Analytical Resources, Incorporated
Analytical Chemists and Consultants

AMEC E&E
Received
SEP 20 2011
SEATTLE OFFICE

September 15, 2011

John Long
AMEC/Geomatrix
600 University Suite 1020
Seattle, WA 98101

RE: Client Project: Former Rhone Poulenc- 8769 Shoreline Investigation
ARI Job Number: TL08

Dear John:

Please find enclosed the final data package for samples for the project referenced above. ARI received twelve soil samples, one water sample and a trip blank on September 6, 2011.

Please refer to the case narrative for details on the analyses of these samples.

A copy of this package will be kept on file at ARI. If you have questions or problems, please feel free to contact me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Kelly Bottem
Client Services Manager
206/695-6211
kellyb@arilabs.com

Enclosures

cc: file TL08

KFB/kfb

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Documentation

ARI Job ID: TL08

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: TL08	Turn-around Requested: STANDARD
ARI Client Company: AMEC	Phone: (206) 342-1773
Client Contact: JOHN LONG / NIK BACHER	
Client Project Name: FRP 2011 SHORELINE INVESTIGATION	
Client Project #: 8769	Samplers: TREVOR LOUVIERE, DEVIN O'REILLY, NIK BACHER

Page: 2 of 3

Date: 9/6/11 | Ice Present? Y

No. of Coolers: 1 | Cooler Temps: 0.8

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Metals Total 6010B	Mercury Total 7471A	VOCs 8260C	pH 9045D	Mercury 7470A	pH 9A 150.1			Notes/Comments
FRP-090611-011	9/6/11	1120	SOIL	4	X	X	X	X					
FRP-090611-012		1125			X	X	X	X					
FRP-090611-013		1130			X	X	X	X					
FRP-090611-014		1135			X	X	X	X					
FRP-090611-015		1140			X	X	X	X					
FRP-090611-016		1145			X	X	X	X					
FRP-090611-017		1150			X	X	X	X					
FRP-090611-018		1155			X	X	X	X					
FRP-090611-019		1200			X	X	X	X					
FRP-090611-020		1205			X	X	X	X					

Comments/Special Instructions
METALS INCLUDE: Al, As, Cd, Cr, Cu, Pb, Ni, Se, Th, V, Zn
H_2O VOCs NOT PRESERVED

Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)	(Signature)	(Signature)	(Signature)
Printed Name: Trevor Louviere	Printed Name: Jennifer Mills	Printed Name:	Printed Name:
Company: AMEC GMX	Company: ARI	Company:	Company:
Date & Time: 9/6/11 1545	Date & Time: 9/6/11 1545	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number: 7106
Turn-around Requested: STANDARD
Page: 3 of 3
ARI Client Company: AMEC
Phone: (706)342-1773
Date: 9/6/11
Ice Present? Y
Client Contact: JOHN LONG | NIK BACHER
No. of Coolers: 1
Cooler Temps: 3.8 C
Client Project Name: FRP 2011 SHORELINE INVESTIGATION
Client Project #: 8769
Samplers: TREVOR LOUVIERE, DEVIN O'REILLY, NIK BACHER

Analysis Requested

Sample ID	Date	Time	Matrix	No. Containers	METALS (TOTAL) 6010B	MERCURY (TOTAL) 7471A	VOCs 8260C	PH 9045D	MERCURY (TOTAL) 7470A	PH EPA 150.1			Notes/Comments
FRP-090611-021	9/6/11	1210	SOIL	4	X	X	X	X					
FRP-090611-022	↓	1215	SOIL	4	X	X	X	X					
FRP-090611-023	↓	1455	H_2O	5	X		X		X	X			
TRIP BLANK	↓		H_2O	2			X						

Comments/Special Instructions
METALS INCLUDE: Al, As, Ca, Cr, Cu, Pb, Ni, Se, Th, V, Zn
H_2O VOAs NOT PRESERVED

Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
Printed Name: Trevor Louviere	Printed Name: Jennifer Milsap	Printed Name:	Printed Name:
Company: AMEC GMX	Company: ARI	Company:	Company:
Date & Time: 9/6/11 1545	Date & Time: 9/6/11 1545	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: AMEC

Project Name: FRP 2011 Shoreline Investigation

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other: _____

Assigned ARI Job No: TL08

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)..... 0.8 ___ ___ ___

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90941669

Cooler Accepted by: JM Date: 9/6/11 Time: 1545

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ... (Bubble Wrap) (Wet Ice) Gel Packs Baggies Foam Block Paper Other: Cardboard			
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)..	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	YES	(NO)
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	TS (NA)	8-25-11	

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: ~~8-25-11~~

Samples Logged by: TS Date: 9-7-11 Time: 1405

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions: Trip blanks Not labled. According to bottle order they were made 8-25-11. Attached copy to paper work. Trip blank 1 "pb11"

By: TS Date: 9-7-11

Small → "sm"	
Peabubbles → "pb"	
Large → "lg"	
Headspace → "hs"	

PRESERVATION VERIFICATION 09/07/11
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **TL08**

PC: Kelly
VTSR: 09/06/11

Inquiry Number: NONE
Analysis Requested: 09/07/11
Contact: Long, John
Client: AMEC Geomatrix
Logged by: TS
Sample Set Used: Yes-490
Validatable Package: No
Deliverables:

Project #: 8769
Project: FRP 2011 Shoreline Investigation
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	AK102 <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
11-19405 **TL08M**	FRP-090611-023						TOT Pass															

TL08:00006

Checked By TS Date 9.7.4

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: TL08

Case Narrative

AMEC/Geomatrix
Client Project: Former Rhone Poulenc- 8769 Shoreline Investigation
ARI Job Number: TL08
September 15, 2011

Sample Receipt:

Please find enclosed the original chain of custody (COC) record and analytical results for the project referenced above. Analytical Resources, Inc. accepted twelve soil samples, one water sample and a trip blank in good condition on 9/6/11. Please see the enclosed Cooler Receipt Form for further details.

Volatiles by 8260C

The water sample was analyzed on 9/8/11 - within the method recommended holding time and the soil samples were analyzed on 9/9/11 and 9/12/11 - within the method recommended holding time.

Initial calibration(s): All analytes of interest were within method acceptance criteria.

Continuing calibration(s): The water 9/8/11 VOCs CCAL is out of control low for acrolein. All associated samples that contain this analyte have been flagged with a "Q" qualifier.

The soil 9/9/11 VOCs CCAL is out of control for 2-chloroethylvinylether (high), chloroethane (high), and dichlorodifluoromethane (low). All associated samples that contain these analytes have been flagged with a "Q" qualifier.

The soil 9/12/11 VOCs CCAL is out of control for 2-chloroethylvinylether (high), bromomethane (low), and dichlorodifluoromethane (low). All associated samples that contain these analytes have been flagged with a "Q" qualifier.

LCS/LCSD/RPDs: The 9/9/11 and 9/12/11 soil LCS(s) and LCSD(s) are out of control high for 2-chloroethylvinylether.

Surrogates: All surrogate recoveries were within control limits.

Method Blank (s): The soil method blank on 9/9/11 contained methylene chloride, acetone and 1,2-dichlorobenzene. All associated samples that contain these analytes have been flagged with a "B" qualifier.

The soil method blank on 9/12/11 contained acetone. All associated samples that contain this analyte have been flagged with a "B" qualifier.

Samples: There were no anomalies associated with these samples.

AMEC/Geomatrix
Client Project: Former Rhone Poulenc- 8769 Shoreline Investigation
ARI Job Number: TL08
September 15, 2011

Metals Analysis (6010, 200.8 and 7000 series)

The samples were digested on 9/8/11 - within the method recommended holding time and analyzed on 9/8/11, 9/9/11, and 9/13/11.

Initial calibration (s): All analytes of interest were within method acceptance criteria.

Continuing calibration (s): analytes of interest were within method acceptance criteria.

Internal Standards: Internal standard areas were in control.

LCS/LCSD/RPDs: Are in control.

Method Blank (s): The method blank was free of contamination.

Samples: There were no anomalies associated with these samples.

Matrix spike/ Sample duplicate/ RPD(s): The RPD for arsenic is outside of the +/-20% control limit for sample FRP-090611-011.

pH by method 150.1 and 9045:

The samples were analyzed on 9/6/11 and 9/8/11 within method recommended holding time.

Initial calibration (s): All analytes of interest were within method acceptance criteria.

LCS/LCSD/RPDs: Are in control.

Sample duplicate/ RPD(s): Are in control.

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: TL08
Client: AMEC Geomatrix
Project Event: 8769
Project Name: FRP 2011 Shoreline Investigation

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	FRP-090611-011	TL08A	11-19393	Soil	09/06/11 11:20	09/06/11 15:45
2.	FRP-090611-012	TL08B	11-19394	Soil	09/06/11 11:25	09/06/11 15:45
3.	FRP-090611-013	TL08C	11-19395	Soil	09/06/11 11:30	09/06/11 15:45
4.	FRP-090611-014	TL08D	11-19396	Soil	09/06/11 11:35	09/06/11 15:45
5.	FRP-090611-015	TL08E	11-19397	Soil	09/06/11 11:40	09/06/11 15:45
6.	FRP-090611-016	TL08F	11-19398	Soil	09/06/11 11:45	09/06/11 15:45
7.	FRP-090611-017	TL08G	11-19399	Soil	09/06/11 11:50	09/06/11 15:45
8.	FRP-090611-018	TL08H	11-19400	Soil	09/06/11 11:55	09/06/11 15:45
9.	FRP-090611-019	TL08I	11-19401	Soil	09/06/11 12:00	09/06/11 15:45
10.	FRP-090611-020	TL08J	11-19402	Soil	09/06/11 12:05	09/06/11 15:45
11.	FRP-090611-021	TL08K	11-19403	Soil	09/06/11 12:10	09/06/11 15:45
12.	FRP-090611-022	TL08L	11-19404	Soil	09/06/11 12:15	09/06/11 15:45
13.	FRP-090611-023	TL08M	11-19405	Water	09/06/11 14:55	09/06/11 15:45
14.	Trip Blanks	TL08N	11-19406	Water	09/06/11	09/06/11 15:45

Printed 09/07/11

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

U Indicates that the target analyte was not detected at the reported concentration

* Duplicate RPD is not within established control limits

B Reported value is less than the CRDL but ≥ the Reporting Limit

N Matrix Spike recovery not within established control limits

NA Not Applicable, analyte not spiked

H The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U Indicates that the target analyte was not detected at the reported concentration

* Flagged value is not within established control limits

B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J Estimated concentration when the value is less than ARI's established reporting limits

D The spiked compound was not detected due to sample extract dilution

E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

TL08 : 00011

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

TL08 : 00012

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

TL08 : 00013

SURR SOLUTIONS

LABEL	SOLN ID	TEST	CONC. UG/ML	SOLVENT	EXP.
A	1889-3	ABN	100/150	MEOH	03/01/12
B	1874-2	SIM PNA	15/75	ACETONE	10/05/11
C	NA	SIM ABN	25/37.5	MEOH	NA
D	1887-1	LOW PCB	0.2	ACETONE	12/16/11
E	1771-3	HERB	62.5	MEOH	10/06/11
F	1791-3	PCP	12.5	ACETONE	12/09/11
G	1863-2	d8-DIOXANE	100	MEOH	11/19/11
H	1847-2	OP-PEST	25	ACETONE	03/23/12
I	1868-3	LOW S. PNA	1.5	ACETONE	10/05/11
J	1787-2	TBT-PORE	0.125	MECL2	11/27/11
K	1795-2	MED PCB	20	ACETONE	12/16/11
L	1862-3	TBT	2.5	MECL2	11/27/11
M	1888-4	EPH	1500	MECL2	04/04/12
N	1876-3	PCB	2	ACETONE	12/16/11
O	1879-2	TPH	450	MECL2	02/04/12
P	1868-1	HCID	2250	MECL2	02/04/12
Q	NA	EDB	1	MEOH	NA
R	1886-3	RESIN ACID	250	ACETONE	02/19/12
S	1864-1	PBDE	.5	MEOH	05/21/12
T	1884-2	ALKYL PNA	10	MEOH	07/15/12
U	NA	CONGENER	2.5	ACETONE	NA
V	1791-4	LOW PCP	1.25	ACETONE	12/09/11

TL08:00014

LCS SOLUTIONS

LABL	SOLN ID	TEST	CONC. UG/ML	SOLVENT	EXP.
1	1888-2	PCB 1660	20	ACETONE	08/30/12
2#	NA	BCOC PEST	10	ACETONE	NA
3	1885-1	PEST	01/02/10	ACETONE	12/15/11
4	1885-2	LOW PEST	.1/.2/1	ACETONE	12/15/11
5	1779-1	EPH	1500	MECL2	11/11/11
6	1791-5	PCP	12.5/125	ACETONE	12/10/11
7	1888-1	ABN	100	MEOH	08/30/12
8	1785-3	TBT	2.5	MECL2	11/27/11
9	1786-3	PORE TBT	.125/.25	MECL2	11/27/11
10					
11	1860-4	TPHD	15000	ACETONE	05/12/12
12					
13	1838-4	LOW PCB	2	ACETONE	01/31/12
14					
15	1814-2	SIM PNA	15/75	MEOH	01/04/12
16	1879-3	1,4-DIOXANE	100	MEOH	02/05/12
17	1869-4	1248 PCB	10	ACETONE	06/14/12
18	1814-3	LOW SIM PNA	1.5	ACETONE	01/04/12
19	1873-2	AK103	7500	ACETONE	01/02/12
20	1886-4	PNA	100	ACETONE	01/07/12
21	1874-3	SKY/BHT	100	MEOH	01/14/12
22	1864-3	HERB	02 to 2500	MEOH	12/03/11
23	1887-2	EXTRA PNA	15	ACETONE	08/25/12
24					
25#	NA	DIPHENYL	100	MEOH	NA
26	1869-1	OP-PEST	25	MEOH	10/01/11
27	NA	STEROLS	200	MEOH	NA
28#	1807-1	ADD. PEST	2	ACETONE	08/31/11
29#	NA	DECANES	100	MEOH	NA

TL08 : 00015

LCS SOLUTIONS

30	NA	EDB/DBCP	0.2	MEOH	NA
31	1835-2	TERPINEOL	100	MEOH	09/02/11
32	1876-1	GUAIACOL	50-200	ACETONE	01/05/12
33	NA	RETENE	100	MEOH	NA
34	1867-3	CONGENERS	0.5	ACETONE	03/14/12
35	1875-3	ALKYL PNA A	10	MEOH	07/18/12
36	NA	ALKYL PNA B	10	MEOH	NA
37	1773-1	CAR/PERY	100	ACETONE	10/14/11
38	1872-2	ABN ACID	200-450	MEOH	12/29/11
39	1853-4	BENZIDINE	500	MEOH	04/30/12
40	1851-3	PBDE	0.5	MEOH	04/22/12
50	1757-4	FULL RESIN	250	ACETONE	08/14/11
51	1772-1	DDTS	0.01	ACETONE	04/24/11
52	NA	1232 PCB	20	ACETONE	NA
53	1852-2	DALAPON	50	MEOH	12/03/11
54	1753-1	T-CHLORDANE	10	ACETONE	07/21/11
55	1753-2	TOXAPHENE	50	ACETONE	07/21/11
56	1874-1	ABN BASE	50-200	MEOH	01/05/12
#=PROJECT SPECIFIC SOLUTION					
*=REVERIFIED SOLUTION					

TL08 : 00016

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Spike Recovery Control Limits for Analysis of Aqueous Samples Volatile Organic Compounds (VOA) EPA SW-846 Methods 8260C 10 mL Purge Volume [1,6]

Effective: 8/30/2010

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

	ARI Control Limits	ARI ME Control Limits[2]
LCS Spike Recovery [5]		
Dichlorodifluoromethane	69 - 122	60 - 131
Chloromethane	76 - **120**	69 - 123
Vinyl Chloride	**80 - 120**	75 - 123
Bromomethane	71 - 120	63 - 129
Chloroethane	**80 - 120**	75 - 124
1,1,2-Trichloro-1,2,2-trifluoroethane	**80** - 121	76 - 128
Acrolein	69 - 126	60 - 136
Acetone	71 - **120**	64 - **120**
1,1-Dichloroethene	**80 - 120**	79 - 122
Bromoethane	**80 - 120**	80 - 121
Methyl Iodide	76 - 120	69 - 127
Methylene Chloride	**80 - 120**	77 - **120**
Acrylonitrile	79 - **120**	74 - **120**
Methyl tert-Butyl Ether	**80 - 120**	77 - 121
Carbon Disulfide	**80 - 120**	78 - 121
trans-1,2-Dichloroethene	**80 - 120**	**80 - 120**
Vinyl Acetate	**80 - 120**	76 - **120**
1,1-Dichloroethane	**80 - 120**	**80 - 120**
2-Butanone	**80 - 120**	76 - **120**
2,2-Dichloropropane	**80 - 120**	77 - 120
cis-1,2-Dichloroethene	**80 - 120**	**80 - 120**
Chloroform	**80 - 120**	**80 - 120**
Bromodichloromethane	**80 - 120**	**80 - 120**
1,1,1-Trichloroethane	**80 - 120**	**80 - 120**
1,1-Dichloropropene	**80 - 120**	**80 - 120**
Carbon Tetrachloride	**80 - 120**	**80** - 123
1,2-Dichloroethane	**80 - 120**	**80 - 120**
Benzene	**80 - 120**	**80 - 120**
Trichloroethene	**80 - 120**	**80** - 120
1,2-Dichloropropane	**80 - 120**	**80 - 120**
Bromochloromethane	**80 - 120**	**80 - 120**
Dibromomethane	**80 - 120**	**80 - 120**
2-Chloroethylvinylether	**80 - 120**	75 - **120**
4-Methyl-2-Pentanone	**80 - 120**	78 - **120**
cis-1,3-Dichloropropene	**80 - 120**	**80 - 120**
Toluene	**80 - 120**	**80 - 120**
trans-1,3-Dichloropropene	**80 - 120**	**80 - 120**

