	**107** %	10	11	**107** %	**0** %	70 - 130 %	25%
103-65-1	*n*-Propylbenzene	10	8.8	**88** %	10	8.9	**89** %	**1** %	70 - 130 %	25%
95-49-8	2-Chlorotoluene	10	8.9	**89** %	10	9.1	**91** %	**2** %	70 - 130 %	25%
108-67-8	1,3,5-Trimethylbenzene	10	8.7	**87** %	10	8.8	**88** %	**1** %	70 - 130 %	25%
106-43-4	4-Chlorotoluene	10	9.1	**91** %	10	9.3	**93** %	**2** %	70 - 130 %	25%
98-06-6	*tert*-Butylbenzene	10	8.5	**85** %	10	8.7	**87** %	**3** %	70 - 130 %	25%
95-63-6	1,2,4-Trimethylbenzene	10	9.0	**90** %	10	9.1	**91** %	**1** %	70 - 130 %	25%
135-98-8	*sec*-Butylbenzene	10	8.4	**84** %	10	8.4	**84** %	**0** %	70 - 130 %	25%
541-73-1	1,3-Dichlorobenzene	10	8.9	**89** %	10	8.8	**88** %	**1** %	70 - 130 %	25%
99-87-6	4-Isopropyltoluene	10	8.4	**84** %	10	8.5	**85** %	**0** %	70 - 130 %	25%
106-46-7	1,4-Dichlorobenzene	10	8.7	**87** %	10	8.7	**87** %	**0** %	70 - 130 %	25%
95-50-1	1,2-Dichlorobenzene	10	8.7	**87** %	10	8.7	**87** %	**0** %	70 - 130 %	25%
104-51-8	*n*-Butylbenzene	10	8.5	**85** %	10	8.5	**85** %	**0** %	70 - 130 %	25%
96-12-8	1,2-Dibromo-3-chloropropane	10	7.9	**79** %	10	8.6	**86** %	**9** %	70 - 130 %	25%
120-82-1	1,2,4-Trichlorobenzene	10	8.8	**88** %	10	8.7	**87** %	**1** %	70 - 130 %	25%
87-68-3	Hexachlorobutadiene	10	7.8	**78** %	10	7.8	**78** %	**1** %	70 - 130 %	25%
91-20-3	Naphthalene	10	9.3	**93** %	10	9.1	**91** %	**2** %	70 - 130 %	25%
87-61-6	1,2,3-Trichlorobenzene	10	9.2	**92** %	10	9.3	**93** %	**1** %	70 - 130 %	25%
75-65-0	*tert*-Butyl Alcohol (TBA)	200	180	**88** %	200	190	**96** %	**9** %	70 - 130 %	25%
108-20-3	Di-isopropyl Ether (DIPE)	10	9.9	**99** %	10	9.8	**98** %	**1** %	70 - 130 %	25%
637-92-3	Ethyl *tert*-butyl Ether (ETBE)	10	9.7	**97** %	10	9.5	**95** %	**3** %	70 - 130 %	25%
994-05-8	*tert*-Amyl Methyl Ether (TAME)	10	9.1	**91** %	10	9.6	**96** %	**6** %	70 - 130 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
Dibromofluoromethane	10	10	**103** %	10	10	**103** %		70 - 130 %
1,2-Dichloroethane-d_4	10	11	**107** %	10	10	**103** %		70 - 130 %
Toluene-d_8	10	10	**103** %	10	10	**104** %		70 - 130 %
4-Bromofluorobenzene	10	10	**97** %	10	10	**99** %		70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Sample preparation performed by EPA Method 5030B.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM7-3057-W**
Matrix: **Aqueous**

Instrument ID: **MS-7 HP 6890**
Analyzed: **12-01-08 08:52**
Analyst: **LMG**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	0.5
74-87-3	Chloromethane	BRL		ug/L	0.5
75-01-4	Vinyl Chloride	BRL		ug/L	0.5
74-83-9	Bromomethane	BRL		ug/L	0.5
75-00-3	Chloroethane	BRL		ug/L	0.5
75-69-4	Trichlorofluoromethane	BRL		ug/L	0.5
60-29-7	Diethyl Ether	BRL		ug/L	2
75-35-4	1,1-Dichloroethene	BRL		ug/L	0.5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	5
67-64-1	Acetone	BRL		ug/L	10
75-15-0	Carbon Disulfide	BRL		ug/L	5
75-09-2	Methylene Chloride	BRL		ug/L	3
156-60-5	*trans*-1,2-Dichloroethene	BRL		ug/L	0.5
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	BRL		ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL		ug/L	0.5
594-20-7	2,2-Dichloropropane	BRL		ug/L	0.5
156-59-2	*cis*-1,2-Dichloroethene	BRL		ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL		ug/L	5
74-97-5	Bromochloromethane	BRL		ug/L	0.5
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	5
67-66-3	Chloroform	BRL		ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL		ug/L	0.5
563-58-6	1,1-Dichloropropene	BRL		ug/L	0.5
71-43-2	Benzene	BRL		ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL		ug/L	0.5
79-01-6	Trichloroethene	BRL		ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL		ug/L	0.5
74-95-3	Dibromomethane	BRL		ug/L	0.5
75-27-4	Bromodichloromethane	BRL		ug/L	0.5
123-91-1	1,4-Dioxane	BRL		ug/L	500
10061-01-5	*cis*-1,3-Dichloropropene	BRL		ug/L	0.4
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	5
108-88-3	Toluene	BRL		ug/L	0.5
10061-02-6	*trans*-1,3-Dichloropropene	BRL		ug/L	0.4
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	0.5
127-18-4	Tetrachloroethene	BRL		ug/L	0.5
142-28-9	1,3-Dichloropropane	BRL		ug/L	0.5
591-78-6	2-Hexanone	BRL		ug/L	5
124-48-1	Dibromochloromethane	BRL		ug/L	0.5
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.5
108-90-7	Chlorobenzene	BRL		ug/L	0.5
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	0.5
100-41-4	Ethylbenzene	BRL		ug/L	0.5
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL		ug/L	0.5
95-47-6	*ortho*-Xylene	BRL		ug/L	0.5
100-42-5	Styrene	BRL		ug/L	0.5
75-25-2	Bromoform	BRL		ug/L	0.5
98-82-8	Isopropylbenzene	BRL		ug/L	0.5

