TRANSMITTAL

Environmental Compliance Services, Inc.

DOCUMENT NO. MAG910113 DC

To: US Environmental Protection Agency
RGP-NOC Processing
Municipal Assistance Unit (CMU)
1 Congress Street, Suite 1100
Boston, MA 02114-2023

From: Tom Keefe
Date 10/11/05
Subject: Remediation General Permit
152 Grove Street, Waltham MA

Phone: 617 918 1565 **Project:** Standard Thomson **Project #:** 05-201876.00

We are sending you:

☒ Enclosed ☐ Under Separate Cover ☐ Data Sheets ☐ Prints ☐ Boring Logs

☐ Sketches ☐ Lab Reports ☐ Reports ☐ Via Mail ☒ Via UPS

☒ The following items:

COPIES	PREPARED BY	DESCRIPTION
1	ECS	Notice of Intent for Remediation General Permit

TRANSMITTED AS CHECKED BELOW:

☐ As Requested ☒ For your Use ☐ FYI ☒ For Review and Comment ☐ Other

Dear Sir or Madam

Attached is a Notice of Intent for discharge under EPA's Remediation Discharge Permit Program. If you have any questions, please contact me at 617 699-2365

Tom Keefe

Senior Project Manager

OCT 11 2005

Copies to: **John M, Bradley – Waltham DPW Director**
Stan Orszulak – Standard Thomson Corporation
Steve Pfister – Tomkins Industries
Kevin Sheehan - ECS

OCT 11 2005 DC MAG910015

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

Approve NOI DC 10/14/05

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

a) Name of **facility/site**: Standard Thomson		**Facility/site** address:		
Location of **facility/site**: longitude: 71 13' 00" latitude: 42 22' 19"	Facility SIC code(s): 3714	Street: 152 Grove Street		
b) Name of **facility/site owner:** Standard Thomson		Town: Waltham		
Email address of owner: sorszula@stdthom.com		State: MA	Zip: 02453	County: Middlesex
Telephone no.of facility/site **owner**: (781) 392-3533				
Fax no. of facility/site **owner**: (781) 894-2235		**Owner** is (check one): 1. Federal____ 2. State/Tribal_____ 3. Private_✔___ 4. other, if so, describe:		
Address of **owner** (if different from site):				
Street: Same				
Town:	State:	Zip:	County:	
c) Legal name of **operator**: Environmental Compliance Services, Inc	**Operator** telephone no: (781) 246-8897			
	Operator fax no.: (781) 246-8950	**Operator** email: tkeefe@ecsconsult.com		
Operator contact name and title: Tom Keefe, Senior Project Manager				

Address of **operator** (if different from owner):	Street: 607 North Avenue, Suite 11		
Town: Wakefield	State: MA	Zip: 01880	County: Middlesex

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 3-2143 2. permit or license # assigned: RTN 3-2143 3. state agency contact information: name, location, and telephone number: Mass Dept. of Environmental Protection, One Winter St Boston 617 654 6500	f) Is the site/facility covered by any other EPA permit, including: 1. multi-sector storm water general permit? Y_✔_ N___, if Y, number: MAR05C150 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:

Discharge will consist of groundwater generated during dewatering for PCB excavation project being conducted jointly under the Massachusetts Contingency Plan and Toxic Substance Control Act.

b) Provide the following information about each discharge:	1) Number of discharge points: 1	2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft^3/s)? Max. flow 0.16 Average flow 0.06 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. 25 gallons per minute (0.06 cfs) is the average flow anticipated for dewatering purposes.

3) Latitude and longitude of each discharge within 100 feet: pt.1:long.71 13' 04" lat.42 22' 02"; 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 10/26/05 end 11/23/05	
d) Please attach a line drawing or flow schematic showing water flow through the facility including: See Figure 2 Attached 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		✔								
2. Total Residual Chlorine	✔									
3. Total Petroleum Hydrocarbons		✔	1	grab	8100	0.2 mg/	2000	1.8	2,000	0.6
4. Cyanide	✔									
5. Benzene	✔		1	grab	8260	10 ug/l				
6. Toluene	✔		1	grab	8260	10 ug/l				
7. Ethylbenzene	✔		1	grab	8260	10 ug/l				
8. (m,p,o) Xylenes	✔		1	grab	8260	10/ug/l				
9. Total BTEX[4]	✔		1	grab	8260	40ug/l				

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

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
10. Ethylene Dibromide (1,2- Dibromo-methane)	✔		1	grab	8260	10 ug/l				
11. Methyl-tert-Butyl Ether (MtBE)	✔		1	grab	8260	10ug/l				
12. tert-Butyl Alcohol (TBA)	✔		1	grab	8260	10ug/l				
13. tert-Amyl Methyl Ether (TAME)	✔		1	grab	8260	10ug/l				
14. Naphthalene		✔	1	grab	8260	10ug/l	12	0.011	12	0.004
15. Carbon Tetra-chloride	✔		1	grab	8260	10ug/l				
16. 1,4 Dichlorobenzene	✔		1	grab	8260	10ug/l				
17. 1,2 Dichlorobenzene	✔		1	grab	8260	10ug/l				
18. 1,3 Dichlorobenzene	✔		1	grab	8260	10ug/l				
19. 1,1 Dichloroethane	✔		1	grab	8260	10ug/l				
20. 1,2 Dichloroethane	✔		1	grab	8260	10ug/l				
21. 1,1 Dichloroethylene		✔	1	grab	8260	10ug/l				
22. cis-1,2 Dichloro-ethylene		✔	1	grab	8260	10ug/l	1700	1.531	1,700	0.51
23. Dichloromethane (Methylene Chloride)	✔		1	grab	8260	100ug/l				
24. Tetrachloroethylene		✔	1	grab	8260	10ug/l				

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily Value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
25. 1,1,1 Trichloroethane	✔		1	grab	8260	10ug/l				
26. 1,1,2 Trichloroethane	✔		1	grab	8260	10ug/l				
27. Trichloroethylene		✔	1	grab	8260	10ug/l	217	0.195	217	0.217
28. Vinyl Chloride		✔	1	grab	8260	10ug/l	28	0.025	28	0.008
29. Acetone	✔		1	grab	8260	10ug/l				
30. 1,4 Dioxane	✔		1	grab	8260	200ug/l				
31. Total Phenols	✔		1	grab	8270	6 ug/l				
32. Pentachlorophenol	✔		1	grab	8270	24 ug/l				
33. Total Phthalates [5] (Phthalate esthers)		✔	1	grab	8270	6 ug/l	28	0.025	28	0.008
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	✔		1	grab	8270	6 ug/l				
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	✔		1	grab	8270	6 ug/l				
a. Benzo(a) Anthracene	✔		1	grab	8270	6 ug/l				
b. Benzo(a) Pyrene	✔		1	grab	8270	6 ug/l				
c. Benzo(b)Fluoranthene	✔		1	grab	8270	6 ug/l				
d. Benzo(k) Fluoranthene	✔		1	grab	8270	6 ug/l				
e. Chrysene	✔		1	grab	8270	6 ug/l				

[5] The sum of individual phthalate compounds.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
f. Dibenzo(a,h) anthracene	✔		1	grab	8270	6 ug/l				
g. Indeno(1,2,3-cd) Pyrene	✔		1	grab	8270	6 ug/l				
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		✔	1	grab	8270	6 ug/l	12	0.011	12	0.004
h. Acenaphthene	✔		1	grab	8270	6 ug/l				
i. Acenaphthylene	✔		1	grab	8270	6 ug/l				
j. Anthracene	✔		1	grab	8270	6 ug/l				
k. Benzo(ghi) Perylene	✔		1	grab	8270	6 ug/l				
l. Fluoranthene	✔		1	grab	8270	6 ug/l				
m. Fluorene	✔		1	grab	8270	6 ug/l				
n. Naphthalene-		✔	1	grab	8270	6 ug/l	12	0.001	12	0.004
o. Phenanthrene	✔		1	grab	8270	6 ug/l				
p. Pyrene	✔		1	grab	8270	6 ug/l				
37. Total Polychlorinated Biphenyls (PCBs)		✔	1	grab	8082	0.24 ug	10	0.009	10	0.003
38. Antimony	✔									
39. Arsenic	✔		1	grab	6010B	.0040ug				
40. Cadmium	✔		1	grab	6010B	.0012ug				
41. Chromium III	✔		1	grab	6010B	.0025ug				
42. Chromium VI	✔		1	grab	6010B	.0025ug				

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
43. Copper	✔									
44. Lead	✔		1	grab	6010B					
45. Mercury	✔		1	grab	7470A					
46. Nickel	✔									
47. Selenium	✔		1	grab	6010B					
48. Silver	✔		1	grab	6010B					
49. Zinc	✔									
50. Iron		✔	1	grab	6010B		500	0.450	500	0.150
Other (describe):										

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

Step 1: Do any of the metals in the influent have a **reasonable potential** to exceed the effluent limits in Appendix III (i.e., the limits set at zero to five dilutions)? Y____ N✔	If yes, which metals?
Step 2: For any metals which have **reasonable potential** to exceed the **Appendix III** limits, calculate the **dilution factor (DF)** using the formula in Part I.A.3.c) (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metals:_____ DF: _____	Look up the limit calculated at the corresponding dilution factor in **Appendix IV.** Do any of the metals in the **influent** have the potential to exceed the corresponding **effluent** limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y____ N____ If "Yes," list which metals:

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

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

Treatment will initially consist of settlement of solids utilizing a fractionation tank. Following settlement, water will be pumped from the frac tank utilizing a 75 gpm centrifugal pump through two 5-micron bag filter units to remove solids. Following filtration, the discharge will be treated via two 1000 pound liquid phase granular activated carbon treatment units (in series) and discharged to the on-site stormwater drainage system. See Figure 3 for Schematic diagram.

b) Identify each applicable treatment unit (check all that apply):	Frac. tank ✔	Air stripper	Oil/water separator	Equalization tanks	Bag filter ✔	GAC filter ✔
	Chlorination	Dechlorination	Other (please describe):			

c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate**(s) (gallons per minute) of the treatment system:
Average flow rate of discharge 25 Maximum flow rate of treatment system 75 Design flow rate of treatment system 75

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:

Discharge will be directed to an on-site storwater catch basin and be conveyed via underground piping to the Municipal storm water drainage system on Grove Street. From Grove Street, the discharge will be conveyed approximately 2000 feet to an outfall at the Charles River located at the Farwell Street Bridge.

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. See Figure 1 Attached
2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water
The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.

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

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 17.7 cfs
Please attach any calculation sheets used to support stream flow and dilution calculations. See attached Graphs

f) Is the receiving water a listed 303(d) water quality impaired or limited water? Yes ✔ No____ If yes, for which pollutant(s)?
Priority organics, nutrients, organic enrichment/low DO, pathogens, noxious aquatic plants, turbidity and exotic species

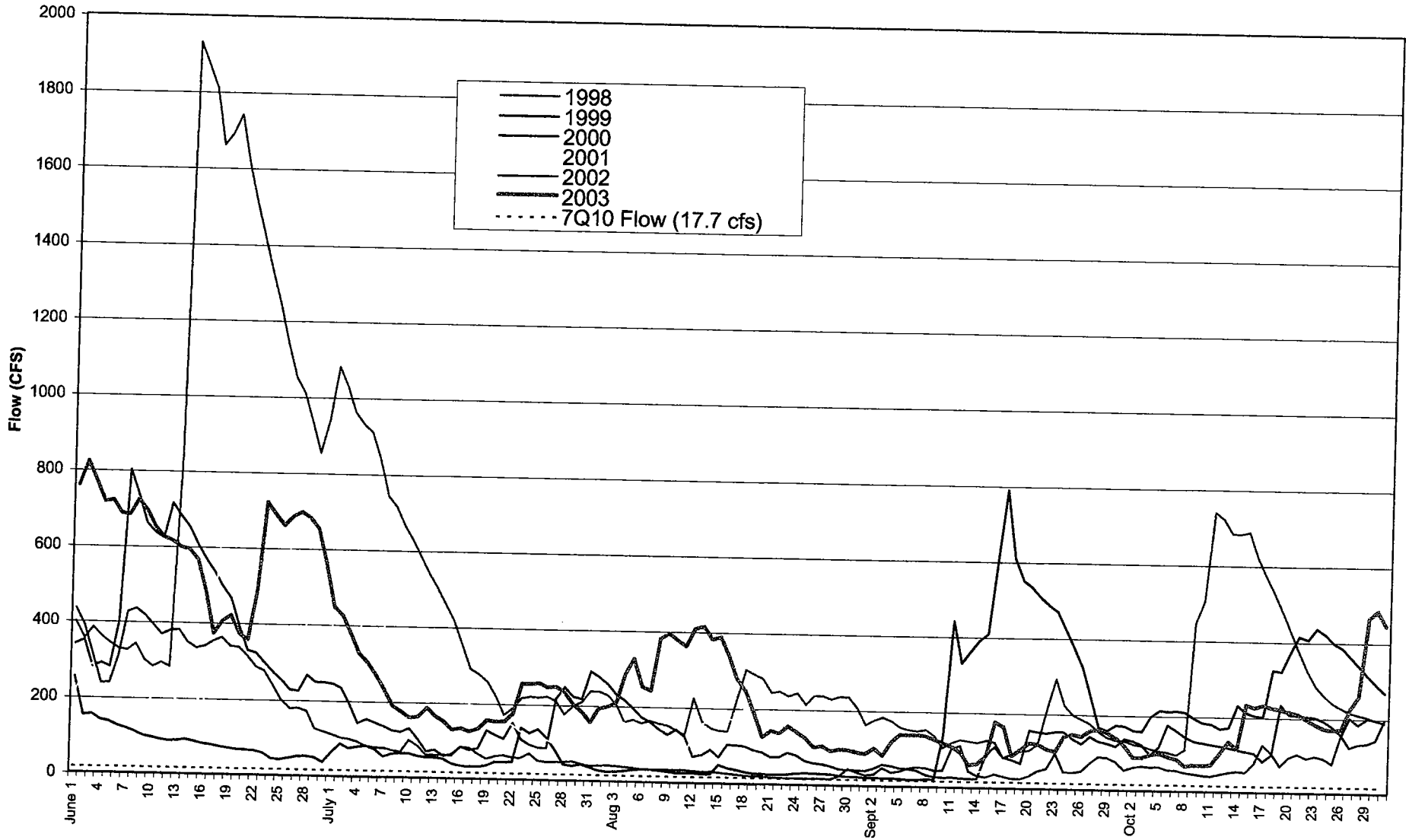
Is there a TMDL? Yes____ No ✔ If yes, for which pollutant(s)?
Currently there is a draft TMDL document for pathogens.