TL08 : 00017

2-Hexanone	80 - 120	75 - 120
1,1,2-Trichloroethane	80 - 120	80 - 120
1,3-Dichloropropane	80 - 120	80 - 120
Tetrachloroethene	80 - 120	80 - 120
Dibromochloromethane	80 - 120	80 - 120
Ethylene Dibromide	80 - 120	80 - 120
Chlorobenzene	80 - 120	80 - 120
Ethylbenzene	80 - 120	80 - 121
1,1,2,2-Tetrachloroethane	80 - 120	78 - 120
m,p-Xylene	80 - 120	80 - 120
o-Xylene	80 - 120	80 - 120
Styrene	80 - 120	80 - 122
Trichlorofluoromethane	80 - 120	78 123
Isopropylbenzene	80 - 120	79 - 121
Bromoform	80 - 120	79 - 120
1,1,1,2-Tetrachloroethane	80 - 120	80 - 120
1,2,3-Trichloropropane	80 - 120	77 - 120
trans-1,4-Dichloro-2-butene	74 - 122	66 - 130
n-Propylbenzene	80 - 120	80 - 120
Bromobenzene	80 - 120	78 - 120
1,3,5-Trimethylbenzene	80 - 120	80 - 120
2-Chlorotoluene	80 - 120	80 - 120
4-Chlorotoluene	80 - 120	80 - 120
tert-Butylbenzene	80 - 120	80 - 121
1,2,4-Trimethylbenzene	80 - 120	80 - 120
sec-Butylbenzene	80 - 120	80 - 121
4-Isopropyltoluene	80 - 120	80 - 123
1,3-Dichlorobenzene	80 - 120	80 - 120
1,4-Dichlorobenzene	80 - 120	80 - 120
n-Butylbenzene	80 - 120	80 - 122
1,2-Dichlorobenzene	80 - 120	80 - 120
1,2-Dibromo-3-chloropropane	76 - 120	71 - 120
1,2,4-Trichlorobenzene	77 - 120	71 - 120
Hexachloro-1,3-butadiene	77 - 120	70 - 127
Naphthalene	76 - 120	70 - 120
1,2,3-Trichlorobenzene	79 - 120	74 - 120
MB/LCS Surrogate Recovery		
Dibromofluoromethane	80 - 120	(3)
d4-1,2-Dichloroethane	80 - 120	(3)
d8-Toluene	80 - 120	(3)
4-Bromofluorobenzene	80 - 120	(3)
d4-1,2-Dichlorobenzene	80 - 120	(3)
Sample Surrogate Recovery		
Dibromofluoromethane	80 - 120	(3)

TL88 : 000615

d4-1,2-Dichloroethane	**80 - 120**	(3)
d8-Toluene	**80 - 120**	(3)
4-Bromofluorobenzene	**80 - 120**	(3)
D4-1,2-Dichlorobenzene	**80 - 120**	(3)

(1) Control Limits calculated using all data generated 7/1/09 through 6/30/10.
(2) **ME** = A **marginal exceedance** defined in the NELAC Standard[4] as beyond the LCS-CL but still within the ME limits. ME limits are between 3 and 4 standard deviations around the mean. A maximum of four marginal exceedances are acceptable. Five or more marginal exceedances require corrective action.
(3) Marginal Exceedances not allowed for surrogate standards. A corrective action is required for each surrogate recovery outside of the control limit range.
(4) **2003 NELAC Standard (EPA/600/R-04/003), July 2003**, Chapter 5, pages 251-252.
(5) Laboratory Control Sample (LCS) spike recovery control limits also used as advisory control limits for sample matrix spike (MS) analyzes. MS recovery values are advisory and not used to assess the acceptability of an analytical batch.
(6) Highlighted control limits (**bold font**) are adjusted from the calculated values as follows:

a) ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit.

b) Control limits for analyzes with no separate preparation procedure are adjusted to reflect the minimum uncertainty in the calibration of the instrument allowed by the referenced analytical method.

TL08 : 00019

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Spike Recovery Control Limits for Analysis of Solid Samples
Volatile Organic Compounds (VOA) EPA SW-846 Methods 8260C
5 mL Purge Volume [7]

Effective:5/18/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

	Low Level [1]	Low Level ME Limits [3]	Medium Level [2]	Medium Level ME Limits [3]
LCS Spike Recovery [8]				
Dichlorodifluoromethane	53 - 148	37 - 164	25 - 128	**10** - 145
Chloromethane	64 - 125	54 - 135	55 - 121	44 - 132
Vinyl Chloride	63 - 137	51 - 149	66 - 123	57 - 133
Bromomethane	57 - 136	44 - 149	40 - 154	21 - 173
Chloroethane	64 - 131	53 - 142	72 - 128	63 - 137
Trichlorofluoromethane	69 - 132	59 - 143	69 - 135	58 - 146
Acrolein	54 - 137	40 - 151	39 - 135	23 - 151
1,1,2-Trichloro-1,2,2-trifluoroethane	74 - 130	65 - 139	65 - 139	53 - 151
Acetone	60 - 131	48 - 143	55 - 130	43 - 143
1,1-Dichloroethene	75 - 126	67 - 135	73 - 133	63 - 143
Bromoethane	76 - 126	68 - 134	74 - 133	64 - 143
Methyl Iodide	65 - 139	53 - 151	47 - 155	29 - 173
Methylene Chloride	70 - 123	61 - 132	**80** - **120**	75 - 122
Acrylonitrile	67 - 125	57 - 135	62 - 129	51 - 140
Methyl tert-Butyl Ether	70 - 120	62 - 128	69 - 128	59 - 138
Carbon Disulfide	71 - 129	61 - 139	64 - 135	52 - 147
trans-1,2-Dichloroethene	80 - **120**	74 - 126	78 - 125	70 - 133
Vinyl Acetate	60 - 136	47 - 149	66 - 132	55 - 143
1,1-Dichloroethane	**80** - **120**	75 - 124	77 - 124	69 132
2-Butanone	70 - **120**	62 - 127	65 - 126	55 - 136
2,2-Dichloropropane	74 - 123	66 - 131	75 - 127	66 - 136
cis-1,2-Dichloroethene	**80** - **120**	76 - 123	**80** - 125	74 - 132
Chloroform	80 - **120**	74 - 123	**80** - 124	73 - 131
Bromodichloromethane	77 - 121	70 - 128	78 - 130	69 - 139
1,1,1-Trichloroethane	77 - 121	70 - 128	76 - 130	67 - 139
1,1-Dichloropropene	**80** - **120**	77 - 123	77 - 131	68 - 140
Carbon Tetrachloride	77 - 122	70 - 130	74 - 129	65 - 138
1,2-Dichloroethane	76 - **120**	69 - 123	73 - 123	65 - 131
Benzene	**80** - 120	80 - 126	**80** - **120**	75 - 130
Trichloroethene	**80** - **120**	77 - 123	**80** - 125	75 - 132
1,2-Dichloropropane	**80** - **120**	76 - 120	**80** - 122	74 - 129
Bromochloromethane	80 - 120	73 - 127	**80** - 127	73 - 135
Dibromomethane	80 - **120**	74 - 121	**80** - 121	76 - 128
2-Chloroethylvinylether	**10** - 191	**10** - 222	61 - 128	50 - 139

TL08 : 00026

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Spike Recovery Control Limits for Analysis of Solid Samples
Volatile Organic Compounds (VOA) EPA SW-846 Methods 8260C
5 mL Purge Volume [7]

Effective:5/18/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

	Low Level [1]	Low Level ME Limits [3]	Medium Level [2]	Medium Level ME Limits [3]
4-Methyl-2-Pentanone	67 - **120**	59 - 125	80 - 123	73 - 130
cis-1,3-Dichloropropene	74 - **120**	67 - 125	80 - 122	73 - 129
Toluene	**80** - **120**	79 - **120**	**80** - 122	**80** - 127
trans-1,3-Dichloropropene	65 - **120**	57 - 125	**80** - 123	79 - 129
2-Hexanone	65 - 130	54 - 141	58 - 129	46 - 141
1,1,2-Trichloroethane	**80** - **120**	75 - 122	**80** - 120	77 - 126
1,3-Dichloropropane	80 - **120**	74 - 122	**80** - 120	76 - 126
Tetrachloroethene	**80** - 121	79 - 127	**80** - 130	73 - 138
Dibromochloromethane	64 - **120**	55 - 128	77 - 120	70 - 127
Ethylene Dibromide	75 - **120**	68 - 124	**80** - **120**	**80** - 120
Chlorobenzene	**80** - **120**	82 - 120	**80** - 121	80 - 127
Ethylbenzene	**80** - 127	80 - 134	**80** - 126	**80** - 132
1,1,2,2-Tetrachloroethane	74 - 120	66 - 128	79 - **120**	73 - 123
m,p-Xylene	**80** - 125	**80** - 131	**80** - 130	**80** - 137
o-Xylene	78 - **120**	71 - 126	**80** - 124	**80** - 130
Styrene	**80** - 123	78 - 130	**80** - 132	77 - 140
Isopropylbenzene	**80** - 127	84 - 133	**80** - 130	**80** - 137
Bromoform	60 - **120**	50 - 128	68 - 129	58 - 139
1,1,1,2-Tetrachloroethane	69 - 121	60 - 130	**80** - 126	76 - 133
1,2,3-Trichloropropane	72 - 121	64 - 129	77 - **120**	71 - 121
trans-1,4-Dichloro-2-butene	65 - 126	55 - 136	66 - 127	56 - 137
n-Propylbenzene	**80** - 132	**80** - 139	**80** - 132	77 - 140
Bromobenzene	**80** - **120**	78 - 122	**80** - 121	80 - 127
1,3,5-Trimethylbenzene	**80** - 125	**80** - 131	78 - 137	68 - 147
2-Chlorotoluene	**80** - 125	77 - 132	**80** - 123	**80** - 129
4-Chlorotoluene	**80** - 127	77 - 134	**80** - 130	74 - 138
tert-Butylbenzene	87 - 122	**80** - 128	**80** - 133	78 - 141
1,2,4-Trimethylbenzene	**80** - 126	**80** - 132	**80** - 131	79 - 139
sec-Butylbenzene	**80** - 134	80 - 142	**80** - 136	76 - 146
4-Isopropyltoluene	**80** - 131	**80** - 138	**80** - 141	71 - 151
1,3-Dichlorobenzene	**80** - 120	**80** - 126	**80** 126	77 - 133
1,4-Dichlorobenzene	**80** - 120	79 - 126	**80** 121	77 - 127
n-Butylbenzene	**80** - 138	**80** - 146	**80** - 138	77 - 147
1,2-Dichlorobenzene	**80** - **120**	78 - 122	**80** - **120**	**80** - 121
1,2-Dibromo-3-chloropropane	59 - 120	49 - 130	67 - 121	58 - 130
1,2,4-Trichlorobenzene	78 - 130	69 - 139	**80** - 133	72 - 142

TL08 : 00021

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Spike Recovery Control Limits for Analysis of Solid Samples Volatile Organic Compounds (VOA) EPA SW-846 Methods 8260C 5 mL Purge Volume [7]

Effective:5/18/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

	Low Level [1]	Low Level ME Limits [3]	Medium Level [2]	Medium Level ME Limits [3]
Hexachloro-1,3-butadiene	76 - 129	67 - 138	62 - 148	48 - 162
Naphthalene	66 - **120**	58 - 126	74 - 133	64 - 143
1,2,3-Trichlorobenzene	73 - 123	65 - 131	80 - 126	72 - 134
MB/LCS Surrogate Recovery				
Dibromofluoromethane	**80 - 120**	(4)	**80 - 120**	(4)
d4-1,2-Dichloroethane	79 - 121	(4)	76 - **120**	(4)
d8-Toluene	**80 - 120**	(4)	**80 - 120**	(4)
4-Bromofluorobenzene	**80 - 120**	(4)	**80 - 120**	(4)
d4-1,2-Dichlorobenzene	**80 - 120**	(4)	**80 - 120**	(4)
Sample Surrogate Recovery				
Dibromofluoromethane	30 - 160[6]	(4)	30 - 160[6]	(4)
d4-1,2-Dichloroethane	75 - 152	(4)	69 - **120**	(4)
d8-Toluene	82 - 115	(4)	**80 - 120**	(4)
4-Bromofluorobenzene	64 - **120**	(4)	76 - 128	(4)
d4-1,2-Dichlorobenzene	**80 - 120**	(4)	**80 - 120**	(4)

(1) Control Limits calculated using all data generated 1/1/08 through 12/31/08.
(2) Control Limits calculated using all data generated 3/1/07 through 11/15/07.
(3) **ME** = A **marginal exceedance** defined in the NELAC Standard[5] as beyond the LCS-CL but still within the ME limits. ME limits are between 3 and 4 standard deviations around the mean. A maximum of four marginal exceedances are acceptable. Five or more marginal exceedances require corrective action.
(4) Marginal Exceedances not allowed for surrogate standards
(5) **2003 NELAC Standard (EPA/600/R-04/003), July 2003**, Chapter 5, pages 251-252.
(6) 30 – 160 are default, advisory control limits used when there is insufficient data to calculate historic control limits. **DO NOT** use these limits as the sole reason to reject the data from a batch of analyses
(7) Highlighted control limits (**bold font**) are adjusted from the calculated values as follows:
a) ARI does not use control limits < 10
b) Control limits for analyzes with no separate preparation procedure are adjusted to reflect the minimum uncertainty in the calibration of the instrument allowed by the referenced analytical method.
(8) Laboratory Control Sample (LCS) spike recovery control limits also used as advisory control limits for sample matrix spike (MS) analyzes. MS recovery values are advisory and not used to assess the acceptability of an analytical batch.

TL08:00022

Analytical Resources,Incorporated
Analytical Chemists and Consultants

Summary of Laboratory Control Limits Metals Analyses (All Methods & Sample Matrices)

Effective 5/1/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

Element	Matrix Spike Recovery	LCS Recovery	Replicate RPD
Aluminum	75 - 125	80 - 120	≤ 20%
Antimony	75 - 125	80 - 120	≤ 20%
Arsenic	75 - 125	80 - 120	≤ 20%
Barium	75 - 125	80 - 120	≤ 20%
Beryllium	75 - 125	80 - 120	≤ 20%
Boron	75 - 125	80 - 120	≤ 20%
Cadmium	75 - 125	80 - 120	≤ 20%
Calcium	75 - 125	80 - 120	≤ 20%
Chromium	75 - 125	80 - 120	≤ 20%
Cobalt	75 - 125	80 - 120	≤ 20%
Copper	75 - 125	80 - 120	≤ 20%
Iron	75 - 125	80 - 120	≤ 20%
Lead	75 - 125	80 - 120	≤ 20%
Magnesium	75 - 125	80 - 120	≤ 20%
Manganese	75 - 125	80 - 120	≤ 20%
Mercury	75 - 125	80 - 120	≤ 20%
Nickel	75 - 125	80 - 120	≤ 20%
Potassium	75 - 125	80 - 120	≤ 20%
Selenium	75 - 125	80 - 120	≤ 20%
Silica	75 - 125	80 - 120	≤ 20%
Silver	75 - 125	80 - 120	≤ 20%
Sodium	75 - 125	80 - 120	≤ 20%
Strontium	75 - 125	80 - 120	≤ 20%
Thallium	75 - 125	80 - 120	≤ 20%
Vanadium	75 - 125	80 - 120	≤ 20%
Zinc	75 - 125	80 - 120	≤ 20%

TL08 : 00023

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Spike Recovery Control Limits for Conventional Wet Chemistry

Effective 5/1/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

	ARI's Control Limits	
Sample Matrix:	Water	Soil / Sediment
Matrix Spike Recoveries	% Recovery	% Recovery
Ammonia	75 - 125	75 - 125
Bromide	75 125	75 - 125
Chloride	75 125	75 - 125
Cyanide	75 - 125	75 - 125
Ferrous Iron	75 - 125	75 - 125
Fluoride	75 - 125	75 - 125
Formaldehyde	75 - 125	75 - 125
Hexane Extractable Material	-- - --	78 - 114
Hexavalent Chromium	75 - 125	75 - 125
Nitrate/Nitrite	75 - 125	75 - 125
Oil and Grease	75 - 125	75 - 125
Phenol	75 - 125	75 - 125
Phosphorous	75 - 125	75 - 125
Sulfate	75 - 125	75 - 125
Sulfide	75 - 125	75 - 125
Total Kjeldahl Nitrogen	75 - 125	75 - 125
Total Organic Carbon	75 - 125	75 - 125
Duplicate RPDs		
Acidity	±20%	±20%
Alkalinity	±20%	±20%
BOD	±20%	±20%
Cation Exchange	±20%	±20%
COD	±20%	±20%
Conductivity	±20%	±20%
Salinity	±20%	±20%
Solids	±20%	±20%
Turbidity	±20%	±20%

TL08 : 00024

Volatile Analysis
Report and Summary QC Forms

ARI Job ID: TL08

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-023**
 SAMPLE

Lab Sample ID: TL08M
LIMS ID: 11-19405
Matrix: Water
Data Release Authorized:
Reported: 09/09/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/08/11 13:29