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM7-3057-W**
Matrix: **Aqueous**
Instrument ID: **MS-7 HP 6890**
Analyzed: **12-01-08 08:52**
Analyst: **LMG**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
108-86-1	Bromobenzene	BRL		ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	0.5
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	0.5
103-65-1	*n*-Propylbenzene	BRL		ug/L	0.5
95-49-8	2-Chlorotoluene	BRL		ug/L	0.5
108-67-8	1,3,5-Trimethylbenzene	BRL		ug/L	0.5
106-43-4	4-Chlorotoluene	BRL		ug/L	0.5
98-06-6	*tert*-Butylbenzene	BRL		ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	BRL		ug/L	0.5
135-98-8	*sec*-Butylbenzene	BRL		ug/L	0.5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	0.5
99-87-6	4-Isopropyltoluene	BRL		ug/L	0.5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	0.5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	0.5
104-51-8	*n*-Butylbenzene	BRL		ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	0.5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	0.5
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
91-20-3	Naphthalene	BRL		ug/L	0.5
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	0.5
75-65-0	*tert*-Butyl Alcohol (TBA)	BRL		ug/L	0.5
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	20
637-92-3	Ethyl *tert*-butyl Ether (ETBE)	BRL		ug/L	0.5
994-05-8	*tert*-Amyl Methyl Ether (TAME)	BRL		ug/L	0.5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	10	**98** %	70 - 130 %
1,2-Dichloroethane-d_4	10	10	**104** %	70 - 130 %
Toluene-d_8	10	10	**99** %	70 - 130 %
4-Bromofluorobenzene	10	10	**98** %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample preparation performed by EPA Method 5030B.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C (Part 2)**	Instrument ID:	**MS-6 HP 6890**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**SV-2323-F**	Extracted:	**12-01-08 13:30**	Extracted:	**12-01-08 13:30**
Matrix:	**Aqueous**	Analyzed:	**12-02-08 11:07**	Analyzed:	**12-02-08 11:47**
Units:	**ug/L**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
91-20-3	Naphthalene	5.0	4.0	**80** %	5.0	3.8	**77** %	**5** %	40 - 140 %	20%
91-57-6	2-Methylnaphthalene	5.0	3.8	**76** %	5.0	3.6	**72** %	**6** %	40 - 140 %	20%
208-96-8	Acenaphthylene	5.0	5.2	**104** %	5.0	5.0	**101** %	**4** %	40 - 140 %	20%
83-32-9	Acenaphthene	5.0	5.3	**106** %	5.0	5.2	**104** %	**2** %	40 - 140 %	20%
86-73-7	Fluorene	5.0	5.3	**105** %	5.0	5.3	**105** %	**0** %	40 - 140 %	20%
85-01-8	Phenanthrene	5.0	4.9	**98** %	5.0	4.9	**99** %	**1** %	40 - 140 %	20%
120-12-7	Anthracene	5.0	5.3	**107** %	5.0	5.4	**109** %	**1** %	40 - 140 %	20%
206-44-0	Fluoranthene	5.0	5.0	**101** %	5.0	5.0	**100** %	**1** %	40 - 140 %	20%
129-00-0	Pyrene	5.0	4.8	**97** %	5.0	5.1	**101** %	**4** %	40 - 140 %	20%
56-55-3	Benzo[a]anthracene	5.0	4.8	**96** %	5.0	4.8	**97** %	**0** %	40 - 140 %	20%
218-01-9	Chrysene	5.0	4.8	**95** %	5.0	4.8	**95** %	**0** %	40 - 140 %	20%
205-99-2	Benzo[b]fluoranthene	5.0	5.4	**108** %	5.0	5.0	**99** %	**9** %	40 - 140 %	20%
207-08-9	Benzo[k]fluoranthene	5.0	5.3	**107** %	5.0	4.7	**94** %	**13** %	40 - 140 %	20%
50-32-8	Benzo[a]pyrene	5.0	5.4	**109** %	5.0	4.8	**96** %	**12** %	40 - 140 %	20%
193-39-5	Indeno[1,2,3-c,d]pyrene	5.0	5.3	**105** %	5.0	4.1	**81** %	**26** % q	40 - 140 %	20%
53-70-3	Dibenzo[a,h]anthracene	5.0	5.2	**105** %	5.0	4.1	**81** %	**25** % q	40 - 140 %	20%
191-24-2	Benzo[g,h,i]perylene	5.0	5.1	**103** %	5.0	4.1	**81** %	**23** % q	40 - 140 %	20%
87-68-3	Hexachlorobutadiene	5.0	3.3	**66** %	5.0	3.1	**62** %	**6** %	40 - 140 %	20%
118-74-1	Hexachlorobenzene	5.0	4.2	**84** %	5.0	4.3	**86** %	**3** %	40 - 140 %	20%
87-86-5	Pentachlorophenol	5.0	4.5	**89** %	5.0	4.9	**98** %	**9** %	30 - 130 %	20%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
2-Fluorophenol	20	13	**67** %	20	12	**58** %		15 - 110 %
Phenol-d5	20	11	**54** %	20	10	**50** %		15 - 110 %
Nitrobenzene-d5	10	9.8	**98** %	10	9.6	**96** %		30 - 130 %
2-Fluorobiphenyl	10	8.4	**85** %	10	8.4	**84** %		30 - 130 %
2,4,6-Tribromophenol	20	17	**84** %	20	18	**90** %		15 - 110 %
Terphenyl-d14	10	9.0	**90** %	10	8.8	**88** %		30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Sample extraction performed by EPA Method 3510C.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

q Recovery outside recommended limits.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8270C (Part 2)**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**SV-2323-F**	Extracted:	**12-01-08 13:30**
Matrix:	**Aqueous**	Analyzed:	**12-02-08 12:28**
		Analyst:	**MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/L	0.5
91-57-6	2-Methylnaphthalene	BRL		ug/L	0.5
208-96-8	Acenaphthylene	BRL		ug/L	0.5
83-32-9	Acenaphthene	BRL		ug/L	0.5
86-73-7	Fluorene	BRL		ug/L	0.5
85-01-8	Phenanthrene	BRL		ug/L	0.5
120-12-7	Anthracene	BRL		ug/L	0.5
206-44-0	Fluoranthene	BRL		ug/L	0.5
129-00-0	Pyrene	BRL		ug/L	0.5
56-55-3	Benzo[a]anthracene	BRL		ug/L	0.1
218-01-9	Chrysene	BRL		ug/L	0.1
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	0.1
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	0.1
50-32-8	Benzo[a]pyrene	BRL		ug/L	0.1
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	0.1
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	0.1
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	0.1
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
118-74-1	Hexachlorobenzene	BRL		ug/L	0.5
87-86-5	Pentachlorophenol	BRL		ug/L	1.0