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

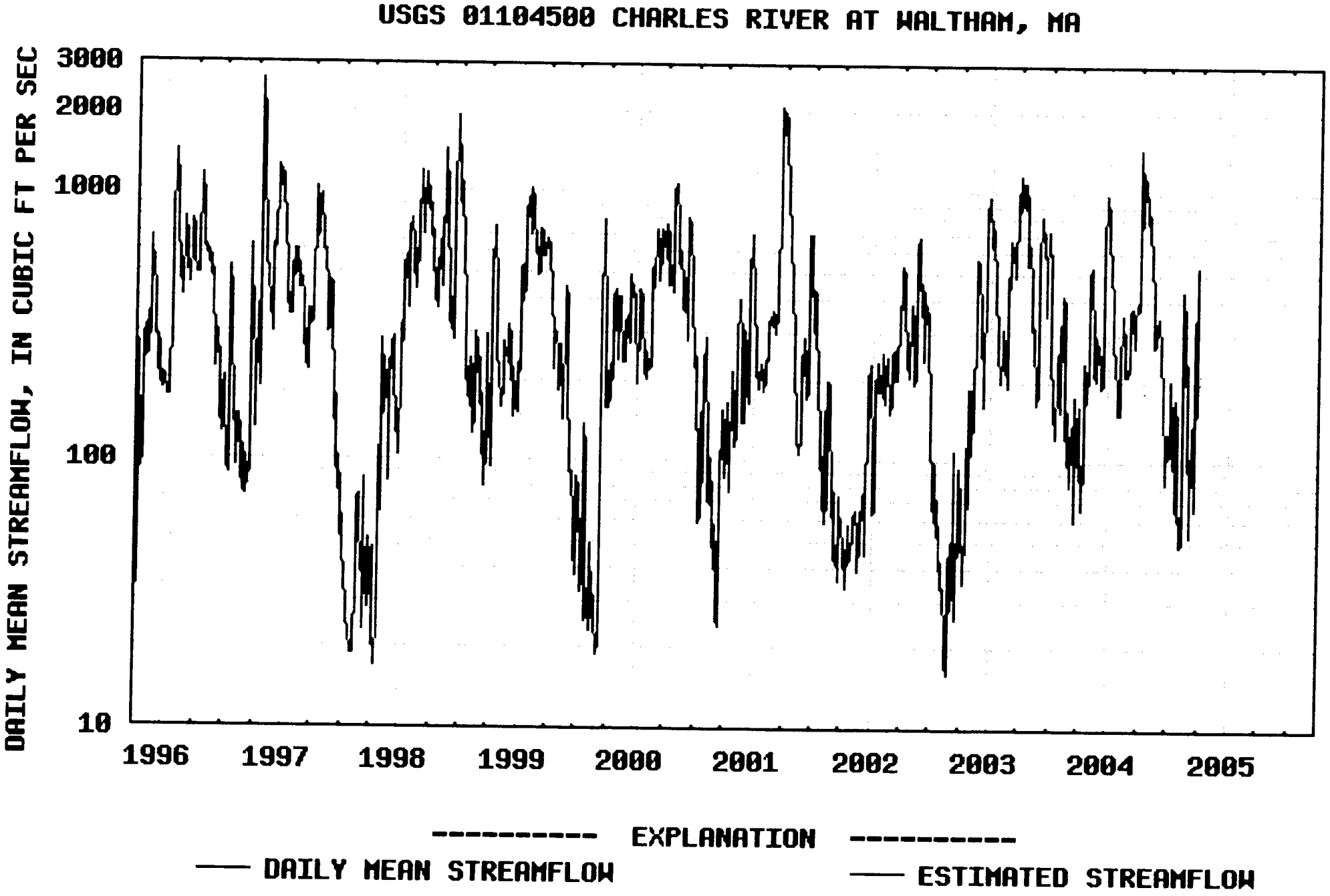
a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes____ No ✔
Has any consultation with the federal services been completed ? No ✔ or is consultation underway? Yes____ No____
What were the results of the consultation with the U.S. Fish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

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

Figure A-1: Mean Daily Stream Flow Data at USGS Waltham Gaging Station from 1998 to 2003



Note: Flow data was collected by USGS.
Data from 9/30/02 to 10/31/03 are provisional


USGS 01104500 CHARLES RIVER AT WALTHAM, MA
DAILY MEAN STREAMFLOW, IN CUBIC FT PER SEC
3000
2000
1000
100
10
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
EXPLANATION
DAILY MEAN STREAMFLOW
ESTIMATED STREAMFLOW

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.

1) Anaytical Data

The detection limits for VOCs and SVOCs were elevated in the frac tank sample due to dilutions requried for analysis or the analytical methodology utilized. Detection limits of the treated effluent are anticipated to achieve Permit Requirements. Certain parameters were were identified as believed present even though they were not detected based on historical analyses of groundwater samples which detected these analytes. Results for a small number of analytes are pending, these are marked as believed present/absent on the basis of historical analyses. Analytical reports are attached.

2) Fish and Wildlife Consultation

Based on maps provided by The Natural Heritage and Endangered Species Program (NHESP) in Massachusetts, there are no endangered species or designated critical habitat in proximity to the discharge. Discussion with the Fish & Wildlife Service field office in Concord, NH confirmed that the NHESP maps are appropriate for evaluating endangered species and designated critical habitat, and that the Charles River has no designated endangered species or critical habitat.

3) 7Q10 Flow

The 7Q10 flow was obtained from EPA Clean Charles Core Monitoring Program for 1998 to 2003 (see attached graph). These data were compared with USGS streamflow data for 1995 through 2005 and were consistent (see attached graph).

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: Standard Thomson

Operator signature:

Title: Senior Project Manager

Date: October 11, 2005

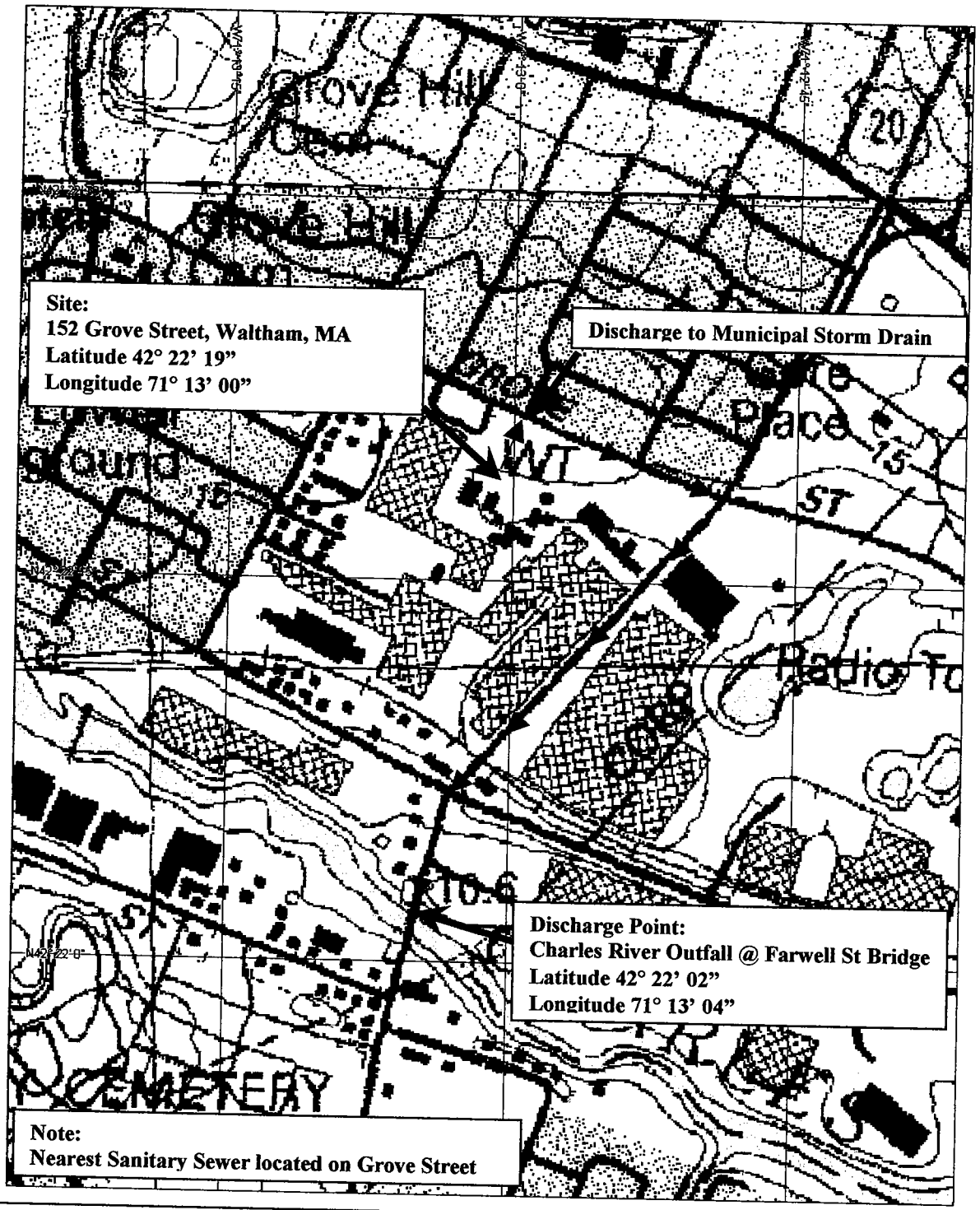


Figure 1: Site & Discharge Location Map
152 Grove Street
Waltham, Massachusetts

Project: 05-201876.00

USGS Boston South Quadrangle

N

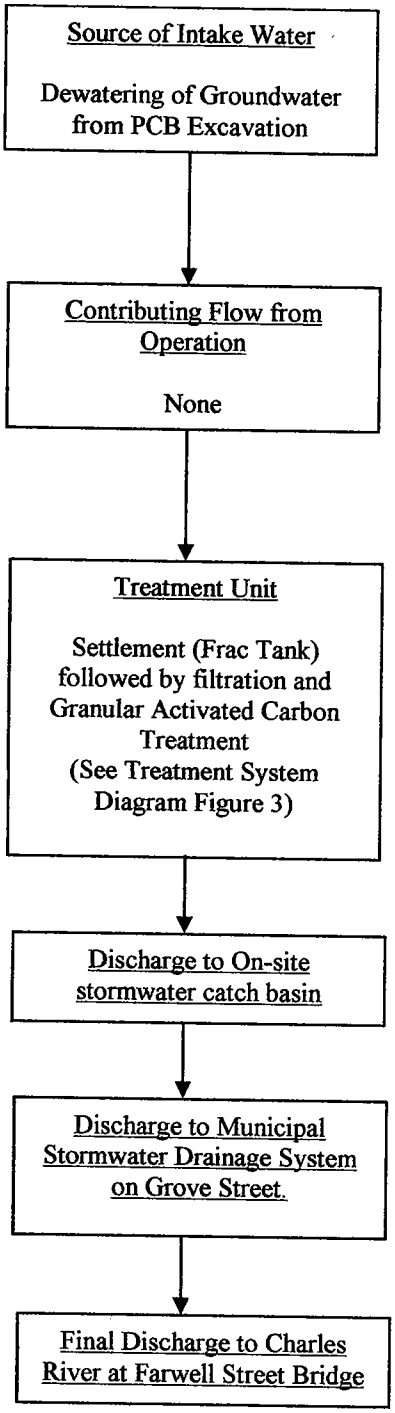
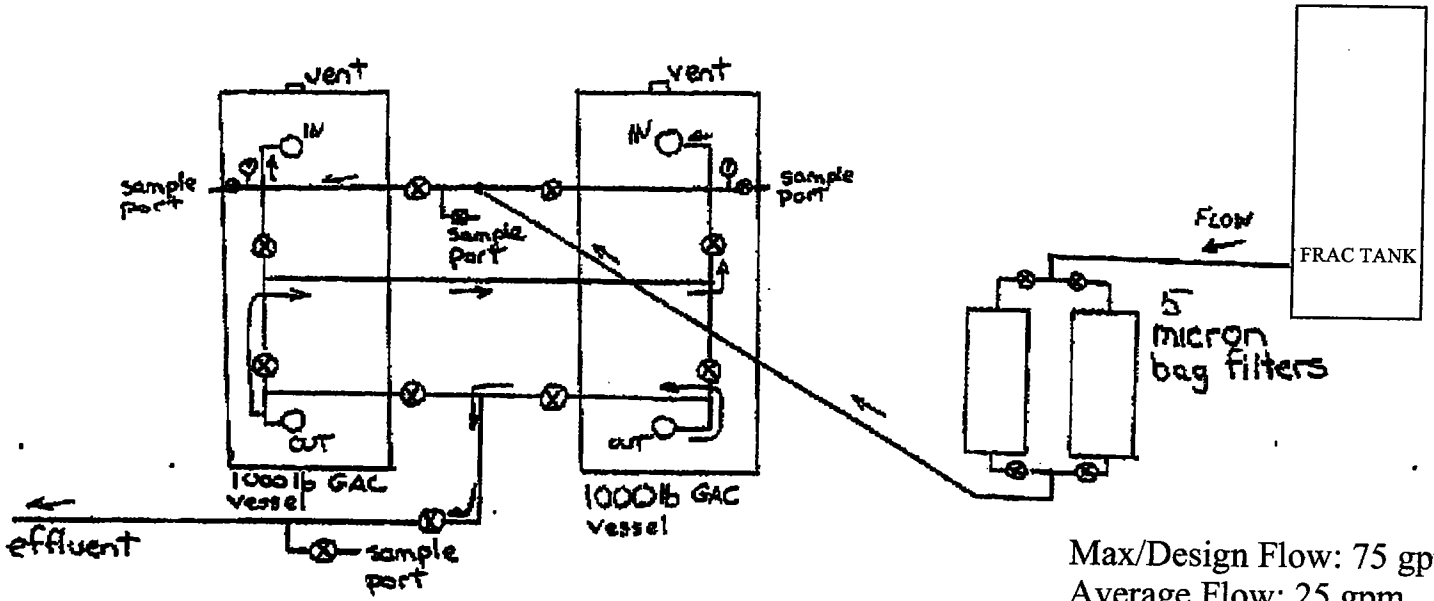


Figure 2: Flow Schematic
152 Grove Street
Waltham, Massachusetts

Project: 05-201876.00

FIGURE 3 - Groundwater Treatment System Schematic Diagram



GROUNDWATER TREATMENT UNIT

* As shown with manifold type piping system

Max/Design Flow: 75 gpm
Average Flow: 25 gpm
System Components:
1-21,000 gal Frac Tank
1- 75gpm Centrifugal Pump
2-5 Micron Bag Filters
2-1,000 lb Liquid Phase Granular Activated Carbon (in series)