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.10	0.5	< 0.5 U
74-83-9	Bromomethane	0.04	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.08	0.2	< 0.2 U
75-00-3	Chloroethane	0.15	0.2	< 0.2 U
75-09-2	**Methylene Chloride**	**0.39**	**0.5**	**1.7**
67-64-1	Acetone	0.72	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.09	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.09	0.2	< 0.2 U
75-34-3	1,1-Dichloroethane	0.05	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.08	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.10	0.2	< 0.2 U
67-66-3	**Chloroform**	**0.08**	**0.2**	**1.8**
107-06-2	1,2-Dichloroethane	0.08	0.2	< 0.2 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.09	0.2	< 0.2 U
56-23-5	Carbon Tetrachloride	0.08	0.2	< 0.2 U
108-05-4	Vinyl Acetate	0.07	1.0	< 1.0 U
75-27-4	Bromodichloromethane	0.05	0.2	< 0.2 U
78-87-5	1,2-Dichloropropane	0.09	0.2	< 0.2 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.2	< 0.2 U
79-01-6	Trichloroethene	0.08	0.2	< 0.2 U
124-48-1	Dibromochloromethane	0.09	0.2	< 0.2 U
79-00-5	1,1,2-Trichloroethane	0.04	0.2	< 0.2 U
71-43-2	Benzene	0.06	0.2	< 0.2 U
10061-02-6	trans-1,3-Dichloropropene	0.06	0.2	< 0.2 U
110-75-8	2-Chloroethylvinylether	0.09	1.0	< 1.0 U
75-25-2	Bromoform	0.07	0.2	< 0.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.38	5.0	< 5.0 U
591-78-6	2-Hexanone	0.31	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.09	0.2	< 0.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.07	0.2	< 0.2 U
108-88-3	Toluene	0.06	0.2	< 0.2 U
108-90-7	Chlorobenzene	0.04	0.2	< 0.2 U
100-41-4	Ethylbenzene	0.09	0.2	< 0.2 U
100-42-5	Styrene	0.07	0.2	< 0.2 U
75-69-4	Trichlorofluoromethane	0.09	0.2	< 0.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.11	0.2	< 0.2 U
179601-23-1	m,p-Xylene	0.14	0.4	< 0.4 U
95-47-6	o-Xylene	0.06	0.2	< 0.2 U
95-50-1	1,2-Dichlorobenzene	0.06	0.2	< 0.2 U
541-73-1	1,3-Dichlorobenzene	0.04	0.2	< 0.2 U
106-46-7	1,4-Dichlorobenzene	0.06	0.2	< 0.2 U
107-02-8	Acrolein	0.29	5.0	< 5.0 U
74-88-4	Methyl Iodide	0.04	1.0	< 1.0 U
74-96-4	Bromoethane	0.09	0.2	< 0.2 U
107-13-1	Acrylonitrile	0.18	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.09	0.2	< 0.2 U
74-95-3	Dibromomethane	0.08	0.2	< 0.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.07	0.2	< 0.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.21	0.5	< 0.5 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-023**
 SAMPLE

Lab Sample ID: TL08M
LIMS ID: 11-19405
Matrix: Water
Date Analyzed: 09/08/11 13:29

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.23	0.5	< 0.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.24	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.06	0.2	< 0.2 U
95-63-6	1,2,4-Trimethylbenzene	0.06	0.2	< 0.2 U
87-68-3	Hexachlorobutadiene	0.11	0.5	< 0.5 U
106-93-4	Ethylene Dibromide	0.08	0.2	< 0.2 U
74-97-5	Bromochloromethane	0.07	0.2	< 0.2 U
594-20-7	2,2-Dichloropropane	0.08	0.2	< 0.2 U
142-28-9	1,3-Dichloropropane	0.02	0.2	< 0.2 U
98-82-8	Isopropylbenzene	0.06	0.2	< 0.2 U
103-65-1	n-Propylbenzene	0.08	0.2	< 0.2 U
108-86-1	Bromobenzene	0.05	0.2	< 0.2 U
95-49-8	2-Chlorotoluene	0.04	0.2	< 0.2 U
106-43-4	4-Chlorotoluene	0.07	0.2	< 0.2 U
98-06-6	tert-Butylbenzene	0.06	0.2	< 0.2 U
135-98-8	sec-Butylbenzene	0.08	0.2	< 0.2 U
99-87-6	4-Isopropyltoluene	0.08	0.2	< 0.2 U
104-51-8	n-Butylbenzene	0.11	0.2	< 0.2 U
120-82-1	1,2,4-Trichlorobenzene	0.10	0.5	< 0.5 U
91-20-3	Naphthalene	0.07	0.5	< 0.5 U
87-61-6	1,2,3-Trichlorobenzene	0.09	0.5	< 0.5 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.9%
d8-Toluene	99.8%
Bromofluorobenzene	99.7%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: Trip Blanks**
 SAMPLE

Lab Sample ID: TL08N
LIMS ID: 11-19406
Matrix: Water
Data Release Authorized:
Reported: 09/09/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/08/11 12:09

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.10	0.5	< 0.5 U
74-83-9	Bromomethane	0.04	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.08	0.2	< 0.2 U
75-00-3	Chloroethane	0.15	0.2	< 0.2 U
75-09-2	**Methylene Chloride**	**0.39**	**0.5**	**0.6**
67-64-1	Acetone	0.72	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.09	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.09	0.2	< 0.2 U
75-34-3	1,1-Dichloroethane	0.05	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.08	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.10	0.2	< 0.2 U
67-66-3	Chloroform	0.08	0.2	< 0.2 U
107-06-2	1,2-Dichloroethane	0.08	0.2	< 0.2 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.09	0.2	< 0.2 U
56-23-5	Carbon Tetrachloride	0.08	0.2	< 0.2 U
108-05-4	Vinyl Acetate	0.07	1.0	< 1.0 U
75-27-4	Bromodichloromethane	0.05	0.2	< 0.2 U
78-87-5	1,2-Dichloropropane	0.09	0.2	< 0.2 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.2	< 0.2 U
79-01-6	Trichloroethene	0.08	0.2	< 0.2 U
124-48-1	Dibromochloromethane	0.09	0.2	< 0.2 U
79-00-5	1,1,2-Trichloroethane	0.04	0.2	< 0.2 U
71-43-2	Benzene	0.06	0.2	< 0.2 U
10061-02-6	trans-1,3-Dichloropropene	0.06	0.2	< 0.2 U
110-75-8	2-Chloroethylvinylether	0.09	1.0	< 1.0 U
75-25-2	Bromoform	0.07	0.2	< 0.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.38	5.0	< 5.0 U
591-78-6	2-Hexanone	0.31	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.09	0.2	< 0.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.07	0.2	< 0.2 U R
108-88-3	Toluene	0.06	0.2	< 0.2 U
108-90-7	Chlorobenzene	0.04	0.2	< 0.2 U
100-41-4	Ethylbenzene	0.09	0.2	< 0.2 U
100-42-5	Styrene	0.07	0.2	< 0.2 U
75-69-4	Trichlorofluoromethane	0.09	0.2	< 0.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.11	0.2	< 0.2 U
179601-23-1	m,p-Xylene	0.14	0.4	< 0.4 U
95-47-6	o-Xylene	0.06	0.2	< 0.2 U
95-50-1	1,2-Dichlorobenzene	0.06	0.2	< 0.2 U
541-73-1	1,3-Dichlorobenzene	0.04	0.2	< 0.2 U
106-46-7	1,4-Dichlorobenzene	0.06	0.2	< 0.2 U
107-02-8	Acrolein	0.29	5.0	< 5.0 U J
74-88-4	Methyl Iodide	0.04	1.0	< 1.0 U
74-96-4	Bromoethane	0.09	0.2	< 0.2 U
107-13-1	Acrylonitrile	0.18	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.09	0.2	< 0.2 U
74-95-3	Dibromomethane	0.08	0.2	< 0.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.07	0.2	< 0.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.21	0.5	< 0.5 U

CM 9/14/12

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: Trip Blanks**
 SAMPLE

Lab Sample ID: TL08N
LIMS ID: 11-19406
Matrix: Water
Date Analyzed: 09/08/11 12:09

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.23	0.5	< 0.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.24	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.06	0.2	< 0.2 U
95-63-6	1,2,4-Trimethylbenzene	0.06	0.2	< 0.2 U
87-68-3	Hexachlorobutadiene	0.11	0.5	< 0.5 U
106-93-4	Ethylene Dibromide	0.08	0.2	< 0.2 U
74-97-5	Bromochloromethane	0.07	0.2	< 0.2 U
594-20-7	2,2-Dichloropropane	0.08	0.2	< 0.2 U
142-28-9	1,3-Dichloropropane	0.02	0.2	< 0.2 U
98-82-8	Isopropylbenzene	0.06	0.2	< 0.2 U
103-65-1	n-Propylbenzene	0.08	0.2	< 0.2 U
108-86-1	Bromobenzene	0.05	0.2	< 0.2 U
95-49-8	2-Chlorotoluene	0.04	0.2	< 0.2 U
106-43-4	4-Chlorotoluene	0.07	0.2	< 0.2 U
98-06-6	tert-Butylbenzene	0.06	0.2	< 0.2 U
135-98-8	sec-Butylbenzene	0.08	0.2	< 0.2 U
99-87-6	4-Isopropyltoluene	0.08	0.2	< 0.2 U
104-51-8	n-Butylbenzene	0.11	0.2	< 0.2 U
120-82-1	1,2,4-Trichlorobenzene	0.10	0.5	< 0.5 U
91-20-3	Naphthalene	0.07	0.5	< 0.5 U
87-61-6	1,2,3-Trichlorobenzene	0.09	0.5	< 0.5 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	98.4%
Bromofluorobenzene	99.8%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-090811	Method Blank	10	103%	98.5%	101%	99.3%	0
LCS-090811	Lab Control	10	100%	98.1%	100%	99.6%	0
LCSD-090811	Lab Control Dup	10	103%	97.7%	102%	101%	0
TL08M	FRP-090611-023	10	98.9%	99.8%	99.7%	103%	0
TL08N	Trip Blanks	10	101%	98.4%	99.8%	104%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	80-120	80-120
(TOL) = d8-Toluene	80-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120

Prep Method: SW5030B
Log Number Range: 11-19405 to 11-19406

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-090811**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-090811
LIMS ID: 11-19405
Matrix: Water
Data Release Authorized:
Reported: 09/09/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/PKC
LCSD: NT3/PKC
Date Analyzed LCS: 09/08/11 10:17
LCSD: 09/08/11 10:45

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	9.5	10.0	95.0%	9.6	10.0	96.0%	1.0%
Bromomethane	9.9	10.0	99.0%	9.7	10.0	97.0%	2.0%
Vinyl Chloride	9.7	10.0	97.0%	9.6	10.0	96.0%	1.0%
Chloroethane	9.3	10.0	93.0%	9.6	10.0	96.0%	3.2%
Methylene Chloride	9.8	10.0	98.0%	10.0	10.0	100%	2.0%
Acetone	48.6	50.0	97.2%	51.6	50.0	103%	6.0%
Carbon Disulfide	9.4	10.0	94.0%	9.6	10.0	96.0%	2.1%
1,1-Dichloroethene	9.4	10.0	94.0%	9.4	10.0	94.0%	0.0%
1,1-Dichloroethane	9.6	10.0	96.0%	9.8	10.0	98.0%	2.1%
trans-1,2-Dichloroethene	9.4	10.0	94.0%	9.6	10.0	96.0%	2.1%
cis-1,2-Dichloroethene	9.8	10.0	98.0%	9.8	10.0	98.0%	0.0%
Chloroform	10.1	10.0	101%	10.0	10.0	100%	1.0%
1,2-Dichloroethane	9.7	10.0	97.0%	9.4	10.0	94.0%	3.1%
2-Butanone	50.3	50.0	101%	48.9	50.0	97.8%	2.8%
1,1,1-Trichloroethane	9.8	10.0	98.0%	9.7	10.0	97.0%	1.0%
Carbon Tetrachloride	9.8	10.0	98.0%	9.7	10.0	97.0%	1.0%
Vinyl Acetate	10.3	10.0	103%	9.8	10.0	98.0%	5.0%
Bromodichloromethane	9.9	10.0	99.0%	9.6	10.0	96.0%	3.1%
1,2-Dichloropropane	10.0	10.0	100%	9.7	10.0	97.0%	3.0%
cis-1,3-Dichloropropene	10.0	10.0	100%	9.8	10.0	98.0%	2.0%
Trichloroethene	9.6	10.0	96.0%	9.4	10.0	94.0%	2.1%
Dibromochloromethane	10.2	10.0	102%	10.1	10.0	101%	1.0%
1,1,2-Trichloroethane	9.6	10.0	96.0%	9.4	10.0	94.0%	2.1%
Benzene	9.9	10.0	99.0%	9.7	10.0	97.0%	2.0%
trans-1,3-Dichloropropene	10.0	10.0	100%	9.4	10.0	94.0%	6.2%
2-Chloroethylvinylether	10.3	10.0	103%	9.7	10.0	97.0%	6.0%
Bromoform	9.8	10.0	98.0%	9.9	10.0	99.0%	1.0%
4-Methyl-2-Pentanone (MIBK)	50.1	50.0	100%	48.8	50.0	97.6%	2.6%
2-Hexanone	51.4	50.0	103%	50.4	50.0	101%	2.0%
Tetrachloroethene	9.7	10.0	97.0%	9.5	10.0	95.0%	2.1%
1,1,2,2-Tetrachloroethane	9.7	10.0	97.0%	9.4	10.0	94.0%	3.1%
Toluene	9.7	10.0	97.0%	9.3	10.0	93.0%	4.2%
Chlorobenzene	9.8	10.0	98.0%	9.6	10.0	96.0%	2.1%
Ethylbenzene	9.9	10.0	99.0%	9.7	10.0	97.0%	2.0%
Styrene	9.9	10.0	99.0%	10.0	10.0	100%	1.0%
Trichlorofluoromethane	9.6	10.0	96.0%	9.8	10.0	98.0%	2.1%
1,1,2-Trichloro-1,2,2-trifluoroetha	9.4	10.0	94.0%	9.5	10.0	95.0%	1.1%
m,p-Xylene	19.9	20.0	99.5%	19.5	20.0	97.5%	2.0%
o-Xylene	9.8	10.0	98.0%	9.9	10.0	99.0%	1.0%
1,2-Dichlorobenzene	9.6	10.0	96.0%	9.5	10.0	95.0%	1.0%
1,3-Dichlorobenzene	9.6	10.0	96.0%	9.5	10.0	95.0%	1.0%
1,4-Dichlorobenzene	9.5	10.0	95.0%	9.3	10.0	93.0%	2.1%
Acrolein	35.9 Q	50.0	71.8%	40.1 Q	50.0	80.2%	11.1%
Methyl Iodide	9.8	10.0	98.0%	9.7	10.0	97.0%	1.0%
Bromoethane	9.8	10.0	98.0%	10.2	10.0	102%	4.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-090811**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-090811
LIMS ID: 11-19405
Matrix: Water

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Acrylonitrile	9.9	10.0	99.0%	10.5	10.0	105%	5.9%
1,1-Dichloropropene	9.7	10.0	97.0%	9.5	10.0	95.0%	2.1%
Dibromomethane	10.0	10.0	100%	9.9	10.0	99.0%	1.0%
1,1,1,2-Tetrachloroethane	9.6	10.0	96.0%	9.5	10.0	95.0%	1.0%
1,2-Dibromo-3-chloropropane	9.5	10.0	95.0%	10.0	10.0	100%	5.1%
1,2,3-Trichloropropane	9.8	10.0	98.0%	9.1	10.0	91.0%	7.4%
trans-1,4-Dichloro-2-butene	9.9	10.0	99.0%	9.2	10.0	92.0%	7.3%
1,3,5-Trimethylbenzene	10.2	10.0	102%	9.9	10.0	99.0%	3.0%
1,2,4-Trimethylbenzene	10.0	10.0	100%	9.8	10.0	98.0%	2.0%
Hexachlorobutadiene	10.0	10.0	100%	9.6	10.0	96.0%	4.1%
Ethylene Dibromide	9.9	10.0	99.0%	9.9	10.0	99.0%	0.0%
Bromochloromethane	10.1	10.0	101%	10.0	10.0	100%	1.0%
2,2-Dichloropropane	9.6	10.0	96.0%	9.7	10.0	97.0%	1.0%
1,3-Dichloropropane	10.0	10.0	100%	9.8	10.0	98.0%	2.0%
Isopropylbenzene	10.0	10.0	100%	9.8	10.0	98.0%	2.0%
n-Propylbenzene	10.2	10.0	102%	9.8	10.0	98.0%	4.0%
Bromobenzene	9.9	10.0	99.0%	9.7	10.0	97.0%	2.0%
2-Chlorotoluene	9.8	10.0	98.0%	9.6	10.0	96.0%	2.1%
4-Chlorotoluene	9.8	10.0	98.0%	9.8	10.0	98.0%	0.0%
tert-Butylbenzene	10.1	10.0	101%	9.8	10.0	98.0%	3.0%
sec-Butylbenzene	10.0	10.0	100%	9.8	10.0	98.0%	2.0%
4-Isopropyltoluene	10.0	10.0	100%	9.8	10.0	98.0%	2.0%
n-Butylbenzene	10.1	10.0	101%	9.8	10.0	98.0%	3.0%
1,2,4-Trichlorobenzene	10.1	10.0	101%	10.0	10.0	100%	1.0%
Naphthalene	10.4	10.0	104%	10.4	10.0	104%	0.0%
1,2,3-Trichlorobenzene	10.0	10.0	100%	10.0	10.0	100%	0.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	100%	103%
d8-Toluene	98.1%	97.7%
Bromofluorobenzene	100%	102%
d4-1,2-Dichlorobenzene	99.6%	101%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0908

Lab Name: ANALYTICAL RESOURCES INC

Client: AMEC GEOMATRIX

ARI Job No: TL08

Project: FRP 2011 SHORELINE INVE

Lab File ID: MB0908

Lab Sample ID: MB0908

Date Analyzed: 09/08/11

Time Analyzed: 1111

Instrument ID: NT3

Heated Purge: (Y/N) N

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS0908	LCS0908	LCS0908	1017
02	LCS0908	LCS0908	LCS0908A	1045
03	TRIP BLANKS	TL08N	TL08N	1209
04	FRP-090611-0	TL08M	TL08M	1329
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COMMENTS:

FORM IV VOA

OLM3.2M

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-090811**
 METHOD BLANK

Lab Sample ID: MB-090811
LIMS ID: 11-19405
Matrix: Water
Data Release Authorized:
Reported: 09/09/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/08/11 11:11