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	12	**62** %	15 - 110 %
Phenol-d5	20	10	**52** %	15 - 110 %
Nitrobenzene-d5	10	8.7	**87** %	30 - 130 %
2-Fluorobiphenyl	10	8.0	**80** %	30 - 130 %
2,4,6-Tribromophenol	20	16	**82** %	15 - 110 %
Terphenyl-d14	10	9.8	**98** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Sample extraction performed by EPA Method 3510C.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C (Part 1)**	Instrument ID:	**MS-12 Agilent 6890**	Instrument ID:	**MS-12 Agilent 6890**
QC Batch ID:	**SV-2323-F**	Extracted:	**12-01-08 13:30**	Extracted:	**12-01-08 13:30**
Matrix:	**Aqueous**	Analyzed:	**12-02-08 10:08**	Analyzed:	**12-02-08 10:50**
Units:	**ug/L**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
62-75-9	N-Nitrosodimethylamine	50	28	**56** %	50	29	**58** %	**2** %	40 - 140 %	20%
110-86-1	Pyridine	50	24	**49** %	50	31	**63** %	**25** % q	40 - 140 %	20%
108-95-2	Phenol	50	25	**49** %	50	25	**49** %	**0** %	30 - 130 %	20%
62-53-3	Aniline	50	38	**76** %	50	43	**85** %	**12** %	40 - 140 %	20%
111-44-4	Bis(2-chloroethyl) ether	50	39	**78** %	50	37	**74** %	**6** %	40 - 140 %	20%
95-57-8	2-Chlorophenol	50	38	**77** %	50	37	**73** %	**4** %	30 - 130 %	20%
541-73-1	1,3-Dichlorobenzene	50	38	**75** %	50	36	**71** %	**6** %	40 - 140 %	20%
106-46-7	1,4-Dichlorobenzene	50	38	**76** %	50	36	**72** %	**6** %	40 - 140 %	20%
100-51-6	Benzyl Alcohol	50	44	**88** %	50	42	**85** %	**3** %	30 - 130 %	20%
95-50-1	1,2-Dichlorobenzene	50	39	**78** %	50	37	**73** %	**6** %	40 - 140 %	20%
95-48-7	2-Methylphenol	50	39	**78** %	50	39	**77** %	**1** %	30 - 130 %	20%
108-60-1	Bis(2-chloroisopropyl) ether	50	40	**79** %	50	37	**74** %	**6** %	40 - 140 %	20%
106-44-5	4-Methylphenol	50	34	**67** %	50	34	**68** %	**1** %	30 - 130 %	20%
621-64-7	N-Nitrosodi-n-propylamine	50	45	**89** %	50	41	**82** %	**8** %	40 - 140 %	20%
98-86-2	Acetophenone	50	33	**67** %	50	30	**61** %	**9** %	40 - 140 %	20%
67-72-1	Hexachloroethane	50	38	**76** %	50	36	**72** %	**6** %	40 - 140 %	20%
98-95-3	Nitrobenzene	50	41	**82** %	50	38	**75** %	**8** %	40 - 140 %	20%
78-59-1	Isophorone	50	44	**89** %	50	41	**81** %	**9** %	40 - 140 %	20%
88-75-5	2-Nitrophenol	50	42	**84** %	50	39	**78** %	**8** %	30 - 130 %	20%
105-67-9	2,4-Dimethylphenol	50	43	**87** %	50	40	**80** %	**8** %	30 - 130 %	20%
111-91-1	Bis(2-chloroethoxy) methane	50	42	**85** %	50	39	**78** %	**9** %	40 - 140 %	20%
120-83-2	2,4-Dichlorophenol	50	44	**88** %	50	41	**82** %	**8** %	30 - 130 %	20%
120-82-1	1,2,4-Trichlorobenzene	50	41	**82** %	50	38	**75** %	**8** %	40 - 140 %	20%
106-47-8	4-Chloroaniline	50	44	**88** %	50	45	**90** %	**3** %	40 - 140 %	20%
87-68-3	Hexachlorobutadiene	50	40	**81** %	50	38	**75** %	**7** %	40 - 140 %	20%
59-50-7	4-Chloro-3-methylphenol	50	45	**90** %	50	44	**88** %	**3** %	30 - 130 %	20%
77-47-4	Hexachlorocyclopentadiene	50	37	**73** %	50	34	**69** %	**7** %	40 - 140 %	20%
88-06-2	2,4,6-Trichlorophenol	50	50	**101** %	50	47	**94** %	**7** %	30 - 130 %	20%
95-95-4	2,4,5-Trichlorophenol	50	52	**103** %	50	48	**96** %	**7** %	30 - 130 %	20%
91-58-7	2-Chloronaphthalene	50	48	**96** %	50	44	**88** %	**9** %	40 - 140 %	20%
88-74-4	2-Nitroaniline	50	50	**100** %	50	47	**94** %	**6** %	40 - 140 %	20%
100-25-4	1,4-Dinitrobenzene	50	52	**104** %	50	50	**99** %	**5** %	40 - 140 %	20%
131-11-3	Dimethyl phthalate	50	50	**100** %	50	48	**95** %	**5** %	40 - 140 %	20%
99-65-0	1,3-Dinitrobenzene	50	52	**103** %	50	49	**99** %	**4** %	40 - 140 %	20%
606-20-2	2,6-Dinitrotoluene	50	51	**103** %	50	49	**97** %	**5** %	40 - 140 %	20%
528-29-0	1,2-Dinitrobenzene	50	49	**99** %	50	47	**93** %	**6** %	40 - 140 %	20%
99-09-2	3-Nitroaniline	50	53	**107** %	50	54	**107** %	**0** %	40 - 140 %	20%
51-28-5	2,4-Dinitrophenol	50	46	**92** %	50	45	**91** %	**1** %	30 - 130 %	20%
100-02-7	4-Nitrophenol	50	30	**59** %	50	31	**62** %	**5** %	30 - 130 %	20%
132-64-9	Dibenzofuran	50	49	**98** %	50	45	**91** %	**8** %	40 - 140 %	20%
121-14-2	2,4-Dinitrotoluene	50	53	**106** %	50	51	**102** %	**4** %	40 - 140 %	20%
84-66-2	Diethyl phthalate	50	50	**101** %	50	48	**97** %	**4** %	40 - 140 %	20%
7005-72-3	4-Chlorophenyl phenyl ether	50	48	**97** %	50	46	**91** %	**6** %	40 - 140 %	20%
100-01-6	4-Nitroaniline	50	60	**120** %	50	58	**116** %	**3** %	40 - 140 %	20%
534-52-1	4,6-Dinitro-2-methylphenol	50	51	**102** %	50	49	**98** %	**4** %	30 - 130 %	20%
86-30-6	N-Nitrosodiphenylamine †	50	100	**204** % q	50	95	**190** % q	**7** %	40 - 140 %	20%
122-66-7	1,2-Diphenylhydrazine à	50	49	**98** %	50	45	**91** %	**7** %	40 - 140 %	20%
101-55-3	4-Bromophenyl phenyl ether	50	50	**99** %	50	47	**94** %	**6** %	40 - 140 %	20%