Report Date:
11-Oct-05 11:07

☑ Final Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
607 North Avenue; Suite 11
Wakefield, MA 01880
Attn: Thomas Keefe

Project: Standard Thompson - Grove St Waltham, MA
Project #: 05-2018 /6.00

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SA35036-01	C17/2'-4'/W	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-02	C18/2'-4'/W	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-03	C18/2'-4'/S	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-04	C18/2'-4'	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-05	DUP#1	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-06	D19/4'	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-07	D18/4'	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-08	C17/2'-4'	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-09	C18	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-10	D19/2'-4'/E	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-11	D18/2'-4'/E	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-12	D18	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-13	M10	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-14	M10/2'-4'/C	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-15	L9/2'-4'/C	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-16	L9/0'-4'/E	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-17	N8/0'4'/E	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-18	M8/0'-4'/E	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-19	M9/0'-2'/S	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-20	M8/N8/1'-4'/C	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-21	M9:N9/4'	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-22	L9/4'	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-23	L9/0'-4'/SW	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-24	M8:N8/4'	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-25	M9/0'-4'/E	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-26	M9/2'-4'/C	Soil	30-Sep-05 00:00	30-Sep-05 15:33
SA35036-27	FRAC TANK	Ground Water	30-Sep-05 00:00	30-Sep-05 15:33

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
FRAC TANK	05-201876.00	Ground Water	30-Sep-05 00:00	30-Sep-05
SA35036-27				

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
Volatile Organic Compounds			Prepared by method	SW846 5030 Water MS						
67-64-1	Acetone	BRL	100 µg/l	10	SW 846 8260B	03-Oct-05	04-Oct-05	5100071	KS	
107-13-1	Acrylonitrile	BRL	10.0 µg/l	10	"	"	"	"	"	
71-43-2	Benzene	BRL	10.0 µg/l	10	"	"	"	"	"	
108-86-1	Bromobenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
74-97-5	Bromochloromethane	BRL	10.0 µg/l	10	"	"	"	"	"	
75-27-4	Bromodichloromethane	BRL	10.0 µg/l	10	"	"	"	"	"	
75-25-2	Bromoform	BRL	10.0 µg/l	10	"	"	"	"	"	
74-83-9	Bromomethane	BRL	20.0 µg/l	10	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	BRL	100 µg/l	10	"	"	"	"	"	
104-51-8	n-Butylbenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
135-98-8	sec-Butylbenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
98-06-6	tert-Butylbenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
75-15-0	Carbon disulfide	BRL	50.0 µg/l	10	"	"	"	"	"	
56-23-5	Carbon tetrachloride	BRL	10.0 µg/l	10	"	"	"	"	"	
108-90-7	Chlorobenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
75-00-3	Chloroethane	BRL	20.0 µg/l	10	"	"	"	"	"	
67-66-3	Chloroform	BRL	10.0 µg/l	10	"	"	"	"	"	
74-87-3	Chloromethane	BRL	20.0 µg/l	10	"	"	"	"	"	
95-49-8	2-Chlorotoluene	BRL	10.0 µg/l	10	"	"	"	"	"	
106-43-4	4-Chlorotoluene	BRL	10.0 µg/l	10	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	BRL	20.0 µg/l	10	"	"	"	"	"	
124-48-1	Dibromochloromethane	BRL	10.0 µg/l	10	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	BRL	10.0 µg/l	10	"	"	"	"	"	
74-95-3	Dibromomethane	BRL	10.0 µg/l	10	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	BRL	20.0 µg/l	10	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	BRL	10.0 µg/l	10	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	BRL	10.0 µg/l	10	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	BRL	10.0 µg/l	10	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	1,640	10.0 µg/l	10	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	19.0	10.0 µg/l	10	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	BRL	10.0 µg/l	10	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	BRL	10.0 µg/l	10	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	BRL	10.0 µg/l	10	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	BRL	10.0 µg/l	10	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	BRL	10.0 µg/l	10	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	BRL	10.0 µg/l	10	"	"	"	"	"	
100-41-4	Ethylbenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	BRL	10.0 µg/l	10	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	BRL	100 µg/l	10	"	"	"	"	"	
98-82-8	Isopropylbenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
99-87-6	4-Isopropyltoluene	BRL	10.0 µg/l	10	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL	10.0 µg/l	10	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
FRAC TANK SA35036-27	05-201876.00	Ground Water	30-Sep-05 00:00	30-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
Volatile Organic Compounds			Prepared by method	SW846 5030 Water MS						
108-10-1	4-Methyl-2-pentanone (MIBK)	BRL	100 µg/l	10	SW 846 8260B	03-Oct-05	04-Oct-05	5100071	KS	
75-09-2	Methylene chloride	BRL	100 µg/l	10	"	"	"	"	"	
91-20-3	Naphthalene	11.1	10.0 µg/l	10	"	"	"	"	"	
103-65-1	n-Propylbenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
100-42-5	Styrene	BRL	10.0 µg/l	10	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	BRL	10.0 µg/l	10	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	BRL	10.0 µg/l	10	"	"	"	"	"	
127-18-4	Tetrachloroethene	BRL	10.0 µg/l	10	"	"	"	"	"	
108-88-3	Toluene	BRL	10.0 µg/l	10	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	BRL	10.0 µg/l	10	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	BRL	10.0 µg/l	10	"	"	"	"	"	
79-01-6	Trichloroethene	217	10.0 µg/l	10	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	BRL	10.0 µg/l	10	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	BRL	10.0 µg/l	10	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	10.0 µg/l	10	"	"	"	"	"	
75-01-4	Vinyl chloride	27.6	10.0 µg/l	10	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	20.0 µg/l	10	"	"	"	"	"	
95-47-6	o-Xylene	BRL	10.0 µg/l	10	"	"	"	"	"	
109-99-9	Tetrahydrofuran	BRL	100 µg/l	10	"	"	"	"	"	
60-29-7	Ethyl ether	BRL	10.0 µg/l	10	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	BRL	10.0 µg/l	10	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	BRL	10.0 µg/l	10	"	"	"	"	"	
108-20-3	Di-isopropyl ether	BRL	10.0 µg/l	10	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	BRL	100 µg/l	10	"	"	"	"	"	
123-91-1	1,4-Dioxane	BRL	200 µg/l	10	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*101*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*95.8*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*88.0*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*92.2*	*70-130 %*		"	"	"	"	"	
Extractable Petroleum Hydrocarbons										
TPH 8100 by GC			Prepared by method	SW846 3535						
8006-61-9	Gasoline	BRL	0.2 mg/l	1	+SW846 8100Mod.	03-Oct-05	04-Oct-05	5100025	KG	
68476-30-2	Fuel Oil #2	BRL	0.2 mg/l	1	"	"	"	"	"	
68476-31-3	Fuel Oil #4	BRL	0.2 mg/l	1	"	"	"	"	"	
68553-00-4	Fuel Oil #6	BRL	0.2 mg/l	1	"	"	"	"	"	
M09800000	Motor Oil	BRL	0.2 mg/l	1	"	"	"	"	"	
8032-32-4	Ligroin	BRL	0.2 mg/l	1	"	"	"	"	"	
J00100000	Aviation Fuel	BRL	0.2 mg/l	1	"	"	"	"	"	
	Unidentified	1.9	0.2 mg/l	1	"	"	"	"	"	
	Other Oil	Calculated as	0.2 mg/l	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
FRAC TANK	05-201876.00	Ground Water	30-Sep-05 00:00	30-Sep-05
SA35036-27				

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Extractable Petroleum Hydrocarbons										
TPH 8100 by GC			Prepared by method	SW846 3535						
	Total Petroleum Hydrocarbons	1.9	0.2 mg/l	1	+SW846 8100Mod.	03-Oct-05	04-Oct-05	5100025	KG	
Surrogate recoveries:										
3386-33-2	1-Chlorooctadecane	106	40-140 %		"	"	"	"	"	
Semivolatile Organic Compounds by GC										
Polychlorinated Biphenyls by SW846 8082			Prepared by method	SW846 3535						
12674-11-2	PCB 1016	BRL	0.235 µg/l	1	SW846 8082	03-Oct-05	03-Oct-05	5100024	MP	
11104-28-2	PCB 1221	BRL	0.235 µg/l	1	"	"	"	"	"	
11141-16-5	PCB 1232	BRL	0.235 µg/l	1	"	"	"	"	"	
53469-21-9	PCB 1242	BRL	0.235 µg/l	1	"	"	"	"	"	
12672-29-6	PCB 1248	10.3	0.235 µg/l	1	"	"	"	"	"	
11097-69-1	PCB 1254	BRL	0.235 µg/l	1	"	"	"	"	"	
11096-82-5	PCB 1260	BRL	0.235 µg/l	1	"	"	"	"	"	
37324-23-5	PCB 1262	BRL	0.235 µg/l	1	"	"	"	"	"	
11100-14-4	PCB 1268	BRL	0.235 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*80.0*	*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*85.1*	*30-150 %*		"	"	"	"	"	
Semivolatile Organic Compounds by GCMS										
Semivolatile Organic Compounds by SW846 8270C			Prepared by method	SW846 3535						
83-32-9	Acenaphthene	BRL	5.88 µg/l	1	SW846 8270C	03-Oct-05	03-Oct-05	5100023	M.B	
208-96-8	Acenaphthylene	BRL	5.88 µg/l	1	"	"	"	"	"	
62-53-3	Aniline	BRL	5.88 µg/l	1	"	"	"	"	"	
120-12-7	Anthracene	BRL	5.88 µg/l	1	"	"	"	"	"	
1912-24-9	Atrazine	BRL	5.88 µg/l	1	"	"	"	"	"	
103-33-3	Azobenzene/Diphenyldiazine	BRL	5.88 µg/l	1						
92-87-5	Benzidine	BRL	5.88 µg/l	1	"	"	"	"	"	
56-55-3	Benzo (a) anthracene	BRL	5.88 µg/l	1	"	"	"	"	"	
50-32-8	Benzo (a) pyrene	BRL	5.88 µg/l	1	"	"	"	"	"	
205-99-2	Benzo (b) fluoranthene	BRL	5.88 µg/l	1	"	"	"	"	"	
191-24-2	Benzo (g,h,i) perylene	BRL	5.88 µg/l	1	"	"	"	"	"	
207-08-9	Benzo (k) fluoranthene	BRL	5.88 µg/l	1	"	"	"	"	"	
65-85-0	Benzoic acid	BRL	5.88 µg/l	1	"	"	"	"	"	
100-51-6	Benzyl alcohol	BRL	5.88 µg/l	1	"	"	"	"	"	
111-91-1	Bis(2-chloroethoxy)methane	BRL	5.88 µg/l	1	"	"	"	"	"	
111-44-4	Bis(2-chloroethyl)ether	BRL	5.88 µg/l	1	"	"	"	"	"	
39638-32-9	Bis(2-chloroisopropyl)ether	BRL	5.88 µg/l	1	"	"	"	"	"	
117-81-7	Bis(2-ethylhexyl)phthalate	BRL	5.88 µg/l	1	"	"	"	"	"	
101-55-3	4-Bromophenyl phenyl ether	BRL	5.88 µg/l	1	"	"	"	"	"	
85-68-7	Butyl benzyl phthalate	BRL	5.88 µg/l	1	"	"	"	"	"	
86-74-8	Carbazole	BRL	5.88 µg/l	1	"	"	"	"	"	
59-50-7	4-Chloro-3-methylphenol	BRL	5.88 µg/l	1	"	"	"	"	"	
106-47-8	4-Chloroaniline	BRL	5.88 µg/l	1	"	"	"	"	"	
91-58-7	2-Chloronaphthalene	BRL	5.88 µg/l	1	"	"	"	"	"	
95-57-8	2-Chlorophenol	BRL	5.88 µg/l	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
FRAC TANK SA35036-27	05-201876.00	Ground Water	30-Sep-05 00:00	30-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Semivolatile Organic Compounds by GCMS										
Semivolatile Organic Compounds by SW846 8270C			Prepared by method	SW846 3535						
7005-72-3	4-Chlorophenyl phenyl ether	BRL	5.88 µg/l	1	SW846 8270C	03-Oct-05	03-Oct-05	5100023	M.B	
218-01-9	Chrysene	BRL	5.88 µg/l	1	"	"	"	"	"	
53-70-3	Dibenzo (a,h) anthracene	BRL	5.88 µg/l	1	"	"	"	"	"	
132-64-9	Dibenzofuran	BRL	5.88 µg/l	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	BRL	5.88 µg/l	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	BRL	5.88 µg/l	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	BRL	5.88 µg/l	1	"	"	"	"	"	
91-94-1	3,3'-Dichlorobenzidine	BRL	5.88 µg/l	1	"	"	"	"	"	
120-83-2	2,4-Dichlorophenol	BRL	5.88 µg/l	1	"	"	"	"	"	
84-66-2	Diethyl phthalate	BRL	5.88 µg/l	1	"	"	"	"	"	
131-11-3	Dimethyl phthalate	BRL	5.88 µg/l	1	"	"	"	"	"	
105-67-9	2,4-Dimethylphenol	BRL	5.88 µg/l	1	"	"	"	"	"	
84-74-2	Di-n-butyl phthalate	27.7	5.88 µg/l	1	"	"	"	"	"	
534-52-1	4,6-Dinitro-2-methylphenol	BRL	5.88 µg/l	1	"	"	"	"	"	
51-28-5	2,4-Dinitrophenol	BRL	5.88 µg/l	1	"	"	"	"	"	
121-14-2	2,4-Dinitrotoluene	BRL	5.88 µg/l	1	"	"	"	"	"	
606-20-2	2,6-Dinitrotoluene	BRL	5.88 µg/l	1	"	"	"	"	"	
117-84-0	Di-n-octyl phthalate	BRL	5.88 µg/l	1	"	"	"	"	"	
206-44-0	Fluoranthene	BRL	5.88 µg/l	1	"	"	"	"	"	
86-73-7	Fluorene	BRL	5.88 µg/l	1	"	"	"	"	"	
118-74-1	Hexachlorobenzene	BRL	5.88 µg/l	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	BRL	5.88 µg/l	1	"	"	"	"	"	
77-47-4	Hexachlorocyclopentadiene	BRL	5.88 µg/l	1	"	"	"	"	"	
67-72-1	Hexachloroethane	BRL	5.88 µg/l	1	"	"	"	"	"	
193-39-5	Indeno (1,2,3-cd) pyrene	BRL	5.88 µg/l	1	"	"	"	"	"	
78-59-1	Isophorone	BRL	5.88 µg/l	1	"	"	"	"	"	
91-57-6	2-Methylnaphthalene	BRL	5.88 µg/l	1	"	"	"	"	"	
95-48-7	2-Methylphenol	BRL	5.88 µg/l	1	"	"	"	"	"	
108-39-4,106-43	3,4-Methylphenol	BRL	11.8 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	5.88 µg/l	1	"	"	"	"	"	
88-74-4	2-Nitroaniline	BRL	5.88 µg/l	1	"	"	"	"	"	
99-09-2	3-Nitroaniline	BRL	5.88 µg/l	1	"	"	"	"	"	
100-01-6	4-Nitroaniline	BRL	23.5 µg/l	1	"	"	"	"	"	
98-95-3	Nitrobenzene	BRL	5.88 µg/l	1	"	"	"	"	"	
88-75-5	2-Nitrophenol	BRL	5.88 µg/l	1	"	"	"	"	"	
100-02-7	4-Nitrophenol	BRL	23.5 µg/l	1	"	"	"	"	"	
62-75-9	N-Nitrosodimethylamine	BRL	5.88 µg/l	1	"	"	"	"	"	
621-64-7	N-Nitrosodi-n-propylamine	BRL	5.88 µg/l	1	"	"	"	"	"	
86-30-6	N-Nitrosodiphenylamine	BRL	5.88 µg/l	1	"	"	"	"	"	
87-86-5	Pentachlorophenol	BRL	23.5 µg/l	1	"	"	"	"	"	
85-01-8	Phenanthrene	BRL	5.88 µg/l	1	"	"	"	"	"	
108-95-2	Phenol	BRL	5.88 µg/l	1	"	"	"	"	"	
129-00-0	Pyrene	BRL	5.88 µg/l	1	"	"	"	"	"	
110-86-1	Pyridine	BRL	5.88 µg/l	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	BRL	5.88 µg/l	1	"	"	"	"	"	
90-12-0	1-Methylnaphthalene	BRL	5.88 µg/l	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
FRAC TANK	05-201876.00	Ground Water	30-Sep-05 00:00	30-Sep-05
SA35036-27				