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.10	0.5	< 0.5 U
74-83-9	Bromomethane	0.04	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.08	0.2	< 0.2 U
75-00-3	Chloroethane	0.15	0.2	< 0.2 U
75-09-2	Methylene Chloride	0.39	0.5	< 0.5 U
67-64-1	Acetone	0.72	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.09	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.09	0.2	< 0.2 U
75-34-3	1,1-Dichloroethane	0.05	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.08	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.10	0.2	< 0.2 U
67-66-3	Chloroform	0.08	0.2	< 0.2 U
107-06-2	1,2-Dichloroethane	0.08	0.2	< 0.2 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.09	0.2	< 0.2 U
56-23-5	Carbon Tetrachloride	0.08	0.2	< 0.2 U
108-05-4	Vinyl Acetate	0.07	1.0	< 1.0 U
75-27-4	Bromodichloromethane	0.05	0.2	< 0.2 U
78-87-5	1,2-Dichloropropane	0.09	0.2	< 0.2 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.2	< 0.2 U
79-01-6	Trichloroethene	0.08	0.2	< 0.2 U
124-48-1	Dibromochloromethane	0.09	0.2	< 0.2 U
79-00-5	1,1,2-Trichloroethane	0.04	0.2	< 0.2 U
71-43-2	Benzene	0.06	0.2	< 0.2 U
10061-02-6	trans-1,3-Dichloropropene	0.06	0.2	< 0.2 U
110-75-8	2-Chloroethylvinylether	0.09	1.0	< 1.0 U
75-25-2	Bromoform	0.07	0.2	< 0.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.38	5.0	< 5.0 U
591-78-6	2-Hexanone	0.31	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.09	0.2	< 0.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.07	0.2	< 0.2 U
108-88-3	Toluene	0.06	0.2	< 0.2 U
108-90-7	Chlorobenzene	0.04	0.2	< 0.2 U
100-41-4	Ethylbenzene	0.09	0.2	< 0.2 U
100-42-5	Styrene	0.07	0.2	< 0.2 U
75-69-4	Trichlorofluoromethane	0.09	0.2	< 0.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.11	0.2	< 0.2 U
179601-23-1	m,p-Xylene	0.14	0.4	< 0.4 U
95-47-6	o-Xylene	0.06	0.2	< 0.2 U
95-50-1	1,2-Dichlorobenzene	0.06	0.2	< 0.2 U
541-73-1	1,3-Dichlorobenzene	0.04	0.2	< 0.2 U
106-46-7	1,4-Dichlorobenzene	0.06	0.2	< 0.2 U
107-02-8	Acrolein	0.29	5.0	< 5.0 U
74-88-4	Methyl Iodide	0.04	1.0	< 1.0 U
74-96-4	Bromoethane	0.09	0.2	< 0.2 U
107-13-1	Acrylonitrile	0.18	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.09	0.2	< 0.2 U
74-95-3	Dibromomethane	0.08	0.2	< 0.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.07	0.2	< 0.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.21	0.5	< 0.5 U

TL08:00034

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-090811**
 METHOD BLANK

Lab Sample ID: MB-090811
LIMS ID: 11-19405
Matrix: Water
Date Analyzed: 09/08/11 11:11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.23	0.5	< 0.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.24	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.06	0.2	< 0.2 U
95-63-6	1,2,4-Trimethylbenzene	0.06	0.2	< 0.2 U
87-68-3	Hexachlorobutadiene	0.11	0.5	< 0.5 U
106-93-4	Ethylene Dibromide	0.08	0.2	< 0.2 U
74-97-5	Bromochloromethane	0.07	0.2	< 0.2 U
594-20-7	2,2-Dichloropropane	0.08	0.2	< 0.2 U
142-28-9	1,3-Dichloropropane	0.02	0.2	< 0.2 U
98-82-8	Isopropylbenzene	0.06	0.2	< 0.2 U
103-65-1	n-Propylbenzene	0.08	0.2	< 0.2 U
108-86-1	Bromobenzene	0.05	0.2	< 0.2 U
95-49-8	2-Chlorotoluene	0.04	0.2	< 0.2 U
106-43-4	4-Chlorotoluene	0.07	0.2	< 0.2 U
98-06-6	tert-Butylbenzene	0.06	0.2	< 0.2 U
135-98-8	sec-Butylbenzene	0.08	0.2	< 0.2 U
99-87-6	4-Isopropyltoluene	0.08	0.2	< 0.2 U
104-51-8	n-Butylbenzene	0.11	0.2	< 0.2 U
120-82-1	1,2,4-Trichlorobenzene	0.10	0.5	< 0.5 U
91-20-3	Naphthalene	0.07	0.5	< 0.5 U
87-61-6	1,2,3-Trichlorobenzene	0.09	0.5	< 0.5 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	98.5%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	99.3%

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP 2011 SHORELINE INVESTIGATION SDG No.: TL08

Lab File ID: BFB0901 BFB Injection Date: 09/01/11

Instrument ID: NT3 BFB Injection Time: 1058

GC Column: RTXVMS ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	16.3
75	30.0 - 66.0% of mass 95	48.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.2
173	Less than 2.0% of mass 174	0.3 (0.4)1
174	50.0 - 101.0% of mass 95	76.7
175	4.0 - 9.0% of mass 174	5.5 (7.1)1
176	93.0 - 101.0% of mass 174	74.2 (96.7)1
177	5.0 - 9.0% of mass 176	4.9 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0.2	VSTD0.2	00_20901	09/01/11	1147
02	VSTD0.5	VSTD0.5	00_50901	09/01/11	1214
03	VSTD01	VSTD01	01_00901	09/01/11	1241
04	VSTD02	VSTD02	02_00901	09/01/11	1308
05	VSTD10	VSTD10	10_00901	09/01/11	1334
06	VSTD20	VSTD20	20_00901	09/01/11	1402
07	VSTD40	VSTD40	40_00901	09/01/11	1428
08	VSTD80	VSTD80	80_00901	09/01/11	1455
09	ICV10	ICV10	ICV0901	09/01/11	1548
10					
11					
12					
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22					

FORM V VOA OLM3.2M

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP 2011 SHORELINE INVESTIGATION SDG No.: TL08

Lab File ID: BFB0908 BFB Injection Date: 09/08/11

Instrument ID: NT3 BFB Injection Time: 0921

GC Column: RTXVMS ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	16.0
75	30.0 - 66.0% of mass 95	47.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.3 (0.3)1
174	50.0 - 101.0% of mass 95	83.3
175	4.0 - 9.0% of mass 174	5.3 (6.3)1
176	93.0 - 101.0% of mass 174	80.7 (96.9)1
177	5.0 - 9.0% of mass 176	5.0 (6.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CC0908	CC0908	CC0908	09/08/11	0950
02	LCS0908	LCS0908	LCS0908	09/08/11	1017
03	LCS0908	LCS0908	LCS0908A	09/08/11	1045
04	MB0908	MB0908	MB0908	09/08/11	1111
05	TRIP BLANKS	TL08N	TL08N	09/08/11	1209
06	FRP-090611-023	TL08M	TL08M	09/08/11	1329
07					
08					
09					
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22					

FORM V VOA OLM3.2M

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TL08 Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 Calibration Date: 09/01/11

LAB FILE ID: RF0.2: 00_20901 RF0.5: 00_50901 RF1: 01_00901
RF2: 02_00901 RF10: 10_00901

COMPOUND	RF0.2	RF0.5	RF1	RF2	RF10
Chloromethane	0.531	0.556	0.498	0.490	0.489
Vinyl Chloride	0.652	0.660	0.641	0.595	0.596
Bromomethane		0.375	0.409	0.351	0.381
Chloroethane	0.444	0.412	0.401	0.368	0.370
Trichlorofluoromethane	0.870	0.860	0.849	0.829	0.828
Acrolein		0.025	0.028	0.025	0.026
112Trichloro122Trifluoroetha	0.745	0.629	0.583	0.568	0.573
Acetone		0.042	0.039	0.035	0.037
1,1-Dichloroethene	0.553	0.517	0.524	0.474	0.486
Bromoethane	0.406	0.461	0.396	0.400	0.423
Iodomethane		0.902	0.907	0.823	0.870
Methylene Chloride		0.882	0.683	0.546	0.478
Acrylonitrile			0.030	0.050	0.048
Carbon Disulfide	2.027	1.704	1.684	1.574	1.647
Trans-1,2-Dichloroethene	0.640	0.576	0.566	0.546	0.553
Vinyl Acetate			0.281	0.259	0.282
1,1-Dichloroethane	0.940	0.837	0.872	0.823	0.846
2-Butanone		0.051	0.059	0.052	0.055
2,2-Dichloropropane	0.900	0.794	0.826	0.754	0.760
Cis-1,2-Dichloroethene	0.614	0.563	0.543	0.530	0.531
Chloroform	0.814	0.900	0.873	0.843	0.860
Bromochloromethane	0.194	0.191	0.207	0.190	0.208
1,1,1-Trichloroethane	0.977	0.932	0.909	0.856	0.912
1,1-Dichloropropene	0.480	0.475	0.450	0.422	0.451
Carbon Tetrachloride	0.497	0.497	0.462	0.445	0.486
1,2-Dichloroethane	0.276	0.280	0.282	0.265	0.256
Benzene	1.241	1.298	1.268	1.244	1.249
Trichloroethene	0.420	0.372	0.378	0.370	0.367
1,2-Dichloropropane	0.225	0.274	0.249	0.244	0.251
Bromodichloromethane	0.333	0.316	0.333	0.310	0.317
Dibromomethane	0.101	0.116	0.112	0.116	0.105
2-Chloroethyl Vinyl Ether		0.076	0.079	0.068	0.082
4-Methyl-2-Pentanone		0.094	0.090	0.095	0.099
Cis 1,3-dichloropropene	0.348	0.355	0.359	0.338	0.362
Toluene	0.935	0.850	0.873	0.870	0.844
Trans 1,3-Dichloropropene	0.277	0.304	0.269	0.271	0.289
2-Hexanone		0.058	0.064	0.066	0.067

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TL08 Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 Calibration Date: 09/01/11

LAB FILE ID: RF0.2: 00_20901 RF0.5: 00_50901 RF1: 01_00901
RF2: 02_00901 RF10: 10_00901

COMPOUND	RF0.2	RF0.5	RF1	RF2	RF10
1,1,2-Trichloroethane	0.153	0.160	0.163	0.168	0.161
1,3-Dichloropropane	0.278	0.260	0.291	0.280	0.283
Tetrachloroethene	0.466	0.416	0.422	0.398	0.398
Chlorodibromomethane	0.174	0.188	0.192	0.188	0.205
1,2-Dibromoethane	0.134	0.157	0.152	0.152	0.162
Chlorobenzene	1.013	1.012	1.035	1.002	0.984
Ethyl Benzene	1.976	1.852	1.847	1.803	1.820
1,1,1,2-Tetrachloroethane	0.283	0.327	0.316	0.307	0.315
m,p-xylene	0.781	0.742	0.704	0.716	0.727
o-Xylene	0.725	0.681	0.728	0.707	0.716
Styrene	1.071	0.954	1.053	1.028	1.080
Bromoform	0.172	0.149	0.156	0.161	0.169
1,1,2,2-Tetrachloroethane	0.292	0.316	0.349	0.313	0.309
1,2,3-Trichloropropane		0.103	0.103	0.108	0.096
Trans-1,4-Dichloro 2-Butene			0.082	0.074	0.076
N-Propyl Benzene	4.033	3.815	3.775	3.775	3.693
Bromobenzene	0.622	0.714	0.702	0.660	0.670
Isopropyl Benzene	3.644	3.370	3.421	3.240	3.226
2-Chloro Toluene	2.361	2.429	2.335	2.289	2.303
4-Chloro Toluene	2.378	2.364	2.370	2.287	2.284
T-Butyl Benzene	2.674	2.679	2.543	2.534	2.536
1,3,5-Trimethyl Benzene	2.939	2.931	2.863	2.861	2.862
1,2,4-Trimethylbenzene	3.083	3.024	2.922	2.872	2.905
S-Butyl Benzene	3.988	3.888	3.750	3.756	3.652
4-Isopropyl Toluene	3.593	3.238	3.210	3.209	3.160
1,3-Dichlorobenzene	1.715	1.599	1.551	1.541	1.525
1,4-Dichlorobenzene	1.654	1.631	1.556	1.504	1.494
N-Butyl Benzene	2.998	2.865	2.818	2.743	2.737
1,2-Dichlorobenzene	1.335	1.374	1.330	1.326	1.293
1,2-Dibromo 3-Chloropropane		0.057	0.053	0.053	0.050
1,2,4-Trichlorobenzene		0.872	0.839	0.855	0.867
Hexachloro 1,3-Butadiene		0.488	0.508	0.458	0.416
Naphthalene		0.977	1.064	1.052	1.157
1,2,3-Trichlorobenzene		0.641	0.618	0.640	0.648
Dichlorodifluoromethane	0.589	0.606	0.551	0.516	0.540
Methyl tert butyl ether	0.748	0.932	1.000	0.903	0.946

TL08 : 00039

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TL08 Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 Calibration Date: 09/01/11

LAB FILE ID: RF0.2: 00_20901 RF0.5: 00_50901 RF1: 01_00901
RF2: 02_00901 RF10: 10_00901

COMPOUND	RF0.2	RF0.5	RF1	RF2	RF10
d4-1,2-Dichloroethane	0.336	0.366	0.360	0.365	0.365
d8-Toluene	1.309	1.268	1.258	1.255	1.269
4-Bromofluorobenzene	0.484	0.504	0.507	0.515	0.508
d4-1,2-Dichlorobenzene	0.822	0.865	0.848	0.851	0.846
Dibromofluoromethane	0.418	0.444	0.432	0.439	0.439

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TL08 Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 Calibration Date: 09/01/11

LAB FILE ID: RF20: 20_00901 RF40: 40_00901 RF80: 80_00901

COMPOUND	RF20	RF40	RF80
Chloromethane	0.498	0.520	0.483
Vinyl Chloride	0.605	0.635	0.610
Bromomethane	0.368	0.389	0.357
Chloroethane	0.381	0.404	0.353
Trichlorofluoromethane	0.850	0.881	0.822
Acrolein	0.027	0.029	0.028
112Trichloro122Trifluoroetha	0.585	0.616	0.567
Acetone	0.039	0.041	0.040
1,1-Dichloroethene	0.491	0.526	0.488
Bromoethane	0.424	0.443	0.412
Iodomethane	0.891	0.913	0.852
Methylene Chloride	0.470	0.487	0.456
Acrylonitrile	0.052	0.056	0.054
Carbon Disulfide	1.670	1.746	1.596
Trans-1,2-Dichloroethene	0.566	0.591	0.558
Vinyl Acetate	0.296	0.317	0.332
1,1-Dichloroethane	0.854	0.895	0.846
2-Butanone	0.056	0.059	0.059
2,2-Dichloropropane	0.756	0.800	0.707
Cis-1,2-Dichloroethene	0.544	0.570	0.539
Chloroform	0.874	0.905	0.866
Bromochloromethane	0.202	0.210	0.203
1,1,1-Trichloroethane	0.906	0.968	0.895
1,1-Dichloropropene	0.452	0.470	0.443
Carbon Tetrachloride	0.488	0.518	0.482
1,2-Dichloroethane	0.256	0.267	0.252
Benzene	1.231	1.282	1.158
Trichloroethene	0.360	0.374	0.350
1,2-Dichloropropane	0.247	0.260	0.249
Bromodichloromethane	0.324	0.346	0.333
Dibromomethane	0.109	0.114	0.108
2-Chloroethyl Vinyl Ether	0.084	0.086	0.086
4-Methyl-2-Pentanone	0.096	0.101	0.095
Cis 1,3-dichloropropene	0.368	0.396	0.378
Toluene	0.854	0.884	0.810
Trans 1,3-Dichloropropene	0.297	0.317	0.302
2-Hexanone	0.067	0.068	0.066

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TL08 Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 Calibration Date: 09/01/11

LAB FILE ID: RF20: 20_00901 RF40: 40_00901 RF80: 80_00901

COMPOUND	RF20	RF40	RF80
1,1,2-Trichloroethane	0.162	0.169	0.160
1,3-Dichloropropane	0.273	0.288	0.279
Tetrachloroethene	0.390	0.405	0.386
Chlorodibromomethane	0.208	0.223	0.222
1,2-Dibromoethane	0.162	0.169	0.162
Chlorobenzene	0.978	0.997	0.920
Ethyl Benzene	1.793	1.796	1.545
1,1,1,2-Tetrachloroethane	0.318	0.338	0.330
m,p-xylene	0.720	0.729	0.648
o-Xylene	0.705	0.742	0.703
Styrene	1.075	1.116	1.043
Bromoform	0.178	0.193	0.195
1,1,2,2-Tetrachloroethane	0.313	0.322	0.314
1,2,3-Trichloropropane	0.099	0.103	0.100
Trans-1,4-Dichloro 2-Butene	0.079	0.081	0.084
N-Propyl Benzene	3.617	3.527	2.893
Bromobenzene	0.656	0.679	0.655
Isopropyl Benzene	3.189	3.150	2.675
2-Chloro Toluene	2.252	2.240	2.056
4-Chloro Toluene	2.268	2.284	2.054
T-Butyl Benzene	2.503	2.540	2.236
1,3,5-Trimethyl Benzene	2.864	2.850	2.439
1,2,4-Trimethylbenzene	2.897	2.903	2.457
S-Butyl Benzene	3.612	3.555	2.890
4-Isopropyl Toluene	3.150	3.109	2.591
1,3-Dichlorobenzene	1.502	1.539	1.435
1,4-Dichlorobenzene	1.476	1.506	1.402
N-Butyl Benzene	2.767	2.770	2.359
1,2-Dichlorobenzene	1.280	1.300	1.225
1,2-Dibromo 3-Chloropropane	0.051	0.055	0.055
1,2,4-Trichlorobenzene	0.894	0.906	0.881
Hexachloro 1,3-Butadiene	0.446	0.452	0.442
Naphthalene	1.217	1.228	1.184
1,2,3-Trichlorobenzene	0.662	0.666	0.645
Dichlorodifluoromethane	0.550	0.574	0.524
Methyl tert butyl ether	0.955	0.993	0.932

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TL08 Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 Calibration Date: 09/01/11

LAB FILE ID: RF20: 20_00901 RF40: 40_00901 RF80: 80_00901

COMPOUND	RF20	RF40	RF80
d4-1,2-Dichloroethane	0.360	0.363	0.377
d8-Toluene	1.263	1.294	1.269
4-Bromofluorobenzene	0.516	0.509	0.518
d4-1,2-Dichlorobenzene	0.832	0.836	0.827
Dibromofluoromethane	0.455	0.451	0.459