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C (Part 1)**	Instrument ID:	**MS-12 Agilent 6890**	Instrument ID:	**MS-12 Agilent 6890**
QC Batch ID:	**SV-2323-F**	Extracted:	**12-01-08 13:30**	Extracted:	**12-01-08 13:30**
Matrix:	**Aqueous**	Analyzed:	**12-02-08 10:08**	Analyzed:	**12-02-08 10:50**
Units:	**ug/L**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
86-74-8	Carbazole	50	58	**117** %	50	56	**113** %	**4** %	40 - 140 %	20%
84-74-2	Di-*n*-butyl phthalate	50	49	**98** %	50	47	**95** %	**3** %	40 - 140 %	20%
85-68-7	Butyl benzyl phthalate	50	51	**102** %	50	50	**100** %	**1** %	40 - 140 %	20%
91-94-1	3,3'-Dichlorobenzidine	50	50	**100** %	50	51	**101** %	**1** %	40 - 140 %	20%
117-81-7	Bis(2-ethylhexyl) phthalate	50	46	**92** %	50	50	**100** %	**9** %	40 - 140 %	20%
117-84-0	Di-*n*-octyl phthalate	50	45	**89** %	50	49	**98** %	**9** %	40 - 140 %	20%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
2-Fluorophenol	20	12	**61** %	20	12	**59** %		15 - 110 %
Phenol-d5	20	11	**53** %	20	10	**50** %		15 - 110 %
Nitrobenzene-d5	10	9.4	**94** %	10	8.2	**83** %		30 - 130 %
2-Fluorobiphenyl	10	11	**111** %	10	9.8	**98** %		30 - 130 %
2,4,6-Tribromophenol	20	24	**118** % q	20	22	**108** %		15 - 110 %
Terphenyl-d14	10	11	**108** %	10	10	**102** %		30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Sample extraction performed by EPA Method 3510C.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

q Recovery outside recommended limits.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8270C (Part 1)**
QC Batch ID: **SV-2323-F**
Matrix: **Aqueous**

Instrument ID: **MS-12 Agilent 6890**
Extracted: **12-01-08 13:30**
Analyzed: **12-02-08 11:33**
Analyst: **MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
62-75-9	N-Nitrosodimethylamine	BRL		ug/L	5
110-86-1	Pyridine	BRL		ug/L	5
108-95-2	Phenol	BRL		ug/L	5
62-53-3	Aniline	BRL		ug/L	5
111-44-4	Bis(2-chloroethyl) ether	BRL		ug/L	5
95-57-8	2-Chlorophenol	BRL		ug/L	5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	5
100-51-6	Benzyl Alcohol	BRL		ug/L	5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	5
95-48-7	2-Methylphenol	BRL		ug/L	5
108-60-1	Bis(2-chloroisopropyl) ether	BRL		ug/L	5
108-39-4/106-44-5	3 and 4-Methylphenol *	BRL		ug/L	5
621-64-7	N-Nitrosodi-n-propylamine	BRL		ug/L	5
98-86-2	Acetophenone	BRL		ug/L	5
67-72-1	Hexachloroethane	BRL		ug/L	5
98-95-3	Nitrobenzene	BRL		ug/L	5
78-59-1	Isophorone	BRL		ug/L	5
88-75-5	2-Nitrophenol	BRL		ug/L	5
105-67-9	2,4-Dimethylphenol	BRL		ug/L	5
111-91-1	Bis(2-chloroethoxy) methane	BRL		ug/L	5
120-83-2	2,4-Dichlorophenol	BRL		ug/L	5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	5
106-47-8	4-Chloroaniline	BRL		ug/L	5
87-68-3	Hexachlorobutadiene	BRL		ug/L	5
59-50-7	4-Chloro-3-methylphenol	BRL		ug/L	5
77-47-4	Hexachlorocyclopentadiene	BRL		ug/L	5
88-06-2	2,4,6-Trichlorophenol	BRL		ug/L	5
95-95-4	2,4,5-Trichlorophenol	BRL		ug/L	5
91-58-7	2-Chloronaphthalene	BRL		ug/L	5
88-74-4	2-Nitroaniline	BRL		ug/L	5
100-25-4	1,4-Dinitrobenzene	BRL		ug/L	5
131-11-3	Dimethyl phthalate	BRL		ug/L	5
99-65-0	1,3-Dinitrobenzene	BRL		ug/L	5
606-20-2	2,6-Dinitrotoluene	BRL		ug/L	5
528-29-0	1,2-Dinitrobenzene	BRL		ug/L	5
99-09-2	3-Nitroaniline	BRL		ug/L	5
51-28-5	2,4-Dinitrophenol	BRL		ug/L	10
100-02-7	4-Nitrophenol	BRL		ug/L	5
132-64-9	Dibenzofuran	BRL		ug/L	5
121-14-2	2,4-Dinitrotoluene	BRL		ug/L	5
84-66-2	Diethyl phthalate	BRL		ug/L	5
7005-72-3	4-Chlorophenyl phenyl ether	BRL		ug/L	5
100-01-6	4-Nitroaniline	BRL		ug/L	5
534-52-1	4,6-Dinitro-2-methylphenol	BRL		ug/L	5