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Semivolatile Organic Compounds by GCMS										
Semivolatile Organic Compounds by SW846 8270C			Prepared by method	SW846 3535						
95-95-4	2,4,5-Trichlorophenol	BRL	5.88 µg/l	1	SW846 8270C	03-Oct-05	03-Oct-05	5100023	M.B	
88-06-2	2,4,6-Trichlorophenol	BRL	5.88 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
321-60-8	*2-Fluorobiphenyl*	*41.3*	*30-130 %*		"	"	"	"	"	
367-12-4	*2-Fluorophenol*	*45.4*	*15-110 %*		"	"	"	"	"	
4165-60-0	*Nitrobenzene-d5*	*33.7*	*30-130 %*		"	"	"	"	"	
4165-62-2	*Phenol-d5*	*41.8*	*15-110 %*		"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*48.0*	*30-130 %*		"	"	"	"	"	
118-79-6	*2,4,6-Tribromophenol*	*45.9*	*15-110 %*		"	"	"	"	"	
Total Metals by EPA 6000/7000 Series Methods										
7440-22-4	Silver	BRL	0.0050 mg/l	1	SW846 6010B	03-Oct-05	04-Oct-05	5100187	RE	
7440-38-2	Arsenic	BRL	0.0040 mg/l	1	"	"	"	"	"	
7440-39-3	Barium	0.204	0.0025 mg/l	1	"	"	"	"	"	
7440-43-9	Cadmium	BRL	0.0012 mg/l	1	"	"	"	"	"	
7440-47-3	Chromium	BRL	0.0025 mg/l	1	"	"	"	"	"	
7439-92-1	Lead	BRL	0.0038 mg/l	1	"	"	"	"	"	
7782-49-2	Selenium	BRL	0.0075 mg/l	1	"	"	"	"	"	
Total Metals by EPA 200 Series Methods										
7439-97-6	Mercury	BRL	0.00020 mg/l	1	EPA 245.2/7470A	03-Oct-05	04-Oct-05	5100080	YP	

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5100071 - SW846 5030 Water MS										
Blank (5100071-BLK1)				Prepared & Analyzed: 03-Oct-05						
Acetone	BRL	10.0	µg/l							
Acrylonitrile	BRL	1.0	µg/l							
Benzene	BRL	1.0	µg/l							
Bromobenzene	BRL	1.0	µg/l							
Bromochloromethane	BRL	1.0	µg/l							
Bromodichloromethane	BRL	1.0	µg/l							
Bromoform	BRL	1.0	µg/l							
Bromomethane	BRL	2.0	µg/l							
2-Butanone (MEK)	BRL	10.0	µg/l							
n-Butylbenzene	BRL	1.0	µg/l							
sec-Butylbenzene	BRL	1.0	µg/l							
tert-Butylbenzene	BRL	1.0	µg/l							
Carbon disulfide	BRL	5.0	µg/l							
Carbon tetrachloride	BRL	1.0	µg/l							
Chlorobenzene	BRL	1.0	µg/l							
Chloroethane	BRL	2.0	µg/l							
Chloroform	BRL	1.0	µg/l							
Chloromethane	BRL	2.0	µg/l							
2-Chlorotoluene	BRL	1.0	µg/l							
4-Chlorotoluene	BRL	1.0	µg/l							
1,2-Dibromo-3-chloropropane	BRL	2.0	µg/l							
Dibromochloromethane	BRL	1.0	µg/l							
1,2-Dibromoethane (EDB)	BRL	1.0	µg/l							
Dibromomethane	BRL	1.0	µg/l							
1,2-Dichlorobenzene	BRL	1.0	µg/l							
1,3-Dichlorobenzene	BRL	1.0	µg/l							
1,4-Dichlorobenzene	BRL	1.0	µg/l							
Dichlorodifluoromethane (Freon12)	BRL	2.0	µg/l							
1,1-Dichloroethane	BRL	1.0	µg/l							
1,2-Dichloroethane	BRL	1.0	µg/l							
1,1-Dichloroethene	BRL	1.0	µg/l							
cis-1,2-Dichloroethene	BRL	1.0	µg/l							
trans-1,2-Dichloroethene	BRL	1.0	µg/l							
1,2-Dichloropropane	BRL	1.0	µg/l							
1,3-Dichloropropane	BRL	1.0	µg/l							
2,2-Dichloropropane	BRL	1.0	µg/l							
1,1-Dichloropropene	BRL	1.0	µg/l							
cis-1,3-Dichloropropene	BRL	1.0	µg/l							
trans-1,3-Dichloropropene	BRL	1.0	µg/l							
Ethylbenzene	BRL	1.0	µg/l							
Hexachlorobutadiene	BRL	1.0	µg/l							
2-Hexanone (MBK)	BRL	10.0	µg/l							
Isopropylbenzene	BRL	1.0	µg/l							
4-Isopropyltoluene	BRL	1.0	µg/l							
Methyl tert-butyl ether	BRL	1.0	µg/l							
4-Methyl-2-pentanone (MIBK)	BRL	10.0	µg/l							
Methylene chloride	BRL	10.0	µg/l							
Naphthalene	BRL	1.0	µg/l							
n-Propylbenzene	BRL	1.0	µg/l							
Styrene	BRL	1.0	µg/l							
1,1,1,2-Tetrachloroethane	BRL	1.0	µg/l							
1,1,2,2-Tetrachloroethane	BRL	1.0	µg/l							
Tetrachloroethene	BRL	1.0	µg/l							
Toluene	BRL	1.0	µg/l							

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5100071 - SW846 5030 Water MS										
Blank (5100071-BLK1)				Prepared & Analyzed: 03-Oct-05						
1,2,3-Trichlorobenzene	BRL	1.0	µg/l							
1,2,4-Trichlorobenzene	BRL	1.0	µg/l							
1,1,1-Trichloroethane	BRL	1.0	µg/l							
1,1,2-Trichloroethane	BRL	1.0	µg/l							
Trichloroethene	BRL	1.0	µg/l							
Trichlorofluoromethane (Freon 11)	BRL	1.0	µg/l							
1,2,3-Trichloropropane	BRL	1.0	µg/l							
1,2,4-Trimethylbenzene	BRL	1.0	µg/l							
1,3,5-Trimethylbenzene	BRL	1.0	µg/l							
Vinyl chloride	BRL	1.0	µg/l							
m,p-Xylene	BRL	2.0	µg/l							
o-Xylene	BRL	1.0	µg/l							
Tetrahydrofuran	BRL	10.0	µg/l							
Ethyl ether	BRL	1.0	µg/l							
Tert-amyl methyl ether	BRL	1.0	µg/l							
Ethyl tert-butyl ether	BRL	1.0	µg/l							
Di-isopropyl ether	BRL	1.0	µg/l							
Tert-Butanol / butyl alcohol	BRL	10.0	µg/l							
1,4-Dioxane	BRL	20.0	µg/l							
Surrogate: 4-Bromofluorobenzene	*48.7*		µg/l	*50.0*		*97.4*	*70-130*			
Surrogate: Toluene-d8	*47.1*		µg/l	*50.0*		*94.2*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*44.4*		µg/l	*50.0*		*88.8*	*70-130*			
Surrogate: Dibromofluoromethane	*46.3*		µg/l	*50.0*		*92.6*	*70-130*			
LCS (5100071-BS1)				Prepared & Analyzed: 03-Oct-05						
Acetone	28.3		µg/l	20.0		142	2.17-194			
Acrylonitrile	25.9		µg/l	20.0		130	70-130			
Benzene	20.5		µg/l	20.0		102	70-130			
Bromobenzene	20.1		µg/l	20.0		100	70-130			
Bromochloromethane	19.9		µg/l	20.0		99.5	70-130			
Bromodichloromethane	20.0		µg/l	20.0		100	70-130			
Bromoform	22.5		µg/l	20.0		112	70-130			
Bromomethane	22.0		µg/l	20.0		110	61.9-145			
2-Butanone (MEK)	14.5		µg/l	20.0		72.5	14.9-165			
n-Butylbenzene	20.3		µg/l	20.0		102	70-130			
sec-Butylbenzene	20.6		µg/l	20.0		103	70-130			
tert-Butylbenzene	20.2		µg/l	20.0		101	70-130			
Carbon disulfide	20.1		µg/l	20.0		100	70-130			
Carbon tetrachloride	17.6		µg/l	20.0		88.0	70-130			
Chlorobenzene	20.4		µg/l	20.0		102	70-130			
Chloroethane	25.2		µg/l	20.0		126	64.4-134			
Chloroform	18.1		µg/l	20.0		90.5	70-130			
Chloromethane	27.2		µg/l	20.0		136	70-130			QC-2
2-Chlorotoluene	20.0		µg/l	20.0		100	70-130			
4-Chlorotoluene	19.6		µg/l	20.0		98.0	70-130			
1,2-Dibromo-3-chloropropane	21.4		µg/l	20.0		107	70-130			
Dibromochloromethane	21.3		µg/l	20.0		106	45.3-146			
1,2-Dibromoethane (EDB)	20.6		µg/l	20.0		103	70-130			
Dibromomethane	20.7		µg/l	20.0		104	70-130			
1,2-Dichlorobenzene	21.0		µg/l	20.0		105	70-130			
1,3-Dichlorobenzene	21.4		µg/l	20.0		107	70-130			
1,4-Dichlorobenzene	20.9		µg/l	20.0		104	70-130			
Dichlorodifluoromethane (Freon12)	30.3		µg/l	20.0		152	49.6-201			
1,1-Dichloroethane	20.4		µg/l	20.0		102	70-130			
1,2-Dichloroethane	18.4		µg/l	20.0		92.0	70-130			

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5100071 - SW846 5030 Water MS										
LCS (5100071-BS1)				Prepared & Analyzed: 03-Oct-05						
1,1-Dichloroethene	22.3		µg/l	20.0		112	70-130			
cis-1,2-Dichloroethene	19.5		µg/l	20.0		97.5	70-130			
trans-1,2-Dichloroethene	18.6		µg/l	20.0		93.0	70-130			
1,2-Dichloropropane	22.9		µg/l	20.0		114	70-130			
1,3-Dichloropropane	21.7		µg/l	20.0		108	70-130			
2,2-Dichloropropane	19.1		µg/l	20.0		95.5	70-130			
1,1-Dichloropropene	20.0		µg/l	20.0		100	70-130			
cis-1,3-Dichloropropene	20.9		µg/l	20.0		104	70-130			
trans-1,3-Dichloropropene	20.0		µg/l	20.0		100	70-130			
Ethylbenzene	20.3		µg/l	20.0		102	70-130			
Hexachlorobutadiene	19.9		µg/l	20.0		99.5	68.6-137			
2-Hexanone (MBK)	18.3		µg/l	20.0		91.5	70-130			
Isopropylbenzene	19.6		µg/l	20.0		98.0	70-130			
4-Isopropyltoluene	20.6		µg/l	20.0		103	70-130			
Methyl tert-butyl ether	21.2		µg/l	20.0		106	70-130			
4-Methyl-2-pentanone (MIBK)	20.4		µg/l	20.0		102	48.6-137			
Methylene chloride	20.2		µg/l	20.0		101	70-130			
Naphthalene	21.2		µg/l	20.0		106	70-130			
n-Propylbenzene	20.4		µg/l	20.0		102	70-130			
Styrene	20.5		µg/l	20.0		102	70-130			
1,1,1,2-Tetrachloroethane	20.8		µg/l	20.0		104	70-130			
1,1,2,2-Tetrachloroethane	24.7		µg/l	20.0		124	70-130			
Tetrachloroethene	18.3		µg/l	20.0		91.5	70-130			
Toluene	19.2		µg/l	20.0		96.0	70-130			
1,2,3-Trichlorobenzene	20.1		µg/l	20.0		100	70-130			
1,2,4-Trichlorobenzene	19.3		µg/l	20.0		96.5	70-130			
1,1,1-Trichloroethane	17.7		µg/l	20.0		88.5	70-130			
1,1,2-Trichloroethane	22.2		µg/l	20.0		111	70-130			
Trichloroethene	18.9		µg/l	20.0		94.5	70-130			
Trichlorofluoromethane (Freon 11)	20.6		µg/l	20.0		103	67.9-143			
1,2,3-Trichloropropane	22.6		µg/l	20.0		113	70-130			
1,2,4-Trimethylbenzene	20.0		µg/l	20.0		100	70-130			
1,3,5-Trimethylbenzene	20.1		µg/l	20.0		100	70-130			
Vinyl chloride	24.1		µg/l	20.0		120	70-130			
m,p-Xylene	42.1		µg/l	40.0		105	70-130			
o-Xylene	21.7		µg/l	20.0		108	70-130			
Tetrahydrofuran	22.7		µg/l	20.0		114	70-130			
Ethyl ether	26.9		µg/l	20.0		134	70-130			
Tert-amyl methyl ether	21.5		µg/l	20.0		108	70-130			
Ethyl tert-butyl ether	21.6		µg/l	20.0		108	70-130			
Di-isopropyl ether	23.6		µg/l	20.0		118	70-130			
Tert-Butanol / butyl alcohol	232		µg/l	200		116	70-130			
1,4-Dioxane	206		µg/l	200		103	36.5-156			
Surrogate: 4-Bromofluorobenzene	*51.6*		µg/l	*50.0*		*103*	*70-130*			
Surrogate: Toluene-d8	*47.4*		µg/l	*50.0*		*94.8*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*45.3*		µg/l	*50.0*		*90.6*	*70-130*			
Surrogate: Dibromofluoromethane	*46.2*		µg/l	*50.0*		*92.4*	*70-130*			
LCS Dup (5100071-BSD1)				Prepared & Analyzed: 03-Oct-05						
Acetone	22.2		µg/l	20.0		111	2.17-194	24.5	50	
Acrylonitrile	24.5		µg/l	20.0		122	70-130	6.35	25	
Benzene	19.8		µg/l	20.0		99.0	70-130	2.99	25	
Bromobenzene	19.5		µg/l	20.0		97.5	70-130	2.53	25	
Bromochloromethane	18.1		µg/l	20.0		90.5	70-130	9.47	25	
Bromodichloromethane	18.5		µg/l	20.0		92.5	70-130	7.79	25	