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC | Client: AMEC GEOMATRIX

ARI Job No: TL08 | Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 | Calibration Date: 09/01/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
Chloromethane	AVRG	0.508	5.0
Vinyl Chloride	AVRG	0.624	4.2
Bromomethane	AVRG	0.376	5.2
Chloroethane	AVRG	0.392	7.5
Trichlorofluoromethane	AVRG	0.849	2.5
Acrolein	AVRG	0.027	5.5
112Trichloro122Trifluoroetha	AVRG	0.608	9.8
Acetone	AVRG	0.039	6.5
1,1-Dichloroethene	AVRG	0.508	5.2
Bromoethane	AVRG	0.421	5.3
Iodomethane	AVRG	0.880	3.8
Methylene Chloride	LINR		0.9987
Acrylonitrile	AVRG	0.048	19.6
Carbon Disulfide	AVRG	1.706	8.3
Trans-1,2-Dichloroethene	AVRG	0.575	5.2
Vinyl Acetate	AVRG	0.294	9.0
1,1-Dichloroethane	AVRG	0.864	4.3
2-Butanone	AVRG	0.056	6.1
2,2-Dichloropropane	AVRG	0.787	7.4
Cis-1,2-Dichloroethene	AVRG	0.554	5.1
Chloroform	AVRG	0.867	3.4
Bromochloromethane	AVRG	0.200	4.0
1,1,1-Trichloroethane	AVRG	0.919	4.3
1,1-Dichloropropene	AVRG	0.455	4.2
Carbon Tetrachloride	AVRG	0.484	4.6
1,2-Dichloroethane	AVRG	0.267	4.3
Benzene	AVRG	1.246	3.4
Trichloroethene	AVRG	0.374	5.6
1,2-Dichloropropane	AVRG	0.250	5.6
Bromodichloromethane	AVRG	0.326	3.6
Dibromomethane	AVRG	0.110	4.9
2-Chloroethyl Vinyl Ether	AVRG	0.080	8.1
4-Methyl-2-Pentanone	AVRG	0.096	3.5
Cis 1,3-dichloropropene	AVRG	0.363	5.0
Toluene	AVRG	0.865	4.2
Trans 1,3-Dichloropropene	AVRG	0.291	5.9
2-Hexanone	AVRG	0.065	5.3

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 — Calibration Date: 09/01/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
1,1,2-Trichloroethane	AVRG	0.162	3.1
1,3-Dichloropropane	AVRG	0.279	3.4
Tetrachloroethene	AVRG	0.410	6.2
Chlorodibromomethane	AVRG	0.200	8.7
1,2-Dibromoethane	AVRG	0.156	6.8
Chlorobenzene	AVRG	0.993	3.5
Ethyl Benzene	AVRG	1.804	6.7
1,1,1,2-Tetrachloroethane	AVRG	0.317	5.3
m,p-xylene	AVRG	0.721	5.2
o-Xylene	AVRG	0.713	2.6
Styrene	AVRG	1.053	4.6
Bromoform	AVRG	0.172	9.6
1,1,2,2-Tetrachloroethane	AVRG	0.316	5.0
1,2,3-Trichloropropane	AVRG	0.102	3.6
Trans-1,4-Dichloro 2-Butene	AVRG	0.080	4.6
N-Propyl Benzene	AVRG	3.641	9.3
Bromobenzene	AVRG	0.670	4.3
Isopropyl Benzene	AVRG	3.239	8.6
2-Chloro Toluene	AVRG	2.283	4.8
4-Chloro Toluene	AVRG	2.286	4.6
T-Butyl Benzene	AVRG	2.531	5.4
1,3,5-Trimethyl Benzene	AVRG	2.826	5.7
1,2,4-Trimethylbenzene	AVRG	2.883	6.5
S-Butyl Benzene	AVRG	3.636	9.2
4-Isopropyl Toluene	AVRG	3.158	8.7
1,3-Dichlorobenzene	AVRG	1.551	5.2
1,4-Dichlorobenzene	AVRG	1.528	5.4
N-Butyl Benzene	AVRG	2.757	6.6
1,2-Dichlorobenzene	AVRG	1.308	3.4
1,2-Dibromo 3-Chloropropane	AVRG	0.053	4.8
1,2,4-Trichlorobenzene	AVRG	0.873	2.6
Hexachloro 1,3-Butadiene	AVRG	0.458	6.7
Naphthalene	AVRG	1.126	8.5
1,2,3-Trichlorobenzene	AVRG	0.646	2.4
Dichlorodifluoromethane	AVRG	0.556	5.6
Methyl tert butyl ether	AVRG	0.926	8.5

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 — Calibration Date: 09/01/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
d4-1,2-Dichloroethane	AVRG	0.362	3.2
d8-Toluene	AVRG	1.273	1.5
4-Bromofluorobenzene	AVRG	0.508	2.1
d4-1,2-Dichlorobenzene	AVRG	0.841	1.7
Dibromofluoromethane	AVRG	0.442	3.0

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 — Cont. Calib. Date: 09/08/11

Init. Calib. Date: 09/01/11 — Cont. Calib. Time: 0950

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
Chloromethane	0.508	0.496	0.100	AVRG	-2.4	
Vinyl Chloride	0.624	0.591	0.010	AVRG	-5.3	
Bromomethane	0.376	0.361	0.010	AVRG	-4.0	
Chloroethane	0.392	0.375	0.010	AVRG	-4.3	
Trichlorofluoromethane	0.849	0.826	0.010	AVRG	-2.7	
Acrolein	0.027	0.016	0.010	AVRG	-40.7	<-
112Trichloro122Trifluoroetha	0.608	0.593	0.010	AVRG	-2.5	
Acetone	0.039	0.038	0.010	AVRG	-2.6	
1,1-Dichloroethene	0.507	0.493	0.010	AVRG	-2.8	
Bromoethane	0.421	0.428	0.010	AVRG	1.7	
Iodomethane	0.880	0.881	0.010	AVRG	0.1	
Methylene Chloride	10.000	9.894	0.010	LINR	-1.1	
Acrylonitrile	0.048	0.047	0.010	AVRG	-2.1	
Carbon Disulfide	1.706	1.667	0.010	AVRG	-2.3	
Trans-1,2-Dichloroethene	0.574	0.570	0.010	AVRG	-0.7	
Vinyl Acetate	0.294	0.278	0.010	AVRG	-5.4	
1,1-Dichloroethane	0.864	0.842	0.100	AVRG	-2.5	
2-Butanone	0.056	0.053	0.010	AVRG	-5.4	
2,2-Dichloropropane	0.787	0.788	0.010	AVRG	0.1	
Cis-1,2-Dichloroethene	0.554	0.529	0.010	AVRG	-4.5	
Chloroform	0.867	0.869	0.010	AVRG	0.2	
Bromochloromethane	0.201	0.194	0.010	AVRG	-3.5	
1,1,1-Trichloroethane	0.919	0.906	0.010	AVRG	-1.4	
1,1-Dichloropropene	0.455	0.455	0.010	AVRG	0.0	
Carbon Tetrachloride	0.484	0.480	0.010	AVRG	-0.8	
1,2-Dichloroethane	0.267	0.258	0.010	AVRG	-3.4	
Benzene	1.246	1.236	0.010	AVRG	-0.8	
Trichloroethene	0.374	0.361	0.010	AVRG	-3.5	
1,2-Dichloropropane	0.250	0.251	0.010	AVRG	0.4	
Bromodichloromethane	0.326	0.316	0.010	AVRG	-3.1	
Dibromomethane	0.110	0.105	0.010	AVRG	-4.5	
2-Chloroethyl Vinyl Ether	0.080	0.076	0.010	AVRG	-5.0	
4-Methyl-2-Pentanone	0.096	0.091	0.010	AVRG	-5.2	
Cis 1,3-dichloropropene	0.363	0.356	0.010	AVRG	-1.9	
Toluene	0.865	0.855	0.010	AVRG	-1.2	
Trans 1,3-Dichloropropene	0.291	0.280	0.010	AVRG	-3.8	
2-Hexanone	0.065	0.060	0.010	AVRG	-7.7	

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 — Cont. Calib. Date: 09/08/11

Init. Calib. Date: 09/01/11 — Cont. Calib. Time: 0950

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
1,1,2-Trichloroethane	0.162	0.151	0.010	AVRG	-6.8	
1,3-Dichloropropane	0.279	0.276	0.010	AVRG	-1.1	
Tetrachloroethene	0.410	0.394	0.010	AVRG	-3.9	
Chlorodibromomethane	0.200	0.195	0.010	AVRG	-2.5	
1,2-Dibromoethane	0.156	0.148	0.010	AVRG	-5.1	
Chlorobenzene	0.993	0.975	0.300	AVRG	-1.8	
Ethyl Benzene	1.804	1.790	0.010	AVRG	-0.8	
1,1,1,2-Tetrachloroethane	0.317	0.302	0.010	AVRG	-4.7	
m,p-xylene	0.721	0.719	0.010	AVRG	-0.3	
o-Xylene	0.713	0.693	0.010	AVRG	-2.8	
Styrene	1.052	1.040	0.010	AVRG	-1.1	
Bromoform	0.172	0.171	0.100	AVRG	-0.6	
1,1,2,2-Tetrachloroethane	0.316	0.291	0.300	AVRG	-7.9	*
1,2,3-Trichloropropane	0.102	0.101	0.010	AVRG	-1.0	
Trans-1,4-Dichloro 2-Butene	0.079	0.079	0.010	AVRG	0.0	
N-Propyl Benzene	3.641	3.796	0.010	AVRG	4.2	
Bromobenzene	0.670	0.665	0.010	AVRG	-0.7	
Isopropyl Benzene	3.239	3.358	0.010	AVRG	3.7	
2-Chloro Toluene	2.283	2.320	0.010	AVRG	1.6	
4-Chloro Toluene	2.286	2.333	0.010	AVRG	2.0	
T-Butyl Benzene	2.531	2.601	0.010	AVRG	2.8	
1,3,5-Trimethyl Benzene	2.826	2.968	0.010	AVRG	5.0	
1,2,4-Trimethylbenzene	2.883	2.958	0.010	AVRG	2.6	
S-Butyl Benzene	3.636	3.792	0.010	AVRG	4.3	
4-Isopropyl Toluene	3.158	3.276	0.010	AVRG	3.7	
1,3-Dichlorobenzene	1.551	1.501	0.010	AVRG	-3.2	
1,4-Dichlorobenzene	1.528	1.473	0.010	AVRG	-3.6	
N-Butyl Benzene	2.757	2.889	0.010	AVRG	4.8	
1,2-Dichlorobenzene	1.308	1.252	0.010	AVRG	-4.3	
1,2-Dibromo 3-Chloropropane	0.053	0.048	0.010	AVRG	-9.4	
1,2,4-Trichlorobenzene	0.873	0.858	0.010	AVRG	-1.7	
Hexachloro 1,3-Butadiene	0.458	0.468	0.010	AVRG	2.2	
Naphthalene	1.126	1.082	0.010	AVRG	-3.9	
1,2,3-Trichlorobenzene	0.646	0.616	0.010	AVRG	-4.6	
Dichlorodifluoromethane	0.556	0.530	0.010	AVRG	-4.7	
Methyl tert butyl ether	0.926	0.868	0.010	AVRG	-6.3	

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC | Client: AMEC GEOMATRIX

ARI Job No: TL08 | Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 | Cont. Calib. Date: 09/08/11

Init. Calib. Date: 09/01/11 | Cont. Calib. Time: 0950

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.362	0.352	0.010	AVRG	-2.8
d8-Toluene	1.273	1.271	0.010	AVRG	-0.2
4-Bromofluorobenzene	0.508	0.500	0.010	AVRG	-1.6
d4-1,2-Dichlorobenzene	0.841	0.846	0.010	AVRG	0.6
Dibromofluoromethane	0.442	0.444	0.010	AVRG	0.4

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

TL08:00045

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP 2011 SHORELINE INVESTIGA

Ical Midpoint ID: 10_00901 — Ical Date: 09/01/11

Instrument ID: NT3 — Project Run Date: 09/01/11

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	220246	5.25	342057	5.64	343287	7.71
	UPPER LIMIT	440492	5.75	684114	6.14	686574	8.21
	LOWER LIMIT	110123	4.75	171028	5.14	171644	7.21
	Sample ID						
01	ICV10	221214	5.25	349993	5.64	342678	7.71
02							
03							
04							
05							
06							
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19							
20							
21							
22							

IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CLB) = d5-Chlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP 2011 SHORELINE INVESTIGA

Ical Midpoint ID: 10_00901 — Ical Date: 09/01/11

Instrument ID: NT3 — Project Run Date: 09/01/11

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	212149	9.41				
	UPPER LIMIT	424298	9.91				
	LOWER LIMIT	106074	8.91				
	Sample ID						
01	ICV10	211854	9.41				
02							
03							
04							
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (DCB) = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP 2011 SHORELINE INVESTIGA

Ical Midpoint ID: 10_00901 — Ical Date: 09/01/11

Instrument ID: NT3 — Project Run Date: 09/08/11

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	220246	5.25	342057	5.64	343287	7.71
	UPPER LIMIT	440492	5.75	684114	6.14	686574	8.21
	LOWER LIMIT	110123	4.75	171028	5.14	171644	7.21
	Sample ID						
01	LCS0908	218188	5.26	346622	5.65	342108	7.71
02	LCS0908	212300	5.25	343806	5.64	334511	7.71
03	MB0908	217531	5.25	336804	5.64	335714	7.71
04	TRIP BLANKS	212381	5.25	332846	5.64	338986	7.72
05	FRP-090611-0	220221	5.25	332070	5.64	338953	7.71
06							
07							
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20							
21							
22							

IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CLB) = d5-Chlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

FORM VIII VOA

OLM3.2M

TL08:00052

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP 2011 SHORELINE INVESTIGA

Ical Midpoint ID: 10_00901 — Ical Date: 09/01/11

Instrument ID: NT3 — Project Run Date: 09/08/11

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	212149	9.41				
	UPPER LIMIT	424298	9.91				
	LOWER LIMIT	106074	8.91				
	Sample ID						
01	LCS0908	209477	9.41				
02	LCS0908	207509	9.41				
03	MB0908	205544	9.41				
04	TRIP BLANKS	199268	9.41				
05	FRP-090611-0	200402	9.41				
06							
07							
08							
09							
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20							
21							
22							

IS4 (DCB) = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-011**
 SAMPLE

Lab Sample ID: TL08A
LIMS ID: 11-19393
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/09/11 20:43

Sample Amount: 4.78 g-dry-wt
Percent Moisture: 12.3%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.28	1.0	< 1.0 U
74-83-9	Bromomethane	0.20	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.25	1.0	< 1.0 U
75-00-3	Chloroethane	0.48	1.0	< 1.0 U
75-09-2	Methylene Chloride	0.66	2.1	< 2.1 U
67-64-1	**Acetone**	**0.50**	**5.2**	**28 B**
75-15-0	**Carbon Disulfide**	**0.58**	**1.0**	**4.7**
75-35-4	1,1-Dichloroethene	0.35	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	0.21	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	0.28	1.0	< 1.0 U
156-59-2	**cis-1,2-Dichloroethene**	**0.25**	**1.0**	**2.3**
67-66-3	Chloroform	0.24	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	0.20	1.0	< 1.0 U
78-93-3	**2-Butanone**	**0.54**	**5.2**	**4.3 J**
71-55-6	1,1,1-Trichloroethane	0.24	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	0.22	1.0	< 1.0 U
108-05-4	Vinyl Acetate	0.40	5.2	< 5.2 U
75-27-4	Bromodichloromethane	0.27	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	0.17	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	0.24	1.0	< 1.0 U
79-01-6	**Trichloroethene**	**0.22**	**1.0**	**0.9 J**
124-48-1	Dibromochloromethane	0.28	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	0.30	1.0	< 1.0 U
71-43-2	**Benzene**	**0.31**	**1.0**	**0.9 J**
10061-02-6	trans-1,3-Dichloropropene	0.23	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	0.29	5.2	< 5.2 U
75-25-2	Bromoform	0.31	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.44	5.2	< 5.2 U
591-78-6	2-Hexanone	0.46	5.2	< 5.2 U
127-18-4	Tetrachloroethene	0.27	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	0.26	1.0	< 1.0 U
108-88-3	**Toluene**	**0.16**	**1.0**	**1.6**
108-90-7	Chlorobenzene	0.23	1.0	< 1.0 U
100-41-4	Ethylbenzene	0.21	1.0	< 1.0 U
100-42-5	Styrene	0.14	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	0.28	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.30	2.1	< 2.1 U
179601-23-1	m,p-Xylene	0.41	1.0	< 1.0 U
95-47-6	o-Xylene	0.23	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	0.31	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.24	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.24	1.0	< 1.0 U
107-02-8	Acrolein	4.0	52	< 52 U
74-88-4	Methyl Iodide	0.22	1.0	< 1.0 U
74-96-4	Bromoethane	0.46	2.1	< 2.1 U
107-13-1	Acrylonitrile	1.1	5.2	< 5.2 U
563-58-6	1,1-Dichloropropene	0.33	1.0	< 1.0 U
74-95-3	Dibromomethane	0.15	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	0.24	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	0.61	5.2	< 5.2 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-011**
 SAMPLE

Lab Sample ID: TL08A
LIMS ID: 11-19393
Matrix: Soil
Date Analyzed: 09/09/11 20:43

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.54	2.1	< 2.1 U
110-57-6	trans-1,4-Dichloro-2-butene	0.46	5.2	< 5.2 U
108-67-8	1,3,5-Trimethylbenzene	0.27	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	0.24	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	0.43	5.2	< 5.2 U
106-93-4	Ethylene Dibromide	0.18	1.0	< 1.0 U
74-97-5	Bromochloromethane	0.34	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	0.31	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	0.22	1.0	< 1.0 U
98-82-8	Isopropylbenzene	0.24	1.0	< 1.0 U
103-65-1	n-Propylbenzene	0.28	1.0	< 1.0 U
108-86-1	Bromobenzene	0.16	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	0.31	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	0.29	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	0.32	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	0.25	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	0.25	1.0	< 1.0 U
104-51-8	n-Butylbenzene	0.27	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	0.35	5.2	< 5.2 U
91-20-3	Naphthalene	0.45	5.2	< 5.2 U
87-61-6	1,2,3-Trichlorobenzene	0.32	5.2	< 5.2 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	99.2%
Bromofluorobenzene	83.6%
d4-1,2-Dichlorobenzene	97.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-012**
 SAMPLE

Lab Sample ID: TL08B
LIMS ID: 11-19394
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/09/11 21:10