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8270C (Part 1)**
QC Batch ID: **SV-2323-F**
Matrix: **Aqueous**

Instrument ID: **MS-12 Agilent 6890**
Extracted: **12-01-08 13:30**
Analyzed: **12-02-08 11:33**
Analyst: **MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
86-30-6	N-Nitrosodiphenylamine †	BRL		ug/L	5
122-66-7	1,2-Diphenylhydrazine ◊	BRL		ug/L	5
101-55-3	4-Bromophenyl phenyl ether	BRL		ug/L	5
86-74-8	Carbazole	BRL		ug/L	5
84-74-2	Di-*n*-butyl phthalate	BRL		ug/L	5
85-68-7	Butyl benzyl phthalate	BRL		ug/L	5
91-94-1	3,3'-Dichlorobenzidine	BRL		ug/L	5
117-81-7	Bis(2-ethylhexyl) phthalate	BRL		ug/L	5
117-84-0	Di-*n*-octyl phthalate	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	10	**52** %	15 - 110 %
Phenol-d5	20	9	**45** %	15 - 110 %
Nitrobenzene-d5	10	8	**77** %	30 - 130 %
2-Fluorobiphenyl	10	8	**85** %	30 - 130 %
2,4,6-Tribromophenol	20	14	**71** %	15 - 110 %
Terphenyl-d14	10	9	**88** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C.

Report Notations:
BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

* Analyzed as 4-Methylphenol.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states.
Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT

Department of Health Services, PH-0586 — Potable Water, Wastewater, Solid Waste and Soil
http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/Out State.pdf

MASSACHUSETTS

Department of Environmental Protection, M-MA-103 — Potable Water and Non-Potable Water
http://public.dep.state.ma.us/labcert/labcert.aspx

Department of Labor,
Division of Occupational Safety, AA000195 — Asbestos Analytical Services, Class A
http://www.mass.gov/dos/forms/la-rpt list aa.pdf

NEW HAMPSHIRE

Department of Environmental Services, 202708 — Potable Water, Non-Potable Water, Solid and Chemical Materials
http://www4.egov.nh.gov/DES/NHELAP

NEW YORK

Department of Health, 11754 — Potable Water, Non-Potable Water, Solid and Hazardous Waste
http://www.wadsworth.org/labcert/elap/comm.html

NIST NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP)

NVLAP Lab Code 200751-1 — Bulk Asbestos Fiber Analysis (PLM)
http://ts.nist.gov/Standards/scopes/plmtm.htm

RHODE ISLAND

Department of Health,
Division of Laboratories, LAO00054 — Potable and Non-Potable Water Microbiology, Organic and Inorganic Chemistry
http://www.health.ri.gov/labs/outofstatelabs.pdf

U.S. DEPARTMENT OF AGRICULTURE

USDA, Soil Permit, S-53921 — Foreign soil import permit

VERMONT

Department of Health, VT-87643 — Potable Water
http://healthvermont.gov/enviro/ph_lab/water_test.aspx#cert

GROUNDWATER ANALYTICAL

Certifications and Approvals

MASSACHUSETTS **Department of Environmental Protection, M-MA-103**

Groundwater Analytical maintains MassDEP environmental laboratory certification for only the methods and analytes listed below. Analyses for certified analytes are conducted in accordance with MassDEP certification standards, except as may be specifically noted in the project narrative.

Potable Water (Drinking Water)

Analyte	Method
1,2-Dibromo-3-Chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1
Alkalinity, Total	SM 2320-B
Antimony	EPA 200.8
Antimony	EPA 200.9
Arsenic	EPA 200.8
Arsenic	EPA 200.9
Barium	EPA 200.7
Barium	EPA 200.8
Beryllium	EPA 200.7
Beryllium	EPA 200.8
Cadmium	EPA 200.7
Cadmium	EPA 200.8
Calcium	EPA 200.7
Chlorine, Residual Free	SM 4500-CL-G
Chromium	EPA 200.7
Copper	EPA 200.7
Copper	EPA 200.8
Cyanide, Total	Lachat 10-204-00-1-A
E. Coli (Treatment and Distribution)	EC-MUG SM 9221-F
E. Coli (Treatment and Distribution)	Enz. Sub. SM 9223
E. Coli (Treatment and Distribution)	NA-MUG SM 9222-G
Fecal Coliform (Source Water)	MF SM 9222-D
Fluoride	EPA 300.0
Fluoride	SM 4500-F-C
Heterotrophic Plate Count	SM 9215-B
Lead	EPA 200.8
Lead	EPA 200.9
Mercury	EPA 245.1
Nickel	EPA 200.7
Nickel	EPA 200.8
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Nitrite-N	EPA 300.0
Nitrite-N	Lachat 10-107-04-1-C
pH	SM 4500-H-B
Selenium	EPA 200.8
Selenium	EPA 200.9
Silver	EPA 200.7
Silver	EPA 200.8
Sodium	EPA 200.7
Sulfate	EPA 300.0
Thallium	EPA 200.8
Thallium	EPA 200.9
Total Coliform (Treatment and Distribution)	Enz. Sub. SM 9223
Total Coliform (Treatment and Distribution)	MF SM 9222-B
Total Dissolved Solids	SM 2540-C
Trihalomethanes	EPA 524.2
Turbidity	SM 2130-B
Volatile Organic Compounds	EPA 524.2

Non-Potable Water (Wastewater)