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5100071 - SW846 5030 Water MS										
LCS Dup (5100071-BSD1)				Prepared & Analyzed: 03-Oct-05						
Bromoform	20.3		µg/l	20.0		102	70-130	9.35	25	
Bromomethane	16.4		µg/l	20.0		82.0	61.9-145	29.2	50	
2-Butanone (MEK)	24.1		µg/l	20.0		120	14.9-165	49.4	50	
n-Butylbenzene	20.0		µg/l	20.0		100	70-130	1.98	25	
sec-Butylbenzene	20.5		µg/l	20.0		102	70-130	0.976	25	
tert-Butylbenzene	19.8		µg/l	20.0		99.0	70-130	2.00	25	
Carbon disulfide	20.0		µg/l	20.0		100	70-130	0.00	25	
Carbon tetrachloride	17.5		µg/l	20.0		87.5	70-130	0.570	25	
Chlorobenzene	19.2		µg/l	20.0		96.0	70-130	6.06	25	
Chloroethane	24.6		µg/l	20.0		123	64.4-134	2.41	50	
Chloroform	17.0		µg/l	20.0		85.0	70-130	6.27	25	
Chloromethane	26.9		µg/l	20.0		134	70-130	1.48	25	QC-2
2-Chlorotoluene	19.2		µg/l	20.0		96.0	70-130	4.08	25	
4-Chlorotoluene	18.7		µg/l	20.0		93.5	70-130	4.70	25	
1,2-Dibromo-3-chloropropane	18.7		µg/l	20.0		93.5	70-130	13.5	25	
Dibromochloromethane	20.0		µg/l	20.0		100	45.3-146	5.83	50	
1,2-Dibromoethane (EDB)	19.4		µg/l	20.0		97.0	70-130	6.00	25	
Dibromomethane	19.6		µg/l	20.0		98.0	70-130	3.94	25	
1,2-Dichlorobenzene	20.6		µg/l	20.0		103	70-130	1.92	25	
1,3-Dichlorobenzene	20.6		µg/l	20.0		103	70-130	3.81	25	
1,4-Dichlorobenzene	19.9		µg/l	20.0		99.5	70-130	4.42	25	
Dichlorodifluoromethane (Freon12)	30.9		µg/l	20.0		154	49.6-201	1.31	50	
1,1-Dichloroethane	21.9		µg/l	20.0		110	70-130	7.55	25	
1,2-Dichloroethane	16.6		µg/l	20.0		83.0	70-130	10.3	25	
1,1-Dichloroethene	21.1		µg/l	20.0		106	70-130	5.50	25	
cis-1,2-Dichloroethene	18.2		µg/l	20.0		91.0	70-130	6.90	25	
trans-1,2-Dichloroethene	17.6		µg/l	20.0		88.0	70-130	5.52	25	
1,2-Dichloropropane	20.9		µg/l	20.0		104	70-130	9.17	25	
1,3-Dichloropropane	20.1		µg/l	20.0		100	70-130	7.69	25	
2,2-Dichloropropane	17.8		µg/l	20.0		89.0	70-130	7.05	25	
1,1-Dichloropropene	19.3		µg/l	20.0		96.5	70-130	3.56	25	
cis-1,3-Dichloropropene	19.4		µg/l	20.0		97.0	70-130	6.97	25	
trans-1,3-Dichloropropene	19.0		µg/l	20.0		95.0	70-130	5.13	25	
Ethylbenzene	19.3		µg/l	20.0		96.5	70-130	5.54	25	
Hexachlorobutadiene	20.3		µg/l	20.0		102	68.6-137	2.48	50	
2-Hexanone (MBK)	17.8		µg/l	20.0		89.0	70-130	2.77	25	
Isopropylbenzene	18.9		µg/l	20.0		94.5	70-130	3.64	25	
4-Isopropyltoluene	20.6		µg/l	20.0		103	70-130	0.00	25	
Methyl tert-butyl ether	19.0		µg/l	20.0		95.0	70-130	10.9	25	
4-Methyl-2-pentanone (MIBK)	20.3		µg/l	20.0		102	48.6-137	0.00	50	
Methylene chloride	18.9		µg/l	20.0		94.5	70-130	6.65	25	
Naphthalene	19.7		µg/l	20.0		98.5	70-130	7.33	25	
n-Propylbenzene	19.9		µg/l	20.0		99.5	70-130	2.48	25	
Styrene	19.7		µg/l	20.0		98.5	70-130	3.49	25	
1,1,1,2-Tetrachloroethane	18.9		µg/l	20.0		94.5	70-130	9.57	25	
1,1,2,2-Tetrachloroethane	23.2		µg/l	20.0		116	70-130	6.67	25	
Tetrachloroethene	17.5		µg/l	20.0		87.5	70-130	4.47	25	
Toluene	18.9		µg/l	20.0		94.5	70-130	1.57	25	
1,2,3-Trichlorobenzene	19.5		µg/l	20.0		97.5	70-130	2.53	25	
1,2,4-Trichlorobenzene	18.8		µg/l	20.0		94.0	70-130	2.62	25	
1,1,1-Trichloroethane	19.0		µg/l	20.0		95.0	70-130	7.08	25	
1,1,2-Trichloroethane	21.2		µg/l	20.0		106	70-130	4.61	25	
Trichloroethene	17.9		µg/l	20.0		89.5	70-130	5.43	25	
Trichlorofluoromethane (Freon 11)	20.5		µg/l	20.0		102	67.9-143	0.976	50	

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5100071 - SW846 5030 Water MS										
LCS Dup (5100071-BSD1)				Prepared & Analyzed: 03-Oct-05						
1,2,3-Trichloropropane	21.1		µg/l	20.0		106	70-130	6.39	25	
1,2,4-Trimethylbenzene	18.8		µg/l	20.0		94.0	70-130	6.19	25	
1,3,5-Trimethylbenzene	18.9		µg/l	20.0		94.5	70-130	5.66	25	
Vinyl chloride	20.9		µg/l	20.0		104	70-130	14.3	25	
m,p-Xylene	40.2		µg/l	40.0		100	70-130	4.88	25	
o-Xylene	20.8		µg/l	20.0		104	70-130	3.77	25	
Tetrahydrofuran	22.6		µg/l	20.0		113	70-130	0.881	25	
Ethyl ether	22.4		µg/l	20.0		112	70-136	17.9	50	
Tert-amyl methyl ether	19.9		µg/l	20.0		99.5	70-130	8.19	25	
Ethyl tert-butyl ether	19.9		µg/l	20.0		99.5	70-130	8.19	25	
Di-isopropyl ether	22.3		µg/l	20.0		112	70-130	5.22	25	
Tert-Butanol / butyl alcohol	212		µg/l	200		106	70-130	9.01	25	
1,4-Dioxane	229		µg/l	200		114	36.5-156	10.1	25	
Surrogate: 4-Bromofluorobenzene	*49.6*		µg/l	*50.0*		*99.2*	*70-130*			
Surrogate: Toluene-d8	*47.8*		µg/l	*50.0*		*95.6*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*42.1*		µg/l	*50.0*		*84.2*	*70-130*			
Surrogate: Dibromofluoromethane	*44.8*		µg/l	*50.0*		*89.6*	*70-130*			
Matrix Spike (5100071-MS1)	**Source: SA34799-02**			Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
Benzene	24.4		µg/l	20.0	BRL	122	70-130			
Chlorobenzene	23.4		µg/l	20.0	BRL	117	70-130			
1,1-Dichloroethene	25.6		µg/l	20.0	BRL	128	70-130			
Toluene	23.7		µg/l	20.0	BRL	118	70-130			
Trichloroethene	22.9		µg/l	20.0	BRL	114	70-130			
Surrogate: 4-Bromofluorobenzene	*49.6*		µg/l	*50.0*		*99.2*	*70-130*			
Surrogate: Toluene-d8	*47.9*		µg/l	*50.0*		*95.8*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*42.8*		µg/l	*50.0*		*85.6*	*70-130*			
Surrogate: Dibromofluoromethane	*45.4*		µg/l	*50.0*		*90.8*	*70-130*			
Matrix Spike Dup (5100071-MSD1)	**Source: SA34799-02**			Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
Benzene	24.9		µg/l	20.0	BRL	124	70-130	1.63	30	
~~Chlorobenzene~~	~~24.1~~		~~µg/l~~	~~20.0~~	~~BRL~~	~~120~~	~~70-130~~	~~2.53~~	~~30~~	
1,1-Dichloroethene	25.0		µg/l	20.0	BRL	125	70-130	2.37	30	
Toluene	24.3		µg/l	20.0	BRL	122	70-130	3.33	30	
Trichloroethene	23.4		µg/l	20.0	BRL	117	70-130	2.60	30	
Surrogate: 4-Bromofluorobenzene	*51.0*		µg/l	*50.0*		*102*	*70-130*			
Surrogate: Toluene-d8	*47.9*		µg/l	*50.0*		*95.8*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*46.0*		µg/l	*50.0*		*92.0*	*70-130*			
Surrogate: Dibromofluoromethane	*47.5*		µg/l	*50.0*		*95.0*	*70-130*			

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5100025 - SW846 3535										
Blank (5100025-BLK1)				Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
Gasoline	BRL	0.1	mg/l							
Fuel Oil #2	BRL	0.1	mg/l							
Fuel Oil #4	BRL	0.1	mg/l							
Fuel Oil #6	BRL	0.1	mg/l							
Motor Oil	BRL	0.1	mg/l							
Ligroin	BRL	0.1	mg/l							
Aviation Fuel	BRL	0.1	mg/l							
Unidentified	BRL	0.1	mg/l							
Other Oil	BRL	0.1	mg/l							
Total Petroleum Hydrocarbons	BRL	0.1	mg/l							
Surrogate: 1-Chlorooctadecane	*0.0335*		mg/l	*0.0500*		*67.0*	*40-140*			
LCS (5100025-BS1)				Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
Fuel Oil #2	9.1	0.1	mg/l	10.0		91.0	40-140			

Semivolatile Organic Compounds by GC - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5100024 - SW846 3535										
Blank (5100024-BLK1)				Prepared & Analyzed: 03-Oct-05						
PCB 1016	BRL	0.200	µg/l							
PCB 1221	BRL	0.200	µg/l							
PCB 1232	BRL	0.200	µg/l							
PCB 1242	BRL	0.200	µg/l							
PCB 1248	BRL	0.200	µg/l							
PCB 1254	BRL	0.200	µg/l							
PCB 1260	BRL	0.200	µg/l							
PCB 1262	BRL	0.200	µg/l							
PCB 1268	BRL	0.200	µg/l							
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.140*		µg/l	*0.200*		*70.0*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*0.260*		µg/l	*0.200*		*130*	*30-150*			
LCS (5100024-BS1)				Prepared & Analyzed: 03-Oct-05						
PCB 1016	2.38	0.200	µg/l	2.50		95.2	40-140			
PCB 1260	2.63	0.200	µg/l	2.50		105	40-140			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.140*		µg/l	*0.200*		*70.0*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*0.230*		µg/l	*0.200*		*115*	*30-150*			
Batch 5100029 - SW846 3550B										
Blank (5100029-BLK1)				Prepared & Analyzed: 03-Oct-05						
PCB 1016	BRL	28.6	µg/kg wet							
PCB 1221	BRL	28.6	µg/kg wet							
PCB 1232	BRL	28.6	µg/kg wet							
PCB 1242	BRL	28.6	µg/kg wet							
PCB 1248	BRL	28.6	µg/kg wet							
PCB 1254	BRL	28.6	µg/kg wet							
PCB 1260	BRL	28.6	µg/kg wet							
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*32.9*		µg/kg wet	*28.6*		*115*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*25.7*		µg/kg wet	*28.6*		*89.9*	*30-150*			
LCS (5100029-BS1)				Prepared & Analyzed: 03-Oct-05						
PCB 1016	464	28.6	µg/kg wet	357		130	40-140			
PCB 1260	461	28.6	µg/kg wet	357		129	40-140			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*34.3*		µg/kg wet	*28.6*		*120*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*38.6*		µg/kg wet	*28.6*		*135*	*30-150*			
Duplicate (5100029-DUP1)	**Source: SA35001-01**			Prepared & Analyzed: 03-Oct-05						
PCB 1016	BRL	89.4	µg/kg dry		BRL				40	
PCB 1221	BRL	89.4	µg/kg dry		BRL				40	
PCB 1232	BRL	89.4	µg/kg dry		BRL				40	
PCB 1242	BRL	89.4	µg/kg dry		BRL				40	
PCB 1248	BRL	89.4	µg/kg dry		BRL				40	
PCB 1254	BRL	89.4	µg/kg dry		BRL				40	
PCB 1260	BRL	89.4	µg/kg dry		BRL				40	
PCB 1262	BRL	89.4	µg/kg dry		BRL				40	
PCB 1268	BRL	89.4	µg/kg dry		BRL				40	
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*103*		µg/kg dry	*89.3*		*115*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*107*		µg/kg dry	*89.3*		*120*	*30-150*			
Matrix Spike (5100029-MS1)	**Source: SA35001-01**			Prepared & Analyzed: 03-Oct-05						
PCB 1016	1510	92.0	µg/kg dry	1150	BRL	131	40-140			
PCB 1260	1560	92.0	µg/kg dry	1150	BRL	136	40-140			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*106*		µg/kg dry	*92.0*		*115*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*120*		µg/kg dry	*92.0*		*130*	*30-150*			
Matrix Spike Dup (5100029-MSD1)	**Source: SA35001-01**			Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
PCB 1016	1560	89.7	µg/kg dry	1120	BRL	139	40-140	5.93	50	