Sample Amount: 4.30 g-dry-wt
Percent Moisture: 12.2%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.31	1.2	< 1.2 U
74-83-9	Bromomethane	0.22	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.27	1.2	< 1.2 U
75-00-3	Chloroethane	0.54	1.2	< 1.2 U
75-09-2	Methylene Chloride	0.74	2.3	< 2.3 U
67-64-1	**Acetone**	**0.56**	**5.8**	**23 B**
75-15-0	**Carbon Disulfide**	**0.65**	**1.2**	**14**
75-35-4	1,1-Dichloroethene	0.39	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.24	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.31	1.2	< 1.2 U
156-59-2	**cis-1,2-Dichloroethene**	**0.28**	**1.2**	**0.9 J**
67-66-3	Chloroform	0.27	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.22	1.2	< 1.2 U
78-93-3	**2-Butanone**	**0.60**	**5.8**	**3.4 J**
71-55-6	1,1,1-Trichloroethane	0.26	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.25	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.44	5.8	< 5.8 U
75-27-4	Bromodichloromethane	0.30	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.19	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.26	1.2	< 1.2 U
79-01-6	Trichloroethene	0.25	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.31	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.33	1.2	< 1.2 U
71-43-2	Benzene	0.34	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.25	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.32	5.8	< 5.8 U
75-25-2	Bromoform	0.35	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.49	5.8	< 5.8 U
591-78-6	2-Hexanone	0.51	5.8	< 5.8 U
127-18-4	Tetrachloroethene	0.30	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.29	1.2	< 1.2 U
108-88-3	**Toluene**	**0.18**	**1.2**	**0.6 J**
108-90-7	Chlorobenzene	0.25	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.23	1.2	< 1.2 U
100-42-5	Styrene	0.16	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.31	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.33	2.3	< 2.3 U
179601-23-1	m,p-Xylene	0.46	1.2	< 1.2 U
95-47-6	o-Xylene	0.26	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.34	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.26	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.27	1.2	< 1.2 U
107-02-8	Acrolein	4.4	58	< 58 U
74-88-4	Methyl Iodide	0.25	1.2	< 1.2 U
74-96-4	Bromoethane	0.51	2.3	< 2.3 U
107-13-1	Acrylonitrile	1.2	5.8	< 5.8 U
563-58-6	1,1-Dichloropropene	0.36	1.2	< 1.2 U
74-95-3	Dibromomethane	0.17	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.27	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.68	5.8	< 5.8 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-012**
 SAMPLE

Lab Sample ID: TL08B
LIMS ID: 11-19394
Matrix: Soil
Date Analyzed: 09/09/11 21:10

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.60	2.3	< 2.3 U
110-57-6	trans-1,4-Dichloro-2-butene	0.51	5.8	< 5.8 U
108-67-8	1,3,5-Trimethylbenzene	0.30	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.27	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.48	5.8	< 5.8 U
106-93-4	Ethylene Dibromide	0.20	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.38	1.2	< 1.2 U
594-20-7	2,2-Dichloropropane	0.34	1.2	< 1.2 U
142-28-9	1,3-Dichloropropane	0.24	1.2	< 1.2 U
98-82-8	Isopropylbenzene	0.27	1.2	< 1.2 U
103-65-1	n-Propylbenzene	0.32	1.2	< 1.2 U
108-86-1	Bromobenzene	0.18	1.2	< 1.2 U
95-49-8	2-Chlorotoluene	0.35	1.2	< 1.2 U
106-43-4	4-Chlorotoluene	0.32	1.2	< 1.2 U
98-06-6	tert-Butylbenzene	0.36	1.2	< 1.2 U
135-98-8	sec-Butylbenzene	0.28	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.27	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.30	1.2	< 1.2 U
120-82-1	1,2,4-Trichlorobenzene	0.39	5.8	< 5.8 U
91-20-3	Naphthalene	0.50	5.8	< 5.8 U
87-61-6	1,2,3-Trichlorobenzene	0.35	5.8	< 5.8 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	101%
Bromofluorobenzene	92.9%
d4-1,2-Dichlorobenzene	99.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-013**
 SAMPLE

Lab Sample ID: TL08C
LIMS ID: 11-19395
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/09/11 21:38

Sample Amount: 2.35 g-dry-wt
Percent Moisture: 41.5%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.56	2.1	< 2.1 U
74-83-9	Bromomethane	0.40	2.1	< 2.1 U
75-01-4	Vinyl Chloride	0.50	2.1	< 2.1 U
75-00-3	Chloroethane	0.98	2.1	< 2.1 U
75-09-2	Methylene Chloride	1.4	4.3	< 4.3 U
67-64-1	**Acetone**	**1.0**	**11**	**150 B**
75-15-0	**Carbon Disulfide**	**1.2**	**2.1**	**4.2**
75-35-4	1,1-Dichloroethene	0.71	2.1	< 2.1 U
75-34-3	1,1-Dichloroethane	0.43	2.1	< 2.1 U
156-60-5	trans-1,2-Dichloroethene	0.57	2.1	< 2.1 U
156-59-2	**cis-1,2-Dichloroethene**	**0.51**	**2.1**	**2.5**
67-66-3	Chloroform	0.50	2.1	< 2.1 U
107-06-2	1,2-Dichloroethane	0.41	2.1	< 2.1 U
78-93-3	**2-Butanone**	**1.1**	**11**	**16**
71-55-6	1,1,1-Trichloroethane	0.48	2.1	< 2.1 U
56-23-5	Carbon Tetrachloride	0.45	2.1	< 2.1 U
108-05-4	Vinyl Acetate	0.81	11	< 11 U
75-27-4	Bromodichloromethane	0.54	2.1	< 2.1 U
78-87-5	1,2-Dichloropropane	0.34	2.1	< 2.1 U
10061-01-5	cis-1,3-Dichloropropene	0.48	2.1	< 2.1 U
79-01-6	**Trichloroethene**	**0.45**	**2.1**	**4.0**
124-48-1	Dibromochloromethane	0.57	2.1	< 2.1 U
79-00-5	1,1,2-Trichloroethane	0.61	2.1	< 2.1 U
71-43-2	**Benzene**	**0.63**	**2.1**	**1.7 J**
10061-02-6	trans-1,3-Dichloropropene	0.46	2.1	< 2.1 U
110-75-8	2-Chloroethylvinylether	0.59	11	< 11 U
75-25-2	Bromoform	0.63	2.1	< 2.1 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.89	11	< 11 U
591-78-6	2-Hexanone	0.93	11	< 11 U
127-18-4	**Tetrachloroethene**	**0.55**	**2.1**	**1.7 J**
79-34-5	1,1,2,2-Tetrachloroethane	0.54	2.1	< 2.1 U
108-88-3	**Toluene**	**0.32**	**2.1**	**2.1 J**
108-90-7	Chlorobenzene	0.47	2.1	< 2.1 U
100-41-4	Ethylbenzene	0.43	2.1	< 2.1 U
100-42-5	Styrene	0.29	2.1	< 2.1 U
75-69-4	Trichlorofluoromethane	0.57	2.1	< 2.1 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.61	4.3	< 4.3 U
179601-23-1	m,p-Xylene	0.83	2.1	< 2.1 U
95-47-6	o-Xylene	0.48	2.1	< 2.1 U
95-50-1	1,2-Dichlorobenzene	0.62	2.1	< 2.1 U
541-73-1	1,3-Dichlorobenzene	0.48	2.1	< 2.1 U
106-46-7	1,4-Dichlorobenzene	0.49	2.1	< 2.1 U
107-02-8	Acrolein	8.1	110	< 110 U
74-88-4	Methyl Iodide	0.46	2.1	< 2.1 U
74-96-4	Bromoethane	0.94	4.3	< 4.3 U
107-13-1	Acrylonitrile	2.2	11	< 11 U
563-58-6	1,1-Dichloropropene	0.66	2.1	< 2.1 U
74-95-3	Dibromomethane	0.31	2.1	< 2.1 U
630-20-6	1,1,1,2-Tetrachloroethane	0.50	2.1	< 2.1 U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	11	< 11 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-013**
 SAMPLE

Lab Sample ID: TL08C
LIMS ID: 11-19395
Matrix: Soil
Date Analyzed: 09/09/11 21:38

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	1.1	4.3	< 4.3 U
110-57-6	trans-1,4-Dichloro-2-butene	0.93	11	< 11 U
108-67-8	1,3,5-Trimethylbenzene	0.54	2.1	< 2.1 U
95-63-6	1,2,4-Trimethylbenzene	0.49	2.1	< 2.1 U
87-68-3	Hexachlorobutadiene	0.87	11	< 11 U
106-93-4	Ethylene Dibromide	0.37	2.1	< 2.1 U
74-97-5	Bromochloromethane	0.69	2.1	< 2.1 U
594-20-7	2,2-Dichloropropane	0.62	2.1	< 2.1 U
142-28-9	1,3-Dichloropropane	0.44	2.1	< 2.1 U
98-82-8	Isopropylbenzene	0.50	2.1	< 2.1 U
103-65-1	n-Propylbenzene	0.58	2.1	< 2.1 U
108-86-1	Bromobenzene	0.33	2.1	< 2.1 U
95-49-8	2-Chlorotoluene	0.64	2.1	< 2.1 U
106-43-4	4-Chlorotoluene	0.59	2.1	< 2.1 U
98-06-6	tert-Butylbenzene	0.65	2.1	< 2.1 U
135-98-8	sec-Butylbenzene	0.51	2.1	< 2.1 U
99-87-6	**4-Isopropyltoluene**	**0.50**	**2.1**	**24**
104-51-8	n-Butylbenzene	0.56	2.1	< 2.1 U
120-82-1	1,2,4-Trichlorobenzene	0.71	11	< 11 U
91-20-3	Naphthalene	0.91	11	< 11 U
87-61-6	1,2,3-Trichlorobenzene	0.65	11	< 11 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	94.8%
Bromofluorobenzene	81.5%
d4-1,2-Dichlorobenzene	95.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-013**
 REANALYSIS

Lab Sample ID: TL08C
LIMS ID: 11-19395
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/12/11 10:14

Sample Amount: 2.42 g-dry-wt
Percent Moisture: 41.5%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.54	2.1	< 2.1 U
74-83-9	Bromomethane	0.39	2.1	< 2.1 U
75-01-4	Vinyl Chloride	0.49	2.1	< 2.1 U
75-00-3	Chloroethane	0.95	2.1	< 2.1 U
75-09-2	Methylene Chloride	1.3	4.1	< 4.1 U
67-64-1	**Acetone**	**1.0**	**10**	**65 B**
75-15-0	**Carbon Disulfide**	**1.2**	**2.1**	**2.1**
75-35-4	1,1-Dichloroethene	0.69	2.1	< 2.1 U
75-34-3	1,1-Dichloroethane	0.42	2.1	< 2.1 U
156-60-5	trans-1,2-Dichloroethene	0.55	2.1	< 2.1 U
156-59-2	**cis-1,2-Dichloroethene**	**0.50**	**2.1**	**1.3 J**
67-66-3	Chloroform	0.48	2.1	< 2.1 U
107-06-2	1,2-Dichloroethane	0.39	2.1	< 2.1 U
78-93-3	**2-Butanone**	**1.1**	**10**	**8.8 J**
71-55-6	1,1,1-Trichloroethane	0.47	2.1	< 2.1 U
56-23-5	Carbon Tetrachloride	0.44	2.1	< 2.1 U
108-05-4	Vinyl Acetate	0.79	10	< 10 U
75-27-4	Bromodichloromethane	0.52	2.1	< 2.1 U
78-87-5	1,2-Dichloropropane	0.33	2.1	< 2.1 U
10061-01-5	cis-1,3-Dichloropropene	0.47	2.1	< 2.1 U
79-01-6	**Trichloroethene**	**0.44**	**2.1**	**1.5 J**
124-48-1	Dibromochloromethane	0.55	2.1	< 2.1 U
79-00-5	1,1,2-Trichloroethane	0.59	2.1	< 2.1 U
71-43-2	Benzene	0.61	2.1	< 2.1 U
10061-02-6	trans-1,3-Dichloropropene	0.45	2.1	< 2.1 U
110-75-8	2-Chloroethylvinylether	0.57	10	< 10 U
75-25-2	Bromoform	0.61	2.1	< 2.1 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.87	10	< 10 U
591-78-6	2-Hexanone	0.91	10	< 10 U
127-18-4	Tetrachloroethene	0.53	2.1	< 2.1 U
79-34-5	1,1,2,2-Tetrachloroethane	0.52	2.1	< 2.1 U
108-88-3	**Toluene**	**0.31**	**2.1**	**1.9 J**
108-90-7	Chlorobenzene	0.45	2.1	< 2.1 U
100-41-4	Ethylbenzene	0.42	2.1	< 2.1 U
100-42-5	Styrene	0.29	2.1	< 2.1 U
75-69-4	Trichlorofluoromethane	0.55	2.1	< 2.1 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.59	4.1	< 4.1 U
179601-23-1	m,p-Xylene	0.81	2.1	< 2.1 U
95-47-6	o-Xylene	0.46	2.1	< 2.1 U
95-50-1	1,2-Dichlorobenzene	0.61	2.1	< 2.1 U
541-73-1	1,3-Dichlorobenzene	0.47	2.1	< 2.1 U
106-46-7	1,4-Dichlorobenzene	0.48	2.1	< 2.1 U
107-02-8	Acrolein	7.9	100	< 100 U
74-88-4	Methyl Iodide	0.44	2.1	< 2.1 U
74-96-4	Bromoethane	0.91	4.1	< 4.1 U
107-13-1	Acrylonitrile	2.1	10	< 10 U
563-58-6	1,1-Dichloropropene	0.64	2.1	< 2.1 U
74-95-3	Dibromomethane	0.30	2.1	< 2.1 U
630-20-6	1,1,1,2-Tetrachloroethane	0.48	2.1	< 2.1 U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	10	< 10 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-013**
 REANALYSIS

Lab Sample ID: TL08C
LIMS ID: 11-19395
Matrix: Soil
Date Analyzed: 09/12/11 10:14

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	1.1	4.1	< 4.1 U
110-57-6	trans-1,4-Dichloro-2-butene	0.90	10	< 10 U
108-67-8	1,3,5-Trimethylbenzene	0.52	2.1	< 2.1 U
95-63-6	1,2,4-Trimethylbenzene	0.48	2.1	< 2.1 U
87-68-3	Hexachlorobutadiene	0.85	10	< 10 U
106-93-4	Ethylene Dibromide	0.36	2.1	< 2.1 U
74-97-5	Bromochloromethane	0.67	2.1	< 2.1 U
594-20-7	2,2-Dichloropropane	0.60	2.1	< 2.1 U
142-28-9	1,3-Dichloropropane	0.43	2.1	< 2.1 U
98-82-8	Isopropylbenzene	0.48	2.1	< 2.1 U
103-65-1	n-Propylbenzene	0.56	2.1	< 2.1 U
108-86-1	Bromobenzene	0.32	2.1	< 2.1 U
95-49-8	2-Chlorotoluene	0.62	2.1	< 2.1 U
106-43-4	4-Chlorotoluene	0.57	2.1	< 2.1 U
98-06-6	tert-Butylbenzene	0.63	2.1	< 2.1 U
135-98-8	sec-Butylbenzene	0.50	2.1	< 2.1 U
99-87-6	**4-Isopropyltoluene**	**0.49**	**2.1**	**9.2**
104-51-8	**n-Butylbenzene**	**0.54**	**2.1**	**1.3 J**
120-82-1	1,2,4-Trichlorobenzene	0.69	10	< 10 U
91-20-3	Naphthalene	0.89	10	< 10 U
87-61-6	1,2,3-Trichlorobenzene	0.63	10	< 10 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	88.5%
Bromofluorobenzene	74.9%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-014**
 SAMPLE

Lab Sample ID: TL08D
LIMS ID: 11-19396
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/09/11 22:05

Sample Amount: 3.72 g-dry-wt
Percent Moisture: 20.4%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.35	1.3	< 1.3 U
74-83-9	Bromomethane	0.25	1.3	< 1.3 U
75-01-4	Vinyl Chloride	0.32	1.3	< 1.3 U
75-00-3	Chloroethane	0.62	1.3	< 1.3 U
75-09-2	Methylene Chloride	0.85	2.7	< 2.7 U
67-64-1	**Acetone**	**0.65**	**6.7**	**14 B**
75-15-0	**Carbon Disulfide**	**0.75**	**1.3**	**6.3**
75-35-4	1,1-Dichloroethene	0.45	1.3	< 1.3 U
75-34-3	1,1-Dichloroethane	0.27	1.3	< 1.3 U
156-60-5	trans-1,2-Dichloroethene	0.36	1.3	< 1.3 U
156-59-2	cis-1,2-Dichloroethene	0.32	1.3	< 1.3 U
67-66-3	Chloroform	0.31	1.3	< 1.3 U
107-06-2	1,2-Dichloroethane	0.26	1.3	< 1.3 U
78-93-3	2-Butanone	0.69	6.7	< 6.7 U
71-55-6	1,1,1-Trichloroethane	0.30	1.3	< 1.3 U
56-23-5	Carbon Tetrachloride	0.29	1.3	< 1.3 U
108-05-4	Vinyl Acetate	0.51	6.7	< 6.7 U
75-27-4	Bromodichloromethane	0.34	1.3	< 1.3 U
78-87-5	1,2-Dichloropropane	0.22	1.3	< 1.3 U
10061-01-5	cis-1,3-Dichloropropene	0.30	1.3	< 1.3 U
79-01-6	Trichloroethene	0.28	1.3	< 1.3 U
124-48-1	Dibromochloromethane	0.36	1.3	< 1.3 U
79-00-5	1,1,2-Trichloroethane	0.38	1.3	< 1.3 U
71-43-2	Benzene	0.40	1.3	< 1.3 U
10061-02-6	trans-1,3-Dichloropropene	0.29	1.3	< 1.3 U
110-75-8	2-Chloroethylvinylether	0.37	6.7	< 6.7 U
75-25-2	Bromoform	0.40	1.3	< 1.3 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.56	6.7	< 6.7 U
591-78-6	2-Hexanone	0.59	6.7	< 6.7 U
127-18-4	Tetrachloroethene	0.35	1.3	< 1.3 U
79-34-5	1,1,2,2-Tetrachloroethane	0.34	1.3	< 1.3 U
108-88-3	Toluene	0.20	1.3	< 1.3 U
108-90-7	Chlorobenzene	0.29	1.3	< 1.3 U
100-41-4	Ethylbenzene	0.27	1.3	< 1.3 U
100-42-5	Styrene	0.19	1.3	< 1.3 U
75-69-4	Trichlorofluoromethane	0.36	1.3	< 1.3 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.39	2.7	< 2.7 U
179601-23-1	m,p-Xylene	0.53	1.3	< 1.3 U
95-47-6	o-Xylene	0.30	1.3	< 1.3 U
95-50-1	1,2-Dichlorobenzene	0.39	1.3	< 1.3 U
541-73-1	1,3-Dichlorobenzene	0.31	1.3	< 1.3 U
106-46-7	1,4-Dichlorobenzene	0.31	1.3	< 1.3 U
107-02-8	Acrolein	5.1	67	< 67 U
74-88-4	Methyl Iodide	0.29	1.3	< 1.3 U
74-96-4	Bromoethane	0.59	2.7	< 2.7 U
107-13-1	Acrylonitrile	1.4	6.7	< 6.7 U
563-58-6	1,1-Dichloropropene	0.42	1.3	< 1.3 U
74-95-3	Dibromomethane	0.20	1.3	< 1.3 U
630-20-6	1,1,1,2-Tetrachloroethane	0.31	1.3	< 1.3 U
96-12-8	1,2-Dibromo-3-chloropropane	0.79	6.7	< 6.7 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-014**
 SAMPLE