Analyte	Method
Aldrin	EPA 608
Alkalinity, Total	Lachat 10-303-31-1-A
Alpha-BHC	EPA 608
Aluminum	EPA 200.7
Aluminum	EPA 200.8

Non-Potable Water (Wastewater)

Analyte	Method
Ammonia-N	Lachat 10-107-06-1-B
Antimony	EPA 200.7
Antimony	EPA 200.8
Antimony	EPA 200.9
Arsenic	EPA 200.7
Arsenic	EPA 200.8
Arsenic	EPA 200.9
Beryllium	EPA 200.7
Beryllium	EPA 200.8
Beta-BHC	EPA 608
Biochemical Oxygen Demand	SM 5210-B
Cadmium	EPA 200.7
Cadmium	EPA 200.8
Calcium	EPA 200.7
Chemical Oxygen Demand	SM 5220-D
Chlordane	EPA 608
Chloride	EPA 300.0
Chlorine, Total Residual	SM 4500-CL-G
Chromium	EPA 200.7
Chromium	EPA 200.8
Cobalt	EPA 200.7
Cobalt	EPA 200.8
Copper	EPA 200.7
Copper	EPA 200.8
Copper	EPA 200.9
Cyanide, Total	Lachat 10-204-00-1-A
DDD	EPA 608
DDE	EPA 608
DDT	EPA 608
Delta-BHC	EPA 608
Dieldrin	EPA 608
Endosulfan I	EPA 608
Endosulfan II	EPA 608
Endosulfan Sulfate	EPA 608
Endrin	EPA 608
Endrin Aldehyde	EPA 608
Fluoride	EPA 300.0
Gamma-BHC	EPA 608
Hardness (CaCO3), Total	EPA 200.7
Hardness (CaCO3), Total	SM 2340-B
Heptachlor	EPA 608
Heptachlor Epoxide	EPA 608
Iron	EPA 200.7
Kjeldahl-N	Lachat 10-107-06-02-D
Lead	EPA 200.7
Lead	EPA 200.9
Magnesium	EPA 200.7
Manganese	EPA 200.7
Manganese	EPA 200.8
Mercury	EPA 245.1
Molybdenum	EPA 200.7
Molybdenum	EPA 200.8
Nickel	EPA 200.7
Nickel	EPA 200.8
Nickel	EPA 200.9
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Non-Filterable Residue	SM 2540-D
Oil and Grease	EPA 1664

GROUNDWATER ANALYTICAL

Certifications and Approvals

MASSACHUSETTS **Department of Environmental Protection, M-MA-103**

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Non-Potable Water (Wastewater)

Analyte	Method
Orthophosphate	Lachat 10-115-01-1-A
pH	SM 4500-H-B
Phenolics, Total	EPA 420.4
Phenolics, Total	Lachat 10-210-00-1-B
Phosphorus, Total	Lachat 10-115-01-1-C
Phosphorus, Total	SM 4500-P-B,E
Polychlorinated Biphenyls (Oil)	EPA 600/4-81-045
Polychlorinated Biphenyls (Water)	EPA 608
Potassium	EPA 200.7
Selenium	EPA 200.7
Selenium	EPA 200.8
Selenium	EPA 200.9
Silver	EPA 200.7
Sodium	EPA 200.7
Specific Conductivity	SM 2510-B
Strontium	EPA 200.7
Sulfate	EPA 300.0
SVOC-Acid Extractables	EPA 625
SVOC-Base/Neutral Extractables	EPA 625
Thallium	EPA 200.7
Thallium	EPA 200.8
Thallium	EPA 200.9
Titanium	EPA 200.7
Total Dissolved Solids	SM 2540-C
Total Organic Carbon	SM 5310-B
Toxaphene	EPA 608
Vanadium	EPA 200.7
Vanadium	EPA 200.8
Volatile Aromatics	EPA 602
Volatile Aromatics	EPA 624
Volatile Halocarbons	EPA 624
Zinc	EPA 200.7
Zinc	EPA 200.8

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532

Telephone (508) 759-4441
FAX (508) 759-4475
www.groundwateranalytical.com

December 5, 2008

Mr. David Bennett
Bennett Environmental Associates, Inc.
P.O. Box 1743
Brewster, MA 02631

LABORATORY REPORT

Project: **St. Christopher's**
Lab ID: **122083**
Received: **11-24-08**

Dear Dave:

Enclosed are the analytical results for the above referenced project. The project was processed for Rush 24 Hour turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC or NVLAP standards, except as may be specifically noted, or described in the project narrative. The analytical results relate only to the samples received. This report may only be used or reproduced in its entirety.

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

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Eric H. Jensen
Operations Manager

EHJ/elm
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project:	**St. Christopher's**	Delivery:	**GWA Courier**	Temperature:	**2.8ºC**
Client:	**Bennett Environmental Associates, Inc.**	Airbill:	**n/a**	Chain of Custody:	**Present**
Lab ID:	**122083**	Lab Receipt:	**11-24-08**	Custody Seal(s):	**n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
122083-1	MW-3		Aqueous	11/24/08 14:00	EPA 200.7 Pb Dissolved				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1136799	250 mL Plastic	Proline	BX31857	HNO3	R-5613C	10-28-08	n/a		

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	**MW-3**	Matrix:	**Aqueous**
Project:	**St. Christopher's**	Container:	**250 mL Plastic**
Client:	**Bennett Environmental Associates, Inc.**	Preservation:	**HNO3 / Cool**
Laboratory ID:	**122083-1**	Preserved:	**12-04-08 17:52**
Sampled:	**11-24-08 14:00**	Filtered:	**12-04-08 17:52**
Received:	**11-24-08 17:35**		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 200.7[1]	MN-2081-W	EPA 200.7	12-05-08 11:30	50 mL	ICP-1 PE 3000	MFP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-92-1	Lead, Dissolved	BRL		mg/L	0.005	1	12-05-08 13:56	EPA 200.7[1]

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**St. Christopher's**	Lab ID:	**122083**
Client:	**Bennett Environmental Associates, Inc.**	Received:	**11-24-08 17:35**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1 . Sample 121881-03 'MW-3' was reassigned laboratory number 122083-01 and was analyzed for Dissolved Lead on a Rush turnaround time, with a due date of 12-05-08, per David Bennett, 12-04-08.