Semivolatile Organic Compounds by GC - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5100029 - SW846 3550B										
Matrix Spike Dup (5100029-MSD1)	**Source: SA35001-01**			Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
PCB 1260	1510	89.7	µg/kg dry	1120	BRL	135	40-140	0.738	50	
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*108*		µg/kg dry	*89.6*		*121*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*134*		µg/kg dry	*89.6*		*150*	*30-150*			
Batch 5100030 - SW846 3550B										
Blank (5100030-BLK1)				Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
PCB 1016	BRL	28.6	µg/kg wet							
PCB 1221	BRL	28.6	µg/kg wet							
PCB 1232	BRL	28.6	µg/kg wet							
PCB 1242	BRL	28.6	µg/kg wet							
PCB 1248	BRL	28.6	µg/kg wet							
PCB 1254	BRL	28.6	µg/kg wet							
PCB 1260	BRL	28.6	µg/kg wet							
PCB 1262	BRL	28.6	µg/kg wet							
PCB 1268	BRL	28.6	µg/kg wet							
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*28.6*		µg/kg wet	*28.6*		*100*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*40.0*		µg/kg wet	*28.6*		*140*	*30-150*			
LCS (5100030-BS1)				Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
PCB 1016	326	28.6	µg/kg wet	357		91.3	40-140			
PCB 1260	401	28.6	µg/kg wet	357		112	40-140			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*30.0*		µg/kg wet	*28.6*		*105*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*38.6*		µg/kg wet	*28.6*		*135*	*30-150*			
Duplicate (5100030-DUP1)	**Source: SA35036-07**			Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
PCB 1016	BRL	99.2	µg/kg dry		BRL				40	
PCB 1221	BRL	99.2	µg/kg dry		BRL				40	
PCB 1232	BRL	99.2	µg/kg dry		BRL				40	
PCB 1242	BRL	99.2	µg/kg dry		BRL				40	
PCB 1248	7590	99.2	µg/kg dry		21000			93.8	40	E
PCB 1254	BRL	99.2	µg/kg dry		BRL				40	
~~PCB 1260~~	~~BRL~~	~~99.2~~	~~µg/kg dry~~		~~952~~				~~40~~	
PCB 1262	BRL	99.2	µg/kg dry		BRL				40	
PCB 1268	BRL	99.2	µg/kg dry		BRL				40	
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*114*		µg/kg dry	*99.1*		*115*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*114*		µg/kg dry	*99.1*		*115*	*30-150*			
Matrix Spike (5100030-MS1)	**Source: SA35036-07**			Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
~~PCB 1016~~	~~1080~~	~~92.6~~	~~µg/kg dry~~	~~1160~~	~~BRL~~	~~93.1~~	~~40-140~~			
PCB 1260	1560	92.6	µg/kg dry	1160	952	52.4	40-140			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*78.6*		µg/kg dry	*92.5*		*85.0*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*139*		µg/kg dry	*92.5*		*150*	*30-150*			
Matrix Spike Dup (5100030-MSD1)	**Source: SA35036-07**			Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
PCB 1016	1020	92.4	µg/kg dry	1150	BRL	88.7	40-140	4.84	50	
~~PCB 1260~~	~~1400~~	~~92.4~~	~~µg/kg dry~~	~~1150~~	~~952~~	~~46.9~~	~~40-140~~	~~11.2~~	~~50~~	
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*83.1*		µg/kg dry	*92.3*		*90.0*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*134*		µg/kg dry	*92.3*		*145*	*30-150*			
Batch 5100031 - SW846 3545A										
Blank (5100031-BLK1)				Prepared & Analyzed: 03-Oct-05						
PCB 1016	BRL	28.6	µg/kg wet							
PCB 1221	BRL	28.6	µg/kg wet							
PCB 1232	BRL	28.6	µg/kg wet							
PCB 1242	BRL	28.6	µg/kg wet							
PCB 1248	BRL	28.6	µg/kg wet							

Semivolatile Organic Compounds by GC - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5100031 - SW846 3545A										
Blank (5100031-BLK1)				Prepared & Analyzed: 03-Oct-05						
PCB 1254	BRL	28.6	µg/kg wet							
PCB 1260	BRL	28.6	µg/kg wet							
PCB 1262	BRL	28.6	µg/kg wet							
PCB 1268	BRL	28.6	µg/kg wet							
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*24.3*		µg/kg wet	*28.6*		*85.0*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*38.6*		µg/kg wet	*28.6*		*135*	*30-150*			
LCS (5100031-BS1)				Prepared & Analyzed: 03-Oct-05						
PCB 1016	336	28.6	µg/kg wet	357		94.1	40-140			
PCB 1260	381	28.6	µg/kg wet	357		107	40-140			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*24.3*		µg/kg wet	*28.6*		*85.0*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*38.6*		µg/kg wet	*28.6*		*135*	*30-150*			
Duplicate (5100031-DUP1)	**Source: SA34971-01**			Prepared & Analyzed: 03-Oct-05						
PCB 1016	BRL	30.5	µg/kg dry		BRL				40	
PCB 1221	BRL	30.5	µg/kg dry		BRL				40	
PCB 1232	BRL	30.5	µg/kg dry		BRL				40	
PCB 1242	BRL	30.5	µg/kg dry		BRL				40	
PCB 1248	BRL	30.5	µg/kg dry		BRL				40	
PCB 1254	BRL	30.5	µg/kg dry		BRL				40	
PCB 1260	BRL	30.5	µg/kg dry		BRL				40	
PCB 1262	BRL	30.5	µg/kg dry		BRL				40	
PCB 1268	BRL	30.5	µg/kg dry		BRL				40	
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*25.9*		µg/kg dry	*30.5*		*84.9*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*35.1*		µg/kg dry	*30.5*		*115*	*30-150*			
Matrix Spike (5100031-MS1)	**Source: SA34971-01**			Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
PCB 1016	368	30.7	µg/kg dry	383	BRL	96.1	40-140			
PCB 1260	423	30.7	µg/kg dry	383	BRL	110	40-140			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*26.0*		µg/kg dry	*30.6*		*85.0*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*41.3*		µg/kg dry	*30.6*		*135*	*30-150*			
Matrix Spike Dup (5100031-MSD1)	**Source: SA34971-01**			Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
PCB 1016	358	30.6	µg/kg dry	382	BRL	93.7	40-140	2.53	50	
PCB 1260	410	30.6	µg/kg dry	382	BRL	107	40-140	2.76	50	
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*27.5*		µg/kg dry	*30.6*		*89.9*	*30-150*			
Surrogate: Decachlorobiphenyl (Sr)	*39.7*		µg/kg dry	*30.6*		*130*	*30-150*			

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5100023 - SW846 3535										
Blank (5100023-BLK1)				Prepared & Analyzed: 03-Oct-05						
Acenaphthene	BRL	5.00	µg/l							
Acenaphthylene	BRL	5.00	µg/l							
Aniline	BRL	5.00	µg/l							
Anthracene	BRL	5.00	µg/l							
Atrazine	BRL	5.00	µg/l							
Azobenzene/Diphenyldiazine	BRL	5.00	µg/l							
Benzidine	BRL	5.00	µg/l							
Benzo (a) anthracene	BRL	5.00	µg/l							
Benzo (a) pyrene	BRL	5.00	µg/l							
Benzo (b) fluoranthene	BRL	5.00	µg/l							
Benzo (g,h,i) perylene	BRL	5.00	µg/l							
Benzo (k) fluoranthene	BRL	5.00	µg/l							
Benzoic acid	BRL	5.00	µg/l							
Benzyl alcohol	BRL	5.00	µg/l							
Bis(2-chloroethoxy)methane	BRL	5.00	µg/l							
Bis(2-chloroethyl)ether	BRL	5.00	µg/l							
Bis(2-chloroisopropyl)ether	BRL	5.00	µg/l							
Bis(2-ethylhexyl)phthalate	BRL	5.00	µg/l							
4-Bromophenyl phenyl ether	BRL	5.00	µg/l							
Butyl benzyl phthalate	BRL	5.00	µg/l							
Carbazole	BRL	5.00	µg/l							
4-Chloro-3-methylphenol	BRL	5.00	µg/l							
4-Chloroaniline	BRL	5.00	µg/l							
2-Chloronaphthalene	BRL	5.00	µg/l							
2-Chlorophenol	BRL	5.00	µg/l							
4-Chlorophenyl phenyl ether	BRL	5.00	µg/l							
Chrysene	BRL	5.00	µg/l							
Dibenzo (a,h) anthracene	BRL	5.00	µg/l							
Dibenzofuran	BRL	5.00	µg/l							
1,2-Dichlorobenzene	BRL	5.00	µg/l							
1,3-Dichlorobenzene	BRL	5.00	µg/l							
1,4-Dichlorobenzene	BRL	5.00	µg/l							
3,3'-Dichlorobenzidine	BRL	5.00	µg/l							
2,4-Dichlorophenol	BRL	5.00	µg/l							
Diethyl phthalate	BRL	5.00	µg/l							
Dimethyl phthalate	BRL	5.00	µg/l							
2,4-Dimethylphenol	BRL	5.00	µg/l							
Di-n-butyl phthalate	BRL	5.00	µg/l							
4,6-Dinitro-2-methylphenol	BRL	5.00	µg/l							
2,4-Dinitrophenol	BRL	5.00	µg/l							
2,4-Dinitrotoluene	BRL	5.00	µg/l							
2,6-Dinitrotoluene	BRL	5.00	µg/l							
Di-n-octyl phthalate	BRL	5.00	µg/l							
Fluoranthene	BRL	5.00	µg/l							
Fluorene	BRL	5.00	µg/l							
Hexachlorobenzene	BRL	5.00	µg/l							
Hexachlorobutadiene	BRL	5.00	µg/l							
Hexachlorocyclopentadiene	BRL	5.00	µg/l							
Hexachloroethane	BRL	5.00	µg/l							
Indeno (1,2,3-cd) pyrene	BRL	5.00	µg/l							
Isophorone	BRL	5.00	µg/l							
2-Methylnaphthalene	BRL	5.00	µg/l							
2-Methylphenol	BRL	5.00	µg/l							
3,4-Methylphenol	BRL	10.0	µg/l							

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5100023 - SW846 3535										
Blank (5100023-BLK1)				Prepared & Analyzed: 03-Oct-05						
Naphthalene	BRL	5.00	µg/l							
2-Nitroaniline	BRL	5.00	µg/l							
3-Nitroaniline	BRL	5.00	µg/l							
4-Nitroaniline	BRL	20.0	µg/l							
Nitrobenzene	BRL	5.00	µg/l							
2-Nitrophenol	BRL	5.00	µg/l							
4-Nitrophenol	BRL	20.0	µg/l							
N-Nitrosodimethylamine	BRL	5.00	µg/l							
N-Nitrosodi-n-propylamine	BRL	5.00	µg/l							
N-Nitrosodiphenylamine	BRL	5.00	µg/l							
Pentachlorophenol	BRL	20.0	µg/l							
Phenanthrene	BRL	5.00	µg/l							
Phenol	BRL	5.00	µg/l							
Pyrene	BRL	5.00	µg/l							
Pyridine	BRL	5.00	µg/l							
1,2,4-Trichlorobenzene	BRL	5.00	µg/l							
1-Methylnaphthalene	BRL	5.00	µg/l							
2,4,5-Trichlorophenol	BRL	5.00	µg/l							
2,4,6-Trichlorophenol	BRL	5.00	µg/l							
Surrogate: 2-Fluorobiphenyl	*43.9*		µg/l	*100*		*43.9*	*30-130*			
Surrogate: 2-Fluorophenol	*45.4*		µg/l	*100*		*45.4*	*15-110*			
Surrogate: Nitrobenzene-d5	*40.9*		µg/l	*100*		*40.9*	*30-130*			
Surrogate: Phenol-d5	*40.2*		µg/l	*100*		*40.2*	*15-110*			
Surrogate: Terphenyl-dl4	*46.6*		µg/l	*100*		*46.6*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*40.7*		µg/l	*100*		*40.7*	*15-110*			
LCS (5100023-BS1)				Prepared & Analyzed: 03-Oct-05						
Acenaphthene	41.6	5.00	µg/l	100		41.6	40-130			
Acenaphthylene	47.8	5.00	µg/l	100		47.8	40-130			
Aniline	41.6	5.00	µg/l	100		41.6	40-130			
Anthracene	49.2	5.00	µg/l	100		49.2	40-130			
Atrazine	142	5.00	µg/l	100		142	0-200			
Azobenzene/Diphenyldiazine	40.6	5.00	µg/l	100		40.6	40-130			
Benzidine	117	5.00	µg/l	100		117	40-130			
Benzo (a) anthracene	43.5	5.00	µg/l	100		43.5	40-130			
Benzo (a) pyrene	50.2	5.00	µg/l	100		50.2	40-130			
Benzo (b) fluoranthene	45.4	5.00	µg/l	100		45.4	40-130			
Benzo (g,h,i) perylene	44.4	5.00	µg/l	100		44.4	40-130			
Benzo (k) fluoranthene	50.4	5.00	µg/l	100		50.4	40-130			
Benzoic acid	15.5	5.00	µg/l	100		15.5	40-130			QC-2
Benzyl alcohol	40.2	5.00	µg/l	100		40.2	40-130			
Bis(2-chloroethoxy)methane	40.6	5.00	µg/l	100		40.6	40-130			
Bis(2-chloroethyl)ether	43.6	5.00	µg/l	100		43.6	40-130			
Bis(2-chloroisopropyl)ether	53.3	5.00	µg/l	100		53.3	40-130			
Bis(2-ethylhexyl)phthalate	46.2	5.00	µg/l	100		46.2	40-130			
4-Bromophenyl phenyl ether	42.9	5.00	µg/l	100		42.9	40-130			
Butyl benzyl phthalate	44.0	5.00	µg/l	100		44.0	40-130			
Carbazole	44.2	5.00	µg/l	100		44.2	40-130			
4-Chloro-3-methylphenol	42.6	5.00	µg/l	100		42.6	40-130			
4-Chloroaniline	40.1	5.00	µg/l	100		40.1	40-130			
2-Chloronaphthalene	44.1	5.00	µg/l	100		44.1	40-130			
2-Chlorophenol	42.0	5.00	µg/l	100		42.0	40-130			
4-Chlorophenyl phenyl ether	42.5	5.00	µg/l	100		42.5	40-130			
Chrysene	44.8	5.00	µg/l	100		44.8	40-130			
Dibenzo (a,h) anthracene	40.6	5.00	µg/l	100		40.6	40-130			