Lab Sample ID: TL08D
LIMS ID: 11-19396
Matrix: Soil
Date Analyzed: 09/09/11 22:05

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.69	2.7	< 2.7 U
110-57-6	trans-1,4-Dichloro-2-butene	0.59	6.7	< 6.7 U
108-67-8	1,3,5-Trimethylbenzene	0.34	1.3	< 1.3 U
95-63-6	1,2,4-Trimethylbenzene	0.31	1.3	< 1.3 U
87-68-3	Hexachlorobutadiene	0.55	6.7	< 6.7 U
106-93-4	Ethylene Dibromide	0.24	1.3	< 1.3 U
74-97-5	Bromochloromethane	0.43	1.3	< 1.3 U
594-20-7	2,2-Dichloropropane	0.39	1.3	< 1.3 U
142-28-9	1,3-Dichloropropane	0.28	1.3	< 1.3 U
98-82-8	Isopropylbenzene	0.31	1.3	< 1.3 U
103-65-1	n-Propylbenzene	0.37	1.3	< 1.3 U
108-86-1	Bromobenzene	0.21	1.3	< 1.3 U
95-49-8	2-Chlorotoluene	0.40	1.3	< 1.3 U
106-43-4	4-Chlorotoluene	0.37	1.3	< 1.3 U
98-06-6	tert-Butylbenzene	0.41	1.3	< 1.3 U
135-98-8	sec-Butylbenzene	0.32	1.3	< 1.3 U
99-87-6	4-Isopropyltoluene	0.32	1.3	< 1.3 U
104-51-8	n-Butylbenzene	0.35	1.3	< 1.3 U
120-82-1	1,2,4-Trichlorobenzene	0.45	6.7	< 6.7 U
91-20-3	Naphthalene	0.58	6.7	< 6.7 U
87-61-6	1,2,3-Trichlorobenzene	0.41	6.7	< 6.7 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	111%
d8-Toluene	102%
Bromofluorobenzene	96.8%
d4-1,2-Dichlorobenzene	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-015**
 SAMPLE

Lab Sample ID: TL08E
LIMS ID: 11-19397
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/09/11 22:33

Sample Amount: 4.02 g-dry-wt
Percent Moisture: 23.5%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.33	1.2	< 1.2 U
74-83-9	Bromomethane	0.23	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.29	1.2	< 1.2 U
75-00-3	Chloroethane	0.57	1.2	< 1.2 U
75-09-2	Methylene Chloride	0.79	2.5	< 2.5 U
67-64-1	**Acetone**	**0.60**	**6.2**	**13 B**
75-15-0	**Carbon Disulfide**	**0.70**	**1.2**	**4.6**
75-35-4	1,1-Dichloroethene	0.42	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.25	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.33	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.30	1.2	< 1.2 U
67-66-3	Chloroform	0.29	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.24	1.2	< 1.2 U
78-93-3	2-Butanone	0.64	6.2	< 6.2 U
71-55-6	1,1,1-Trichloroethane	0.28	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.26	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.47	6.2	< 6.2 U
75-27-4	Bromodichloromethane	0.32	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.20	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.28	1.2	< 1.2 U
79-01-6	Trichloroethene	0.26	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.33	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.36	1.2	< 1.2 U
71-43-2	Benzene	0.37	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.27	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.34	6.2	< 6.2 U
75-25-2	Bromoform	0.37	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.52	6.2	< 6.2 U
591-78-6	2-Hexanone	0.55	6.2	< 6.2 U
127-18-4	Tetrachloroethene	0.32	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.31	1.2	< 1.2 U
108-88-3	Toluene	0.19	1.2	< 1.2 U
108-90-7	Chlorobenzene	0.27	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.25	1.2	< 1.2 U
100-42-5	Styrene	0.17	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.33	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.36	2.5	< 2.5 U
179601-23-1	m,p-Xylene	0.49	1.2	< 1.2 U
95-47-6	o-Xylene	0.28	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.36	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.28	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.29	1.2	< 1.2 U
107-02-8	Acrolein	4.7	62	< 62 U
74-88-4	Methyl Iodide	0.27	1.2	< 1.2 U
74-96-4	Bromoethane	0.55	2.5	< 2.5 U
107-13-1	Acrylonitrile	1.3	6.2	< 6.2 U
563-58-6	1,1-Dichloropropene	0.39	1.2	< 1.2 U
74-95-3	Dibromomethane	0.18	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.29	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.73	6.2	< 6.2 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-015**
 SAMPLE

Lab Sample ID: TL08E
LIMS ID: 11-19397
Matrix: Soil
Date Analyzed: 09/09/11 22:33

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.64	2.5	< 2.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.54	6.2	< 6.2 U
108-67-8	1,3,5-Trimethylbenzene	0.32	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.29	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.51	6.2	< 6.2 U
106-93-4	Ethylene Dibromide	0.22	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.40	1.2	< 1.2 U
594-20-7	2,2-Dichloropropane	0.36	1.2	< 1.2 U
142-28-9	1,3-Dichloropropane	0.26	1.2	< 1.2 U
98-82-8	Isopropylbenzene	0.29	1.2	< 1.2 U
103-65-1	n-Propylbenzene	0.34	1.2	< 1.2 U
108-86-1	Bromobenzene	0.19	1.2	< 1.2 U
95-49-8	2-Chlorotoluene	0.37	1.2	< 1.2 U
106-43-4	4-Chlorotoluene	0.34	1.2	< 1.2 U
98-06-6	tert-Butylbenzene	0.38	1.2	< 1.2 U
135-98-8	sec-Butylbenzene	0.30	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.29	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.33	1.2	< 1.2 U
120-82-1	1,2,4-Trichlorobenzene	0.41	6.2	< 6.2 U
91-20-3	Naphthalene	0.53	6.2	< 6.2 U
87-61-6	1,2,3-Trichlorobenzene	0.38	6.2	< 6.2 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	103%
Bromofluorobenzene	96.6%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-016**
 SAMPLE

Lab Sample ID: TL08F
LIMS ID: 11-19398
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/12/11 10:47

Sample Amount: 3.76 g-dry-wt
Percent Moisture: 19.8%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.35	1.3	< 1.3 U
74-83-9	Bromomethane	0.25	1.3	< 1.3 U
75-01-4	Vinyl Chloride	0.31	1.3	< 1.3 U
75-00-3	Chloroethane	0.61	1.3	< 1.3 U
75-09-2	Methylene Chloride	0.84	2.7	< 2.7 U
67-64-1	**Acetone**	**0.64**	**6.6**	**11 B** U
75-15-0	**Carbon Disulfide**	**0.74**	**1.3**	**3.3**
75-35-4	1,1-Dichloroethene	0.45	1.3	< 1.3 U
75-34-3	1,1-Dichloroethane	0.27	1.3	< 1.3 U
156-60-5	trans-1,2-Dichloroethene	0.35	1.3	< 1.3 U
156-59-2	cis-1,2-Dichloroethene	0.32	1.3	< 1.3 U
67-66-3	Chloroform	0.31	1.3	< 1.3 U
107-06-2	1,2-Dichloroethane	0.25	1.3	< 1.3 U
78-93-3	2-Butanone	0.68	6.6	< 6.6 U
71-55-6	1,1,1-Trichloroethane	0.30	1.3	< 1.3 U
56-23-5	Carbon Tetrachloride	0.28	1.3	< 1.3 U
108-05-4	Vinyl Acetate	0.51	6.6	< 6.6 U
75-27-4	Bromodichloromethane	0.34	1.3	< 1.3 U
78-87-5	1,2-Dichloropropane	0.22	1.3	< 1.3 U
10061-01-5	cis-1,3-Dichloropropene	0.30	1.3	< 1.3 U
79-01-6	Trichloroethene	0.28	1.3	< 1.3 U
124-48-1	Dibromochloromethane	0.35	1.3	< 1.3 U
79-00-5	1,1,2-Trichloroethane	0.38	1.3	< 1.3 U
71-43-2	Benzene	0.39	1.3	< 1.3 U
10061-02-6	trans-1,3-Dichloropropene	0.29	1.3	< 1.3 U
110-75-8	2-Chloroethylvinylether	0.37	6.6	< 6.6 U
75-25-2	Bromoform	0.39	1.3	< 1.3 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.56	6.6	< 6.6 U
591-78-6	2-Hexanone	0.58	6.6	< 6.6 U
127-18-4	Tetrachloroethene	0.34	1.3	< 1.3 U
79-34-5	1,1,2,2-Tetrachloroethane	0.34	1.3	< 1.3 U
108-88-3	Toluene	0.20	1.3	< 1.3 U
108-90-7	Chlorobenzene	0.29	1.3	< 1.3 U
100-41-4	Ethylbenzene	0.27	1.3	< 1.3 U
100-42-5	Styrene	0.18	1.3	< 1.3 U
75-69-4	Trichlorofluoromethane	0.35	1.3	< 1.3 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.38	2.7	< 2.7 U
179601-23-1	m,p-Xylene	0.52	1.3	< 1.3 U
95-47-6	o-Xylene	0.30	1.3	< 1.3 U
95-50-1	1,2-Dichlorobenzene	0.39	1.3	< 1.3 U
541-73-1	1,3-Dichlorobenzene	0.30	1.3	< 1.3 U
106-46-7	1,4-Dichlorobenzene	0.31	1.3	< 1.3 U
107-02-8	Acrolein	5.1	66	< 66 U
74-88-4	Methyl Iodide	0.29	1.3	< 1.3 U
74-96-4	Bromoethane	0.59	2.7	< 2.7 U
107-13-1	Acrylonitrile	1.4	6.6	< 6.6 U
563-58-6	1,1-Dichloropropene	0.41	1.3	< 1.3 U
74-95-3	Dibromomethane	0.20	1.3	< 1.3 U
630-20-6	1,1,1,2-Tetrachloroethane	0.31	1.3	< 1.3 U
96-12-8	1,2-Dibromo-3-chloropropane	0.78	6.6	< 6.6 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-016**
 SAMPLE

Lab Sample ID: TL08F
LIMS ID: 11-19398
Matrix: Soil
Date Analyzed: 09/12/11 10:47

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.69	2.7	< 2.7 U
110-57-6	trans-1,4-Dichloro-2-butene	0.58	6.6	< 6.6 U
108-67-8	1,3,5-Trimethylbenzene	0.34	1.3	< 1.3 U
95-63-6	1,2,4-Trimethylbenzene	0.31	1.3	< 1.3 U
87-68-3	Hexachlorobutadiene	0.55	6.6	< 6.6 U
106-93-4	Ethylene Dibromide	0.23	1.3	< 1.3 U
74-97-5	Bromochloromethane	0.43	1.3	< 1.3 U
594-20-7	2,2-Dichloropropane	0.39	1.3	< 1.3 U
142-28-9	1,3-Dichloropropane	0.28	1.3	< 1.3 U
98-82-8	Isopropylbenzene	0.31	1.3	< 1.3 U
103-65-1	n-Propylbenzene	0.36	1.3	< 1.3 U
108-86-1	Bromobenzene	0.20	1.3	< 1.3 U
95-49-8	2-Chlorotoluene	0.40	1.3	< 1.3 U
106-43-4	4-Chlorotoluene	0.37	1.3	< 1.3 U
98-06-6	tert-Butylbenzene	0.41	1.3	< 1.3 U
135-98-8	sec-Butylbenzene	0.32	1.3	< 1.3 U
99-87-6	4-Isopropyltoluene	0.31	1.3	< 1.3 U
104-51-8	n-Butylbenzene	0.35	1.3	< 1.3 U
120-82-1	1,2,4-Trichlorobenzene	0.44	6.6	< 6.6 U
91-20-3	Naphthalene	0.57	6.6	< 6.6 U
87-61-6	1,2,3-Trichlorobenzene	0.41	6.6	< 6.6 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	104%
Bromofluorobenzene	95.3%
d4-1,2-Dichlorobenzene	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-017**
 SAMPLE

Lab Sample ID: TL08G
LIMS ID: 11-19399
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/12/11 11:15

Sample Amount: 4.20 g-dry-wt
Percent Moisture: 18.7%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.31	1.2	< 1.2 U
74-83-9	Bromomethane	0.22	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.28	1.2	< 1.2 U
75-00-3	Chloroethane	0.55	1.2	< 1.2 U
75-09-2	**Methylene Chloride**	**0.76**	**2.4**	~~**1.0 J**~~ 2.4U
67-64-1	**Acetone**	**0.57**	**6.0**	**22 B**
75-15-0	**Carbon Disulfide**	**0.67**	**1.2**	**4.4**
75-35-4	1,1-Dichloroethene	0.40	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.24	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.32	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.29	1.2	< 1.2 U
67-66-3	Chloroform	0.28	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.23	1.2	< 1.2 U
78-93-3	**2-Butanone**	**0.61**	**6.0**	**2.9 J**
71-55-6	1,1,1-Trichloroethane	0.27	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.25	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.45	6.0	< 6.0 U
75-27-4	Bromodichloromethane	0.30	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.19	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.27	1.2	< 1.2 U
79-01-6	Trichloroethene	0.25	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.32	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.34	1.2	< 1.2 U
71-43-2	Benzene	0.35	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.26	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.33	6.0	< 6.0 U
75-25-2	Bromoform	0.35	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.50	6.0	< 6.0 U
591-78-6	2-Hexanone	0.52	6.0	< 6.0 U
127-18-4	Tetrachloroethene	0.31	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.30	1.2	< 1.2 U
108-88-3	**Toluene**	**0.18**	**1.2**	**61**
108-90-7	Chlorobenzene	0.26	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.24	1.2	< 1.2 U
100-42-5	Styrene	0.16	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.32	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.34	2.4	< 2.4 U
179601-23-1	m,p-Xylene	0.47	1.2	< 1.2 U
95-47-6	o-Xylene	0.27	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.35	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.27	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.28	1.2	< 1.2 U
107-02-8	Acrolein	4.5	60	< 60 U
74-88-4	Methyl Iodide	0.26	1.2	< 1.2 U
74-96-4	Bromoethane	0.52	2.4	< 2.4 U
107-13-1	Acrylonitrile	1.2	6.0	< 6.0 U
563-58-6	1,1-Dichloropropene	0.37	1.2	< 1.2 U
74-95-3	Dibromomethane	0.18	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.28	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.70	6.0	< 6.0 U

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-017**
 SAMPLE

Lab Sample ID: TL08G
LIMS ID: 11-19399
Matrix: Soil
Date Analyzed: 09/12/11 11:15

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.62	2.4	< 2.4 U
110-57-6	trans-1,4-Dichloro-2-butene	0.52	6.0	< 6.0 U
108-67-8	1,3,5-Trimethylbenzene	0.30	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.27	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.49	6.0	< 6.0 U
106-93-4	Ethylene Dibromide	0.21	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.38	1.2	< 1.2 U
594-20-7	2,2-Dichloropropane	0.35	1.2	< 1.2 U
142-28-9	1,3-Dichloropropane	0.25	1.2	< 1.2 U
98-82-8	Isopropylbenzene	0.28	1.2	< 1.2 U
103-65-1	n-Propylbenzene	0.32	1.2	< 1.2 U
108-86-1	Bromobenzene	0.18	1.2	< 1.2 U
95-49-8	2-Chlorotoluene	0.36	1.2	< 1.2 U
106-43-4	4-Chlorotoluene	0.33	1.2	< 1.2 U
98-06-6	tert-Butylbenzene	0.36	1.2	< 1.2 U
135-98-8	sec-Butylbenzene	0.29	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.28	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.31	1.2	< 1.2 U
120-82-1	1,2,4-Trichlorobenzene	0.40	6.0	< 6.0 U
91-20-3	Naphthalene	0.51	6.0	< 6.0 U
87-61-6	1,2,3-Trichlorobenzene	0.36	6.0	< 6.0 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	99.6%
Bromofluorobenzene	95.6%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-018**
 SAMPLE

Lab Sample ID: TL08H
LIMS ID: 11-19400
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/12/11 11:42