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1 . Sample 122083-01 for Dissolved Metals analysis was not received filtered. The sample was filtered and preserved with HNO3 by the laboratory prior to analysis.

GROUNDWATER ANALYTICAL

228 Main Street, P.O. Box 1200
Buzzards Bay, MA 02532
Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

Project Name: St. Christopher's	Firm: Bennett Env. Assoc. (BEA)
Project Number: BEA08 10059	Address: Box 1743
Sampler Name: BC	City / State / Zip: Brewster 02631
Project Manager: DCB/BC	Telephone: 508 896 1706

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- ☐ STANDARD (10 Business Days)
- ☑ PRIORITY (5 Business Days)
- ☐ RUSH (RAN-________) (Rush requires Rush Authorization Number)
- ☑ Please Email to: DBennett@ - -
- ☐ Please FAX to:

BILLING

- ☑ Purchase Order No.: 10059
- ☐ Third Party Billing:
- ☐ GWA Quote:

ANALYSIS REQUEST

Volatiles | Semivolatiles | Pest/Herb/PCBs (Extractable, Vol) | Metals | Petroleum Hydrocarbons (Ext. TPH, Vol TPH) | Haz. Waste | General Chemistry | Other

Handwritten entries: 8270 PAH+ Acid-Low Level; SE, AS, CD, CR, CU, Pb, HG, Ni, ZN, AG, FE; TRI, Hex CR, Cyanide (CN), TSS, Hex Chrom NM

Date	Time	Sample Identification	Matrix	Type	Number	Ice	Filtered
11/24/8	1410	MW-3	Groundwater	Grab	1	X	No
"	"	"	Groundwater	Grab	2	X	No
"	"	"	Groundwater	Grab	1	X	No
"	"	"	Groundwater	Grab	3	X	No
"	"	"	Groundwater	Grab	3	X	No
"	"	"	Groundwater	Grab	2	X	No
"	"	"	Groundwater	Grab	2	X	No
"	"	"	Groundwater	Grab	1	X	No
"	"	"	Groundwater	Grab	1	X	No

LABORATORY NUMBER (Lab Use Only)

REMARKS / SPECIAL INSTRUCTIONS

MA DEP MCP Data Enhancement Affirmation

- ☑ YES ☐ NO MCP Data Certification required.
- ☐ YES ☐ NO MCP Drinking Water Sample included. (Require collection of contingent duplicate sample. Trip blanks are also required, if VOA sample collected).

Signature: [signature]

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
☐ CT	☐ MCP GW-1/S-1	☐ PWS Form
☐ ME	☐ MCP GW-2/S-2	☐ MWRA
☐ MA	☐ NY STARS	☐ ____
☐ NH	☐ Drinking Water	
☐ NY	☐ Wastewater	
☐ RI	☐ Waste Disposal	
☐ VT	☐ Dredge Material	
☐ ___	☑ BEP - NPDES	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required
- ☐ Sample Duplicate
- ☐ Matrix Spike
- ☐ Matrix Spike Duplicate

Selection of QC Sample
- ☐ Please use sample:

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by	Date	Time	Received by	
Sampler: [signature] 11/24 to BEA Fridge	11/24/08	1615	[signature]	Receipt Temperature: ☐ Ice ☐ Refrigerated 2-6°C Recommended 2.8
[signature]	11/24/08	1736	[signature]	Container Count: 16
			Received by Laboratory:	Shipping/Airbill Number:

Method of Shipment: ☐ GWA Courier ☐ Express Mail ☐ Federal Express ☑ UPS ☐ Hand ☐ ____

Custody Seal Number:

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **Metals**
Matrix: **Aqueous**
Units: **mg/L**

Analysis Method	QC Batch ID	Prep Method	Prepared	Instrument ID	Analyst
EPA 200.7	MN-2081-WL	EPA 200.7	50 mL	ICP-1 PE 3000	MFP

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits	Analyzed	Method
7439-92-1	Lead	5.0	4.8	**96** %	85-115 %	12-05-08 13:44	EPA 200.7

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **Metals**
Matrix: **Aqueous**

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 200.7	MN-2081-WB	EPA 200.7	12-05-08 11:30	50 mL	ICP-1 PE 3000	MFP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-92-1	Lead	BRL		mg/L	0.005	1	12-05-08 13:40	EPA 200.7

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states.
Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT

Department of Health Services, PH-0586 — Potable Water, Wastewater, Solid Waste and Soil
http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/Out State.pdf

MASSACHUSETTS

Department of Environmental Protection, M-MA-103 — Potable Water and Non-Potable Water
http://public.dep.state.ma.us/labcert/labcert.aspx

Department of Labor,
Division of Occupational Safety, AA000195 — Asbestos Analytical Services, Class A
http://www.mass.gov/dos/forms/la-rpt list aa.pdf

NEW HAMPSHIRE

Department of Environmental Services, 202708 — Potable Water, Non-Potable Water, Solid and Chemical Materials
http://www4.egov.nh.gov/DES/NHELAP

NEW YORK

Department of Health, 11754 — Potable Water, Non-Potable Water, Solid and Hazardous Waste
http://www.wadsworth.org/labcert/elap/comm.html

NIST NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP)

NVLAP Lab Code 200751-1 — Bulk Asbestos Fiber Analysis (PLM)
http://ts.nist.gov/Standards/scopes/plmtm.htm

RHODE ISLAND

Department of Health,
Division of Laboratories, LAO00054 — Potable and Non-Potable Water Microbiology, Organic and Inorganic Chemistry
http://www.health.ri.gov/labs/outofstatelabs.pdf

U.S. DEPARTMENT OF AGRICULTURE

USDA, Soil Permit, S-53921 — Foreign soil import permit

VERMONT

Department of Health, VT-87643 — Potable Water
http://healthvermont.gov/enviro/ph_lab/water_test.aspx#cert

GROUNDWATER ANALYTICAL

Certifications and Approvals

MASSACHUSETTS **Department of Environmental Protection, M-MA-103**

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Potable Water (Drinking Water)