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5100023 - SW846 3535										
LCS (5100023-BS1)				Prepared & Analyzed: 03-Oct-05						
Dibenzofuran	43.8	5.00	µg/l	100		43.8	40-130			
1,2-Dichlorobenzene	41.1	5.00	µg/l	100		41.1	40-130			
1,3-Dichlorobenzene	43.6	5.00	µg/l	100		43.6	40-130			
1,4-Dichlorobenzene	41.7	5.00	µg/l	100		41.7	40-130			
3,3'-Dichlorobenzidine	43.4	5.00	µg/l	100		43.4	40-130			
2,4-Dichlorophenol	41.0	5.00	µg/l	100		41.0	40-130			
Diethyl phthalate	46.9	5.00	µg/l	100		46.9	40-130			
Dimethyl phthalate	46.1	5.00	µg/l	100		46.1	40-130			
2,4-Dimethylphenol	54.8	5.00	µg/l	100		54.8	40-130			
Di-n-butyl phthalate	53.0	5.00	µg/l	100		53.0	40-130			
4,6-Dinitro-2-methylphenol	42.9	5.00	µg/l	100		42.9	40-130			
2,4-Dinitrophenol	22.1	5.00	µg/l	100		22.1	40-130			QC-2
2,4-Dinitrotoluene	49.4	5.00	µg/l	100		49.4	40-130			
2,6-Dinitrotoluene	47.7	5.00	µg/l	100		47.7	40-130			
Di-n-octyl phthalate	52.0	5.00	µg/l	100		52.0	40-130			
Fluoranthene	47.4	5.00	µg/l	100		47.4	40-130			
Fluorene	43.6	5.00	µg/l	100		43.6	40-130			
Hexachlorobenzene	43.6	5.00	µg/l	100		43.6	40-130			
Hexachlorobutadiene	36.1	5.00	µg/l	100		36.1	40-130			QC-2
Hexachlorocyclopentadiene	29.8	5.00	µg/l	100		29.8	40-130			QC-2
Hexachloroethane	36.8	5.00	µg/l	100		36.8	40-130			QC-2
Indeno (1,2,3-cd) pyrene	49.6	5.00	µg/l	100		49.6	40-130			
Isophorone	45.2	5.00	µg/l	100		45.2	40-130			
2-Methylnaphthalene	40.0	5.00	µg/l	100		40.0	40-130			
2-Methylphenol	43.3	5.00	µg/l	100		43.3	40-130			
3,4-Methylphenol	43.6	10.0	µg/l	100		43.6	40-130			
Naphthalene	40.9	5.00	µg/l	100		40.9	40-130			
2-Nitroaniline	44.2	5.00	µg/l	100		44.2	40-130			
3-Nitroaniline	42.0	5.00	µg/l	100		42.0	40-130			
4-Nitroaniline	51.8	20.0	µg/l	100		51.8	40-130			
Nitrobenzene	45.2	5.00	µg/l	100		45.2	40-130			
2-Nitrophenol	42.9	5.00	µg/l	100		42.9	40-130			
4-Nitrophenol	47.7	20.0	µg/l	100		47.7	40-130			
N-Nitrosodimethylamine	24.6	5.00	µg/l	100		24.6	40-130			QC-2
N-Nitrosodi-n-propylamine	46.5	5.00	µg/l	100		46.5	40-130			
N-Nitrosodiphenylamine	42.3	5.00	µg/l	100		42.3	40-130			
Pentachlorophenol	40.9	20.0	µg/l	100		40.9	40-130			
Phenanthrene	44.2	5.00	µg/l	100		44.2	40-130			
Phenol	40.3	5.00	µg/l	100		40.3	40-130			
Pyrene	42.9	5.00	µg/l	100		42.9	40-130			
Pyridine	41.3	5.00	µg/l	100		41.3	40-130			
1,2,4-Trichlorobenzene	42.3	5.00	µg/l	100		42.3	40-130			
1-Methylnaphthalene	42.0	5.00	µg/l	100		42.0	40-140			
2,4,5-Trichlorophenol	43.7	5.00	µg/l	100		43.7	40-130			
2,4,6-Trichlorophenol	44.3	5.00	µg/l	100		44.3	40-130			
Surrogate: 2-Fluorobiphenyl	*45.1*		µg/l	*100*		*45.1*	*30-130*			
Surrogate: 2-Fluorophenol	*41.0*		µg/l	*100*		*41.0*	*15-110*			
Surrogate: Nitrobenzene-d5	*41.1*		µg/l	*100*		*41.1*	*30-130*			
Surrogate: Phenol-d5	*40.8*		µg/l	*100*		*40.8*	*15-110*			
Surrogate: Terphenyl-dl4	*52.3*		µg/l	*100*		*52.3*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*50.7*		µg/l	*100*		*50.7*	*15-110*			

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

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5100187 - SW846 3005A										
Blank (5100187-BLK1)				Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
Lead	BRL	0.0038	mg/l							
Selenium	BRL	0.0075	mg/l							
Barium	BRL	0.0025	mg/l							
Chromium	BRL	0.0025	mg/l							
Arsenic	BRL	0.0040	mg/l							
Cadmium	BRL	0.0012	mg/l							
Silver	BRL	0.0050	mg/l							
LCS (5100187-BS1)				Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
Selenium	0.0874	0.0075	mg/l	0.100		87.4	85-115			
Lead	0.0899	0.0038	mg/l	0.100		89.9	85-115			
Cadmium	0.0904	0.0012	mg/l	0.100		90.4	85-115			
Silver	0.0484	0.0020	mg/l	0.0500		96.8	85-115			
Arsenic	0.0969	0.0016	mg/l	0.100		96.9	85-115			
Barium	0.0972	0.0025	mg/l	0.100		97.2	85-115			
Chromium	0.0910	0.0025	mg/l	0.100		91.0	85-115			
LCS Dup (5100187-BSD1)				Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
Selenium	0.0953	0.0075	mg/l	0.100		95.3	85-115	2.43	20	
Lead	0.0899	0.0038	mg/l	0.100		89.9	85-115	0.00	20	
Chromium	0.0904	0.0025	mg/l	0.100		90.4	85-115	0.662	20	
Silver	0.0488	0.0020	mg/l	0.0500		97.6	85-115	0.823	20	
Arsenic	0.0972	0.0016	mg/l	0.100		97.2	85-115	0.309	20	
Cadmium	0.0925	0.0012	mg/l	0.100		92.5	85-115	2.30	20	
Barium	0.105	0.0025	mg/l	0.100		105	85-115	7.72	20	

Total Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5100080 - EPA200/SW7000 Series										
Blank (5100080-BLK1)				Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
Mercury	BRL	0.00020	mg/l							
LCS (5100080-BS1)				Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
Mercury	0.00252	0.00010	mg/l	0.00250		101	80-120			
Duplicate (5100080-DUP1)		**Source: SA35036-27**		Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
Mercury	BRL	0.00020	mg/l		0.00004				20	
Matrix Spike (5100080-MS1)		**Source: SA35036-27**		Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
Mercury	0.00186	0.00020	mg/l	0.00250	0.00004	72.8	75-125			QM-07
Matrix Spike Dup (5100080-MSD1)		**Source: SA35036-27**		Prepared: 03-Oct-05 Analyzed: 04-Oct-05						
Mercury	0.00183	0.00020	mg/l	0.00250	0.00004	71.6	75-125	1.63	20	QM-07

General Chemistry Parameters - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5092169 - General Preparation										
Duplicate (5092169-DUP1)	**Source: SA35036-02**			Prepared: 30-Sep-05 Analyzed: 03-Oct-05						
% Solids	92.3		%		91.4			0.980	20	
Batch 5092170 - General Preparation										
Duplicate (5092170-DUP1)	**Source: SA35036-25**			Prepared: 30-Sep-05 Analyzed: 03-Oct-05						
% Solids	94.5		%		93.9			0.637	20	
Duplicate (5092170-DUP2)	**Source: SA35036-26**			Prepared: 30-Sep-05 Analyzed: 03-Oct-05						
% Solids	79.1		%		77.9			1.53	20	

Notes and Definitions

*TPH	Calculated as
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
QC-2	Analyte out of acceptance range in QC spike but no reportable concentration present in sample.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

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

Interpretation of Total Petroleum Hydrocarbon Report

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

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

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

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

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

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

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

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

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

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

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

MADEP MCP ANALYTICAL METHOD REPORT CERTIFICATION FORM

MADEP RTN [1]:					
This form provides certifications for the following Spectrum Analytical, Inc. work order #: SA35036					
Matrix	☐ Groundwater	☐ Soil/Sediment	☐ Drinking Water	☐ Other	
MCP SW-846 Methods Used	☐ 8260B	☐ 8151A	☐ 8330	☐ 6010B	☐ 7470A/1A
	☐ 8270C	☐ 8081A	☐ VPH	☐ 6020	☐ 9014M [2]
	☐ 8082	☐ 8021B	☐ EPH	☐ 7000S [3]	☐ 7196A

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

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

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

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

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

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

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

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

Date: 10/11/2005

SA 3503 (1)

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 3

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☒ Rush TAT - Date Needed: 10-4-05
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS - WAKEFIELD

Invoice To: ECS - AGAWAM
EXTREME PRICING

Project No.: 05-201876.00
Site Name: STANDARD THOMSON
Location: WALTHAM State: MA
Sampler(s): M. ROOD / J. RANEY

Project Mgr.: T. BEEFE

P.O. No.: RQN:

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8=$NaHSO_4$ 9=_____ 10=_____

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

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: ① PCBs (8082) ② PCBs (8082)	QA Reporting Notes:
SA3503C01	C17/2'-4'/W	9.30.05	AM	G	SO	—		1			X	① via ultrasonic extraction Method 3500B/3550B.
02	C18/2'-4'/W							1			X	
03	C18/2'-4'/S							1			X	
04	C18/2'-4'							1			X	② via Peessure Fluid extraction Method 3545A
05	DUP #1							1			X	
06	D19/4'							1			X	
07	D18/4'							1			X	
08	C17/2'-4'							1			X	
09	C18							1			X	
10	DA/2'-4'/E							1			X	

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

State specific reporting standards (if applicable, please list below)

☐ Fax results when available to ( )
☒ E-mail to tkeefe@ecsconsult.com
EDD Format

Condition upon receipt: ☐ Iced ☐ Ambient ☒ C 6 RPC

Relinquished by:	Received by:	Date:	Time:
Leigh M. Raney		9/30/05	1205
		9/30/05	15:33

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* Reportable Detection Limit RRL = Below Reporting Limit

SA35036

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 2 of 3

Special Handling:
☐ Standard TAT - 7 to 10 business days
☒ Rush TAT - Date Needed: 10-4-05
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Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS - WAKEFIELD

Invoice To: ECS - AGAWAM

Project No.: 05-201876

Site Name: STANDARD THOMSON

Location: WALTHAM State: MA

Sampler(s): M. Raus / J. Rauch

Project Mgr.: T. KEEFE

P.O. No.:

RQN: EXTREME

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH 8=$NaHSO_4$ 9=___ 10=___

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

G=Grab C=Composite

Containers: / Analyses:

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	① PCBs (8082)	② PCBs (8082)
SA35036-11	D18/2'-4'/E	9.30.05	AM	G	SO	–		1			x	
12	D18							1				x
13	M10							1				x
14	M10/2'-4'/C							1			x	
15	L9/2'-4'/C							1			x	
16	L9/0'-4'/E							1			x	
17	N8/0'-4'/E							1			x	
18	M8/0'-4'/E							1			x	
19	M9/0'-2'/S							1			x	
20	N8/N8/1'-4'/C							1			x	

QA Reporting Notes: (check if needed)

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

☒ Provide MCP CAM Report

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

① via ultrasonic extraction Method 3500B/3550B

② via Pressure Fluid extraction Method 3545A

☐ Fax results when available to ( )

☒ E-mail to tkeefe@ecsconsult.com

EDD Format

Condition upon receipt: ☐ Iced ☐ Ambient ☒ °C 6 RH

Relinquished by:	Received by:	Date:	Time:
[signature] M. Rauch	[signature]	9/30/05	12:05
[signature]	[signature]	9/30/05	15:33

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* Reportable Detection Limit BRL = Below Reporting Limit

SA15536

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CHAIN OF CUSTODY RECORD

Page 3 of 3

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☑ Rush TAT - Date Needed: 10-4-05
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS - WAKEFIELD

Invoice To: ECS - AGAWAM

Project No.: 05-201876

Site Name: STANDARD THOMSON

Location: WALTHAM State: MA

Project Mgr.: T. KEEFE

P.O. No.: RQN: EXTREME

Sampler(s): J. RANCH / M. ROOD

1=Na2S2O3 2=HCl 3=H2SO4 4=HNO3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=NaHSO4 9= 10=

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

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: PAHs (8082) ①	PCBs (8082)	VOCs (8260B)	SVOCs (8270 C)	RCRA 8 Metals	TPH GC (8100)	QA Reporting Notes: (check if needed)
SA15536-21	MW-MW/4'	9.30.05	AM	G	SO	-		1			X						① via ultrasonic extraction Method 3500B/3550B.
22	L9/4'							1			X						
23	L9/0'-4'/SW							1			X						
24	MB-NB/4'							1			X						
25	MW/0'-4'/E							1			X						
26	MW/2'-4'/C							1			X						
27	FRAC TANK			G	GW	2,3	3	4		1		X	X	X	X	X	
				G													

☐ Fax results when available to ( )

☑ E-mail to tkeefe@ecsconsult.com

EDD Format

Condition upon receipt: ☐ Iced ☐ Ambient ☑ 6 °C

Relinquished by:	Received by:	Date:	Time:
Joseph M. Rand		9/30/05	1205
		9/30/05	1533

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* Reportable Detection Limit RRL = Below Reporting Limit

Report Date:
07-Sep-04 12:49

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

Environmental Compliance Services
607 North Avenue; Suite 11
Wakefield, MA 01881
Attn: Thomas Keefe

Project: Standard Thompson-152 Grove St Waltham, MA
Project #: 05-201876

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SA17189-01	ERM-5M	Ground Water	23-Aug-04 00:00	24-Aug-04 15:45
SA17189-02	ECS-10M	Ground Water	23-Aug-04 00:00	24-Aug-04 15:45
SA17189-03	ECS-10D	Ground Water	23-Aug-04 00:00	24-Aug-04 15:45
SA17189-04	ERM-10S	Ground Water	23-Aug-04 00:00	24-Aug-04 15:45
SA17189-05	ERM-5S	Ground Water	23-Aug-04 00:00	24-Aug-04 15:45
SA17189-06	DUP	Ground Water	23-Aug-04 00:00	24-Aug-04 15:45
SA17189-07	TRIP BLANK	Ground Water	23-Aug-04 00:00	24-Aug-04 15:45

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. All applicable NELAC requirements have been met.
Please note that this report contains 26 pages of analytical data plus Chain of Custody document(s).
This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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

ACCREDITED IN ACCORDANCE WITH nelac

Authorized by:

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

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method indicated. Please refer to our "Quality" webpage at www.spectrum-analytical.com for a full listing of our current certifications.

CASE NARRATIVE:

The data set for work order SA17189 complies with internal QC criteria for the methods performed.

The samples were received @ 1.0 degrees Celsius. An infrared thermometer with a tolerance of +/- 2.0 degrees Celsius was used immediately upon receipt of the samples.

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

Please refer to "Notes and Definitions" for all sample/analyte qualifiers. Qualifiers will note any exceedance levels and items specific to sample analysis/matrix.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ERM-5M	05-201876	Ground Water	23-Aug-04 00:00	24-Aug-04
SA17189-01				

Analyte(s)	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Volatile Organic Compounds									
Volatile Organic Compounds by SW846 8260B		Prepared by method		Volatiles					
Methylene chloride	BRL	5000 ug/l	500	SW846 8260B	31-Aug-04	31-Aug-04	4081769	RLJ	
Naphthalene	BRL	500 ug/l	500	"	"	"	"	"	
n-Propylbenzene	BRL	500 ug/l	500	"	"	"	"	"	
Styrene	BRL	500 ug/l	500	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	BRL	500 ug/l	500	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	BRL	500 ug/l	500	"	"	"	"	"	
Tetrachloroethene	62,600	500 ug/l	500	"	"	"	"	"	
Toluene	BRL	2500 ug/l	500	"	"	"	"	"	
1,2,3-Trichlorobenzene	BRL	500 ug/l	500	"	"	"	"	"	
1,2,4-Trichlorobenzene	BRL	500 ug/l	500	"	"	"	"	"	
1,1,1-Trichloroethane	BRL	500 ug/l	500	"	"	"	"	"	
1,1,2-Trichloroethane	BRL	500 ug/l	500	"	"	"	"	"	
Trichloroethene	3,380	500 ug/l	500	"	"	"	"	"	
Trichlorofluoromethane (Freon 11)	BRL	500 ug/l	500	"	"	"	"	"	
1,2,3-Trichloropropane	BRL	500 ug/l	500	"	"	"	"	"	
1,2,4-Trimethylbenzene	BRL	500 ug/l	500	"	"	"	"	"	
1,3,5-Trimethylbenzene	BRL	500 ug/l	500	"	"	"	"	"	
Vinyl chloride	640	500 ug/l	500	"	"	"	"	"	
m,p-Xylene	BRL	1000 ug/l	500	"	"	"	"	"	
o-Xylene	BRL	500 ug/l	500	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	*86.8*	*70-130 %*		"	"	"	"	"	
Surrogate: Toluene-d8	*103*	*70-130 %*		"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	*105*	*70-130 %*		"	"	"	"	"	
Surrogate: Dibromofluoromethane	*107*	*70-130 %*		"	"	"	"	"	
Total Metals by EPA 6000/7000 Series Methods, Prepared by SW846 3050B									
Iron	BRL	0.425 mg/l	1	SW846 6010B	02-Sep-04	02-Sep-04	4090059	HB	
Manganese	1.44	0.0010 mg/l	1	"	"	"	"	"	
Soluble Metals by EPA 6000/7000 Series Methods									
Iron	0.0439	0.0100 mg/l	1	SW846 6010B	31-Aug-04	31-Aug-04	4081802	HB	
Manganese	1.66	0.0020 mg/l	1	"	"	"	"	"	
Soluble Metals by EPA 200 Series Methods									
Filtration	Field Filtered	N/A	1	EPA 200.7/3005A	31-Aug-04	31-Aug-04	4081796	YP	
General Chemistry Parameters									
Total Organic Carbon	1.98	1.00 mg/l	1	SM 5310B /EPA 415.1	31-Aug-04	31-Aug-04	4090037	AW	

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 4081769 - Volatiles										
Matrix Spike Dup (4081769-MSD1)	**Source: SA17149-04**			Prepared & Analyzed: 31-Aug-04						
Surrogate: 1,2-Dichloroethane-d4	*52.8*		ug/l	*50.0*		*106*	*70-130*			
Surrogate: Dibromofluoromethane	*53.7*		ug/l	*50.0*		*107*	*70-130*			

Total Metals by EPA 6000/7000 Series Methods, Prepared by SW846 3050B - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 4090059 - SW846 3005A										
Blank (4090059-BLK1)				Prepared & Analyzed: 02-Sep-04						
Manganese	0.0006	0.0005	mg/l							QB-01
Iron	BRL	0.425	mg/l							
LCS (4090059-BS1)				Prepared & Analyzed: 02-Sep-04						
Iron	0.115	0.0025	mg/l	0.100		115	85-115			
Manganese	0.0983	0.0005	mg/l	0.100		98.3	85-115			
LCS Dup (4090059-BSD1)				Prepared & Analyzed: 02-Sep-04						
Iron	0.117	0.0025	mg/l	0.100		117	85-115	1.72	20	QM-07
Manganese	0.0965	0.0005	mg/l	0.100		96.5	85-115	1.85	20	
Duplicate (4090059-DUP1)	**Source: SA17189-01**			Prepared & Analyzed: 02-Sep-04						
Manganese	1.41	0.0010	mg/l		1.44			2.11	20	
Iron	BRL	0.425	mg/l		0.407			0.978	20	
Matrix Spike (4090059-MS1)	**Source: SA17189-02**			Prepared & Analyzed: 02-Sep-04						
Manganese	4.50	0.0010	mg/l	0.100	4.48	20.0	75-125			QM-4X
Iron	156	0.425	mg/l	0.100	157	NR	75-125			QM-02
Matrix Spike Dup (4090059-MSD1)	**Source: SA17189-02**			Prepared & Analyzed: 02-Sep-04						
Iron	199	0.425	mg/l	0.100	157	NR	75-125	24.2	20	QM-02
Manganese	4.93	0.0010	mg/l	0.100	4.48	450	75-125	9.12	20	QM-4X

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

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 4081802 - SW846 3005A										
Blank (4081802-BLK1)				Prepared & Analyzed: 31-Aug-04						
Iron	BRL	0.0100	mg/l							
Manganese	BRL	0.0020	mg/l							
LCS (4081802-BS1)				Prepared & Analyzed: 31-Aug-04						
Iron	0.966	0.0100	mg/l	1.00		96.6	85-115			
Manganese	0.964	0.0020	mg/l	1.00		96.4	85-115			
LCS Dup (4081802-BSD1)				Prepared & Analyzed: 31-Aug-04						
Manganese	0.959	0.0020	mg/l	1.00		95.9	85-115	0.520	20	
Iron	0.961	0.0100	mg/l	1.00		96.1	85-115	0.519	20	
Duplicate (4081802-DUP1)	**Source: SA17015-02**			Prepared & Analyzed: 31-Aug-04						
Iron	0.0105	0.0100	mg/l		0.0125			15.8	20	
Manganese	1.08	0.0020	mg/l		1.07			0.930	20	
Matrix Spike (4081802-MS1)	**Source: SA17015-01**			Prepared & Analyzed: 31-Aug-04						
Manganese	2.09	0.0020	mg/l	0.400	1.75	85.0	75-125			
Iron	6.67	0.0100	mg/l	0.400	6.48	47.5	75-125			QM-4X
Matrix Spike (4081802-MS2)	**Source: SA17189-01**			Prepared & Analyzed: 31-Aug-04						
Iron	0.418	0.0100	mg/l	0.400	0.0439	93.5	75-125			
Manganese	1.99	0.0020	mg/l	0.400	1.66	82.5	75-125			
Matrix Spike Dup (4081802-MSD1)	**Source: SA17015-01**			Prepared & Analyzed: 31-Aug-04						
Manganese	2.10	0.0020	mg/l	0.400	1.75	87.5	75-125	0.477	20	
Iron	6.79	0.0100	mg/l	0.400	6.48	77.5	75-125	1.78	20	
Matrix Spike Dup (4081802-MSD2)	**Source: SA17189-01**			Prepared & Analyzed: 31-Aug-04						
Manganese	1.99	0.0020	mg/l	0.400	1.66	82.5	75-125	0.00	20	
Iron	0.418	0.0100	mg/l	0.400	0.0439	93.5	75-125	0.00	20	

Soluble Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 4081796 - General Prep-Metal										
Blank (4081796-BLK1)				Prepared & Analyzed: 31-Aug-04						
Filtration	Lab Filtered	N/A								
Blank (4081796-BLK2)				Prepared & Analyzed: 31-Aug-04						
Filtration	Lab Filtered	N/A								

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

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 4081802 - SW846 3005A										
Blank (4081802-BLK1)				Prepared & Analyzed: 31-Aug-04						
Iron	BRL	0.0100	mg/l							
Manganese	BRL	0.0020	mg/l							
LCS (4081802-BS1)				Prepared & Analyzed: 31-Aug-04						
Iron	0.966	0.0100	mg/l	1.00		96.6	85-115			
Manganese	0.964	0.0020	mg/l	1.00		96.4	85-115			
LCS Dup (4081802-BSD1)				Prepared & Analyzed: 31-Aug-04						
Manganese	0.959	0.0020	mg/l	1.00		95.9	85-115	0.520	20	
Iron	0.961	0.0100	mg/l	1.00		96.1	85-115	0.519	20	
Duplicate (4081802-DUP1)	**Source: SA17015-02**			Prepared & Analyzed: 31-Aug-04						
Iron	0.0105	0.0100	mg/l		0.0123			15.8	20	
Manganese	1.08	0.0020	mg/l		1.07			0.930	20	
Matrix Spike (4081802-MS1)	**Source: SA17015-01**			Prepared & Analyzed: 31-Aug-04						
Manganese	2.09	0.0020	mg/l	0.400	1.75	85.0	75-125			
Iron	6.67	0.0100	mg/l	0.400	6.48	47.5	75-125			QM-4X
Matrix Spike (4081802-MS2)	**Source: SA17189-01**			Prepared & Analyzed: 31-Aug-04						
Iron	0.418	0.0100	mg/l	0.400	0.0439	93.5	75-125			
Manganese	1.99	0.0020	mg/l	0.400	1.66	82.5	75-125			
Matrix Spike Dup (4081802-MSD1)	**Source: SA17015-01**			Prepared & Analyzed: 31-Aug-04						
Manganese	2.10	0.0020	mg/l	0.400	1.75	87.5	75-125	0.477	20	
Iron	6.79	0.0100	mg/l	0.400	6.48	77.5	75-125	1.78	20	
Matrix Spike Dup (4081802-MSD2)	**Source: SA17189-01**			Prepared & Analyzed: 31-Aug-04						
Manganese	1.99	0.0020	mg/l	0.400	1.66	82.5	75-125	0.00	20	
Iron	0.418	0.0100	mg/l	0.400	0.0439	93.5	75-125	0.00	20	

Soluble Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 4081796 - General Prep-Metal										
Blank (4081796-BLK1)				Prepared & Analyzed: 31-Aug-04						
Filtration	Lab Filtered	N/A								
Blank (4081796-BLK2)				Prepared & Analyzed: 31-Aug-04						
Filtration	Lab Filtered	N/A								

Notes and Definitions

QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
OC-1	Analyte out of acceptance range.
QB-01	The method blank contains analyte at a concentration above the MRL; however, concentration is less than 10% of the sample result, which is negligible according to method criteria.
LF	Lab Filtered
FF	Field Filtered
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

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

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

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

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

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

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

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

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

Validated by:
Hanibal C. Tayeh, Ph.D.
Dan DeAlmeida

The following outlines the condition of all VPH samples contained within this report upon laboratory receipt.

Matrix	☐ Aqueous ☐ Soil ☐ Sediment ☐ Other		
Containers	☐ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous (acid-preserved)	☐ N/A ☐ pH≤2 ☐ pH>2 Comment	
	Soil or Sediment	☐ N/A ☐ Samples not received in Methanol or air-tight container	ml Methanol/g soil ☐ 1:1 +/-25% ☐ Other:
		☐ Samples received in Methanol: ☐ covering soil/sediment ☐ not covering soil/sediment	
		☐ Samples received in air-tight container:	
Temperature	☐ Received on ice ☐ Received at 4 ± 2 °C ☐ Other: °C		

Were all QA/QC procedures followed as required by the VPH method? Yes_____ No _____

Were any significant modifications made to the VPH method as specified in section 11.3? No *see below

Were all performance/acceptance standards for required QA/QC procedures achieved? Yes_____ No_____

* Yes, if PID and FID surrogate recoveries are listed as n/a, then that sample was run via GCMS using all QC criteria specified in the method

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

Authorized by:

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

MADEP MCP ANALYTICAL METHOD REPORT CERTIFICATION FORM

MADEP RTN [1]:					
This form provides certifications for the following Spectrum Analytical, Inc. work order #: SA17189					
Matrix	☐ Groundwater	☐ Soil/Sediment	☐ Drinking Water	☐ Other	
MCP SW-846 Methods Used	☐ 8260B	☐ 8151A	☐ 8330	☐ 6010B	☐ 7470A/1A
	☐ 8270C	☐ 8081A	☐ VPH	☐ 6020	☐ 9014M [2]
	☐ 8082	☐ 8021B	☐ EPH	☐ 7000S [3]	☐ 7196A

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

	An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status	
A	Were all samples received by the laboratory in a condition consistent with that described on the Chain of Custody documentation for the data set?	☐ Yes ☐ No
B	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	☐ Yes ☐ No
C	Does the data included in this report meet all the analytical requirements for "Presumptive Certainty", as described in Section 2.0 (a), (b), (c) and (d) of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of	☐ Yes ☐ No
D	***VPH and EPH methods only***: Was the VPH or EPH method conducted without significant modifications (see Section 11.3 of respective methods)?	☐ Yes ☐ No
	A response to questions E and F below is required for "Presumptive Certainty" status	
E	Were all analytical QC performance standards and recommendations for the specified methods achieved?	☐ Yes ☐ No
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	☐ Yes ☐ No
	All negative responses are addressed in a case narrative on the cover page of this report.	

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

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

Date: 9/7/2004