Analyte	Method
1,2-Dibromo-3-Chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1
Alkalinity, Total	SM 2320-B
Antimony	EPA 200.8
Antimony	EPA 200.9
Arsenic	EPA 200.8
Arsenic	EPA 200.9
Barium	EPA 200.7
Barium	EPA 200.8
Beryllium	EPA 200.7
Beryllium	EPA 200.8
Cadmium	EPA 200.7
Cadmium	EPA 200.8
Calcium	EPA 200.7
Chlorine, Residual Free	SM 4500-CL-G
Chromium	EPA 200.7
Copper	EPA 200.7
Copper	EPA 200.8
Cyanide, Total	Lachat 10-204-00-1-A
E. Coli (Treatment and Distribution)	EC-MUG SM 9221-F
E. Coli (Treatment and Distribution)	Enz. Sub. SM 9223
E. Coli (Treatment and Distribution)	NA-MUG SM 9222-G
Fecal Coliform (Source Water)	MF SM 9222-D
Fluoride	EPA 300.0
Fluoride	SM 4500-F-C
Heterotrophic Plate Count	SM 9215-B
Lead	EPA 200.8
Lead	EPA 200.9
Mercury	EPA 245.1
Nickel	EPA 200.7
Nickel	EPA 200.8
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Nitrite-N	EPA 300.0
Nitrite-N	Lachat 10-107-04-1-C
pH	SM 4500-H-B
Selenium	EPA 200.8
Selenium	EPA 200.9
Silver	EPA 200.7
Silver	EPA 200.8
Sodium	EPA 200.7
Sulfate	EPA 300.0
Thallium	EPA 200.8
Thallium	EPA 200.9
Total Coliform (Treatment and Distribution)	Enz. Sub. SM 9223
Total Coliform (Treatment and Distribution)	MF SM 9222-B
Total Dissolved Solids	SM 2540-C
Trihalomethanes	EPA 524.2
Turbidity	SM 2130-B
Volatile Organic Compounds	EPA 524.2

Non-Potable Water (Wastewater)

Analyte	Method
Aldrin	EPA 608
Alkalinity, Total	Lachat 10-303-31-1-A
Alpha-BHC	EPA 608
Aluminum	EPA 200.7
Aluminum	EPA 200.8

Non-Potable Water (Wastewater)

Analyte	Method
Ammonia-N	Lachat 10-107-06-1-B
Antimony	EPA 200.7
Antimony	EPA 200.8
Antimony	EPA 200.9
Arsenic	EPA 200.7
Arsenic	EPA 200.8
Arsenic	EPA 200.9
Beryllium	EPA 200.7
Beryllium	EPA 200.8
Beta-BHC	EPA 608
Biochemical Oxygen Demand	SM 5210-B
Cadmium	EPA 200.7
Cadmium	EPA 200.8
Calcium	EPA 200.7
Chemical Oxygen Demand	SM 5220-D
Chlordane	EPA 608
Chloride	EPA 300.0
Chlorine, Total Residual	SM 4500-CL-G
Chromium	EPA 200.7
Chromium	EPA 200.8
Cobalt	EPA 200.7
Cobalt	EPA 200.8
Copper	EPA 200.7
Copper	EPA 200.8
Copper	EPA 200.9
Cyanide, Total	Lachat 10-204-00-1-A
DDD	EPA 608
DDE	EPA 608
DDT	EPA 608
Delta-BHC	EPA 608
Dieldrin	EPA 608
Endosulfan I	EPA 608
Endosulfan II	EPA 608
Endosulfan Sulfate	EPA 608
Endrin	EPA 608
Endrin Aldehyde	EPA 608
Fluoride	EPA 300.0
Gamma-BHC	EPA 608
Hardness (CaCO3), Total	EPA 200.7
Hardness (CaCO3), Total	SM 2340-B
Heptachlor	EPA 608
Heptachlor Epoxide	EPA 608
Iron	EPA 200.7
Kjeldahl-N	Lachat 10-107-06-02-D
Lead	EPA 200.7
Lead	EPA 200.9
Magnesium	EPA 200.7
Manganese	EPA 200.7
Manganese	EPA 200.8
Mercury	EPA 245.1
Molybdenum	EPA 200.7
Molybdenum	EPA 200.8
Nickel	EPA 200.7
Nickel	EPA 200.8
Nickel	EPA 200.9
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Non-Filterable Residue	SM 2540-D
Oil and Grease	EPA 1664

GROUNDWATER ANALYTICAL

Certifications and Approvals

MASSACHUSETTS **Department of Environmental Protection, M-MA-103**

Groundwater Analytical maintains MassDEP environmental laboratory certification for only the methods and analytes listed below. Analyses for certified analytes are conducted in accordance with MassDEP certification standards, except as may be specifically noted in the project narrative.

Non-Potable Water (Wastewater)

Analyte	Method
Orthophosphate	Lachat 10-115-01-1-A
pH	SM 4500-H-B
Phenolics, Total	EPA 420.4
Phenolics, Total	Lachat 10-210-00-1-B
Phosphorus, Total	Lachat 10-115-01-1-C
Phosphorus, Total	SM 4500-P-B,E
Polychlorinated Biphenyls (Oil)	EPA 600/4-81-045
Polychlorinated Biphenyls (Water)	EPA 608
Potassium	EPA 200.7
Selenium	EPA 200.7
Selenium	EPA 200.8
Selenium	EPA 200.9
Silver	EPA 200.7
Sodium	EPA 200.7
Specific Conductivity	SM 2510-B
Strontium	EPA 200.7
Sulfate	EPA 300.0
SVOC-Acid Extractables	EPA 625
SVOC-Base/Neutral Extractables	EPA 625
Thallium	EPA 200.7
Thallium	EPA 200.8
Thallium	EPA 200.9
Titanium	EPA 200.7
Total Dissolved Solids	SM 2540-C
Total Organic Carbon	SM 5310-B
Toxaphene	EPA 608
Vanadium	EPA 200.7
Vanadium	EPA 200.8
Volatile Aromatics	EPA 602
Volatile Aromatics	EPA 624
Volatile Halocarbons	EPA 624
Zinc	EPA 200.7
Zinc	EPA 200.8