Sample Amount: 4.50 g-dry-wt
Percent Moisture: 20.5%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.29	1.1	< 1.1 U
74-83-9	Bromomethane	0.21	1.1	< 1.1 U
75-01-4	Vinyl Chloride	0.26	1.1	< 1.1 U
75-00-3	Chloroethane	0.51	1.1	< 1.1 U
75-09-2	**Methylene Chloride**	**0.71**	**2.2**	**~~1.3 J~~** 2.2U
67-64-1	**Acetone**	**0.54**	**5.6**	**9.5 ~~B~~** U
75-15-0	**Carbon Disulfide**	**0.62**	**1.1**	**2.8**
75-35-4	1,1-Dichloroethene	0.37	1.1	< 1.1 U
75-34-3	1,1-Dichloroethane	0.23	1.1	< 1.1 U
156-60-5	trans-1,2-Dichloroethene	0.30	1.1	< 1.1 U
156-59-2	cis-1,2-Dichloroethene	0.27	1.1	< 1.1 U
67-66-3	Chloroform	0.26	1.1	< 1.1 U
107-06-2	1,2-Dichloroethane	0.21	1.1	< 1.1 U
78-93-3	2-Butanone	0.57	5.6	< 5.6 U
71-55-6	1,1,1-Trichloroethane	0.25	1.1	< 1.1 U
56-23-5	Carbon Tetrachloride	0.24	1.1	< 1.1 U
108-05-4	Vinyl Acetate	0.42	5.6	< 5.6 U
75-27-4	Bromodichloromethane	0.28	1.1	< 1.1 U
78-87-5	1,2-Dichloropropane	0.18	1.1	< 1.1 U
10061-01-5	cis-1,3-Dichloropropene	0.25	1.1	< 1.1 U
79-01-6	Trichloroethene	0.24	1.1	< 1.1 U
124-48-1	Dibromochloromethane	0.30	1.1	< 1.1 U
79-00-5	1,1,2-Trichloroethane	0.32	1.1	< 1.1 U
71-43-2	Benzene	0.33	1.1	< 1.1 U
10061-02-6	trans-1,3-Dichloropropene	0.24	1.1	< 1.1 U
110-75-8	2-Chloroethylvinylether	0.31	5.6	< 5.6 U
75-25-2	Bromoform	0.33	1.1	< 1.1 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.47	5.6	< 5.6 U
591-78-6	2-Hexanone	0.49	5.6	< 5.6 U
127-18-4	Tetrachloroethene	0.29	1.1	< 1.1 U
79-34-5	1,1,2,2-Tetrachloroethane	0.28	1.1	< 1.1 U
108-88-3	**Toluene**	**0.17**	**1.1**	**1.0 J**
108-90-7	Chlorobenzene	0.24	1.1	< 1.1 U
100-41-4	Ethylbenzene	0.22	1.1	< 1.1 U
100-42-5	Styrene	0.15	1.1	< 1.1 U
75-69-4	Trichlorofluoromethane	0.30	1.1	< 1.1 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.32	2.2	< 2.2 U
179601-23-1	m,p-Xylene	0.44	1.1	< 1.1 U
95-47-6	o-Xylene	0.25	1.1	< 1.1 U
95-50-1	1,2-Dichlorobenzene	0.33	1.1	< 1.1 U
541-73-1	1,3-Dichlorobenzene	0.25	1.1	< 1.1 U
106-46-7	1,4-Dichlorobenzene	0.26	1.1	< 1.1 U
107-02-8	Acrolein	4.2	56	< 56 U
74-88-4	Methyl Iodide	0.24	1.1	< 1.1 U
74-96-4	Bromoethane	0.49	2.2	< 2.2 U
107-13-1	Acrylonitrile	1.1	5.6	< 5.6 U
563-58-6	1,1-Dichloropropene	0.35	1.1	< 1.1 U
74-95-3	Dibromomethane	0.16	1.1	< 1.1 U
630-20-6	1,1,1,2-Tetrachloroethane	0.26	1.1	< 1.1 U
96-12-8	1,2-Dibromo-3-chloropropane	0.65	5.6	< 5.6 U

TL08:00076

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-018**
 SAMPLE

Lab Sample ID: TL08H
LIMS ID: 11-19400
Matrix: Soil
Date Analyzed: 09/12/11 11:42

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.57	2.2	< 2.2 U
110-57-6	trans-1,4-Dichloro-2-butene	0.49	5.6	< 5.6 U
108-67-8	1,3,5-Trimethylbenzene	0.28	1.1	< 1.1 U
95-63-6	1,2,4-Trimethylbenzene	0.26	1.1	< 1.1 U
87-68-3	Hexachlorobutadiene	0.46	5.6	< 5.6 U
106-93-4	Ethylene Dibromide	0.20	1.1	< 1.1 U
74-97-5	Bromochloromethane	0.36	1.1	< 1.1 U
594-20-7	2,2-Dichloropropane	0.32	1.1	< 1.1 U
142-28-9	1,3-Dichloropropane	0.23	1.1	< 1.1 U
98-82-8	Isopropylbenzene	0.26	1.1	< 1.1 U
103-65-1	n-Propylbenzene	0.30	1.1	< 1.1 U
108-86-1	Bromobenzene	0.17	1.1	< 1.1 U
95-49-8	2-Chlorotoluene	0.33	1.1	< 1.1 U
106-43-4	4-Chlorotoluene	0.31	1.1	< 1.1 U
98-06-6	tert-Butylbenzene	0.34	1.1	< 1.1 U
135-98-8	sec-Butylbenzene	0.27	1.1	< 1.1 U
99-87-6	4-Isopropyltoluene	0.26	1.1	< 1.1 U
104-51-8	n-Butylbenzene	0.29	1.1	< 1.1 U
120-82-1	1,2,4-Trichlorobenzene	0.37	5.6	< 5.6 U
91-20-3	Naphthalene	0.48	5.6	< 5.6 U
87-61-6	1,2,3-Trichlorobenzene	0.34	5.6	< 5.6 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	99.9%
Bromofluorobenzene	95.1%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-019**
 SAMPLE

Lab Sample ID: TL08I
LIMS ID: 11-19401
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/12/11 12:10

Sample Amount: 4.26 g-dry-wt
Percent Moisture: 21.6%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.31	1.2	< 1.2 U
74-83-9	Bromomethane	0.22	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.28	1.2	< 1.2 U
75-00-3	Chloroethane	0.54	1.2	< 1.2 U
75-09-2	**Methylene Chloride**	**0.75**	**2.3**	~~0.9 J~~ 2.3 U
67-64-1	**Acetone**	**0.57**	**5.9**	**39 B**
75-15-0	**Carbon Disulfide**	**0.66**	**1.2**	**2.3**
75-35-4	1,1-Dichloroethene	0.39	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.24	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.31	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.28	1.2	< 1.2 U
67-66-3	Chloroform	0.27	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.22	1.2	< 1.2 U
78-93-3	**2-Butanone**	**0.60**	**5.9**	**5.2 J**
71-55-6	1,1,1-Trichloroethane	0.27	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.25	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.45	5.9	< 5.9 U
75-27-4	Bromodichloromethane	0.30	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.19	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.27	1.2	< 1.2 U
79-01-6	Trichloroethene	0.25	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.31	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.34	1.2	< 1.2 U
71-43-2	**Benzene**	**0.35**	**1.2**	**0.7 J**
10061-02-6	trans-1,3-Dichloropropene	0.25	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.32	5.9	< 5.9 U
75-25-2	Bromoform	0.35	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.49	5.9	< 5.9 U
591-78-6	2-Hexanone	0.52	5.9	< 5.9 U
127-18-4	Tetrachloroethene	0.30	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.30	1.2	< 1.2 U
108-88-3	**Toluene**	**0.18**	**1.2**	**100**
108-90-7	Chlorobenzene	0.26	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.24	1.2	< 1.2 U
100-42-5	Styrene	0.16	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.31	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.34	2.3	< 2.3 U
179601-23-1	m,p-Xylene	0.46	1.2	< 1.2 U
95-47-6	o-Xylene	0.26	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.34	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.27	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.27	1.2	< 1.2 U
107-02-8	Acrolein	4.5	59	< 59 U
74-88-4	Methyl Iodide	0.25	1.2	< 1.2 U
74-96-4	Bromoethane	0.52	2.3	< 2.3 U
107-13-1	Acrylonitrile	1.2	5.9	< 5.9 U
563-58-6	1,1-Dichloropropene	0.37	1.2	< 1.2 U
74-95-3	Dibromomethane	0.17	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.27	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.69	5.9	< 5.9 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-019**
 SAMPLE

Lab Sample ID: TL08I
LIMS ID: 11-19401
Matrix: Soil
Date Analyzed: 09/12/11 12:10

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.61	2.3	< 2.3 U
110-57-6	trans-1,4-Dichloro-2-butene	0.51	5.9	< 5.9 U
108-67-8	1,3,5-Trimethylbenzene	0.30	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.27	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.48	5.9	< 5.9 U
106-93-4	Ethylene Dibromide	0.21	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.38	1.2	< 1.2 U
594-20-7	2,2-Dichloropropane	0.34	1.2	< 1.2 U
142-28-9	1,3-Dichloropropane	0.25	1.2	< 1.2 U
98-82-8	Isopropylbenzene	0.27	1.2	< 1.2 U
103-65-1	n-Propylbenzene	0.32	1.2	< 1.2 U
108-86-1	Bromobenzene	0.18	1.2	< 1.2 U
95-49-8	2-Chlorotoluene	0.35	1.2	< 1.2 U
106-43-4	4-Chlorotoluene	0.33	1.2	< 1.2 U
98-06-6	tert-Butylbenzene	0.36	1.2	< 1.2 U
135-98-8	sec-Butylbenzene	0.28	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.28	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.31	1.2	< 1.2 U
120-82-1	1,2,4-Trichlorobenzene	0.39	5.9	< 5.9 U
91-20-3	Naphthalene	0.50	5.9	< 5.9 U
87-61-6	1,2,3-Trichlorobenzene	0.36	5.9	< 5.9 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	101%
Bromofluorobenzene	92.4%
d4-1,2-Dichlorobenzene	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-020**
 SAMPLE

Lab Sample ID: TL08J
LIMS ID: 11-19402
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/12/11 12:37

Sample Amount: 3.98 g-dry-wt
Percent Moisture: 23.6%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.33	1.3	< 1.3 U
74-83-9	Bromomethane	0.23	1.3	< 1.3 U
75-01-4	Vinyl Chloride	0.30	1.3	< 1.3 U
75-00-3	Chloroethane	0.58	1.3	< 1.3 U
75-09-2	**Methylene Chloride**	**0.80**	**2.5**	~~**1.3 J**~~ 2.5U
67-64-1	**Acetone**	**0.61**	**6.3**	**53 B**
75-15-0	**Carbon Disulfide**	**0.70**	**1.3**	**5.5**
75-35-4	1,1-Dichloroethene	0.42	1.3	< 1.3 U
75-34-3	1,1-Dichloroethane	0.26	1.3	< 1.3 U
156-60-5	trans-1,2-Dichloroethene	0.33	1.3	< 1.3 U
156-59-2	cis-1,2-Dichloroethene	0.30	1.3	< 1.3 U
67-66-3	Chloroform	0.29	1.3	< 1.3 U
107-06-2	1,2-Dichloroethane	0.24	1.3	< 1.3 U
78-93-3	**2-Butanone**	**0.64**	**6.3**	**11**
71-55-6	1,1,1-Trichloroethane	0.28	1.3	< 1.3 U
56-23-5	Carbon Tetrachloride	0.27	1.3	< 1.3 U
108-05-4	Vinyl Acetate	0.48	6.3	< 6.3 U
75-27-4	Bromodichloromethane	0.32	1.3	< 1.3 U
78-87-5	1,2-Dichloropropane	0.20	1.3	< 1.3 U
10061-01-5	cis-1,3-Dichloropropene	0.28	1.3	< 1.3 U
79-01-6	Trichloroethene	0.27	1.3	< 1.3 U
124-48-1	Dibromochloromethane	0.33	1.3	< 1.3 U
79-00-5	1,1,2-Trichloroethane	0.36	1.3	< 1.3 U
71-43-2	**Benzene**	**0.37**	**1.3**	**0.7 J**
10061-02-6	trans-1,3-Dichloropropene	0.27	1.3	< 1.3 U
110-75-8	2-Chloroethylvinylether	0.35	6.3	< 6.3 U
75-25-2	Bromoform	0.37	1.3	< 1.3 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.53	6.3	< 6.3 U
591-78-6	2-Hexanone	0.55	6.3	< 6.3 U
127-18-4	Tetrachloroethene	0.32	1.3	< 1.3 U
79-34-5	1,1,2,2-Tetrachloroethane	0.32	1.3	< 1.3 U
108-88-3	**Toluene**	**0.19**	**1.3**	**14**
108-90-7	Chlorobenzene	0.28	1.3	< 1.3 U
100-41-4	Ethylbenzene	0.25	1.3	< 1.3 U
100-42-5	Styrene	0.17	1.3	< 1.3 U
75-69-4	Trichlorofluoromethane	0.33	1.3	< 1.3 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.36	2.5	< 2.5 U
179601-23-1	m,p-Xylene	0.49	1.3	< 1.3 U
95-47-6	o-Xylene	0.28	1.3	< 1.3 U
95-50-1	1,2-Dichlorobenzene	0.37	1.3	< 1.3 U
541-73-1	1,3-Dichlorobenzene	0.29	1.3	< 1.3 U
106-46-7	1,4-Dichlorobenzene	0.29	1.3	< 1.3 U
107-02-8	Acrolein	4.8	63	< 63 U
74-88-4	Methyl Iodide	0.27	1.3	< 1.3 U
74-96-4	Bromoethane	0.55	2.5	< 2.5 U
107-13-1	Acrylonitrile	1.3	6.3	< 6.3 U
563-58-6	1,1-Dichloropropene	0.39	1.3	< 1.3 U
74-95-3	Dibromomethane	0.18	1.3	< 1.3 U
630-20-6	1,1,1,2-Tetrachloroethane	0.29	1.3	< 1.3 U
96-12-8	1,2-Dibromo-3-chloropropane	0.74	6.3	< 6.3 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-020**
 SAMPLE

Lab Sample ID: TL08J
LIMS ID: 11-19402
Matrix: Soil
Date Analyzed: 09/12/11 12:37

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.65	2.5	< 2.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.55	6.3	< 6.3 U
108-67-8	1,3,5-Trimethylbenzene	0.32	1.3	< 1.3 U
95-63-6	1,2,4-Trimethylbenzene	0.29	1.3	< 1.3 U
87-68-3	Hexachlorobutadiene	0.52	6.3	< 6.3 U
106-93-4	Ethylene Dibromide	0.22	1.3	< 1.3 U
74-97-5	Bromochloromethane	0.41	1.3	< 1.3 U
594-20-7	2,2-Dichloropropane	0.37	1.3	< 1.3 U
142-28-9	1,3-Dichloropropane	0.26	1.3	< 1.3 U
98-82-8	Isopropylbenzene	0.29	1.3	< 1.3 U
103-65-1	n-Propylbenzene	0.34	1.3	< 1.3 U
108-86-1	Bromobenzene	0.19	1.3	< 1.3 U
95-49-8	2-Chlorotoluene	0.38	1.3	< 1.3 U
106-43-4	4-Chlorotoluene	0.35	1.3	< 1.3 U
98-06-6	tert-Butylbenzene	0.38	1.3	< 1.3 U
135-98-8	sec-Butylbenzene	0.30	1.3	< 1.3 U
99-87-6	4-Isopropyltoluene	0.30	1.3	< 1.3 U
104-51-8	n-Butylbenzene	0.33	1.3	< 1.3 U
120-82-1	1,2,4-Trichlorobenzene	0.42	6.3	< 6.3 U
91-20-3	Naphthalene	0.54	6.3	< 6.3 U
87-61-6	1,2,3-Trichlorobenzene	0.38	6.3	< 6.3 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	103%
Bromofluorobenzene	93.8%
d4-1,2-Dichlorobenzene	98.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-021**
 SAMPLE

Lab Sample ID: TL08K
LIMS ID: 11-19403
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/12/11 13:04

Sample Amount: 4.20 g-dry-wt
Percent Moisture: 24.6%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.31	1.2	< 1.2 U
74-83-9	Bromomethane	0.22	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.28	1.2	< 1.2 U
75-00-3	Chloroethane	0.55	1.2	< 1.2 U
75-09-2	Methylene Chloride	0.76	2.4	< 2.4 U
67-64-1	**Acetone**	**0.57**	**6.0**	**57 B**
75-15-0	**Carbon Disulfide**	**0.67**	**1.2**	**3.3**
75-35-4	1,1-Dichloroethene	0.40	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.24	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.32	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.29	1.2	< 1.2 U
67-66-3	Chloroform	0.28	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.23	1.2	< 1.2 U
78-93-3	**2-Butanone**	**0.61**	**6.0**	**11**
71-55-6	1,1,1-Trichloroethane	0.27	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.25	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.45	6.0	< 6.0 U
75-27-4	Bromodichloromethane	0.30	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.19	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.27	1.2	< 1.2 U
79-01-6	Trichloroethene	0.25	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.32	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.34	1.2	< 1.2 U
71-43-2	**Benzene**	**0.35**	**1.2**	**0.7 J**
10061-02-6	trans-1,3-Dichloropropene	0.26	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.33	6.0	< 6.0 U
75-25-2	Bromoform	0.35	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.50	6.0	< 6.0 U
591-78-6	2-Hexanone	0.52	6.0	< 6.0 U
127-18-4	Tetrachloroethene	0.31	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.30	1.2	< 1.2 U
108-88-3	**Toluene**	**0.18**	**1.2**	**15**
108-90-7	Chlorobenzene	0.26	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.24	1.2	< 1.2 U
100-42-5	Styrene	0.16	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.32	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.34	2.4	< 2.4 U
179601-23-1	m,p-Xylene	0.47	1.2	< 1.2 U
95-47-6	o-Xylene	0.27	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.35	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.27	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.28	1.2	< 1.2 U
107-02-8	Acrolein	4.5	60	< 60 U
74-88-4	Methyl Iodide	0.26	1.2	< 1.2 U
74-96-4	Bromoethane	0.52	2.4	< 2.4 U
107-13-1	Acrylonitrile	1.2	6.0	< 6.0 U
563-58-6	1,1-Dichloropropene	0.37	1.2	< 1.2 U
74-95-3	Dibromomethane	0.18	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.28	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.70	6.0	< 6.0 U

2/21/12

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-021**
 SAMPLE

Lab Sample ID: TL08K
LIMS ID: 11-19403
Matrix: Soil
Date Analyzed: 09/12/11 13:04

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.62	2.4	< 2.4 U
110-57-6	trans-1,4-Dichloro-2-butene	0.52	6.0	< 6.0 U
108-67-8	1,3,5-Trimethylbenzene	0.30	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.27	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.49	6.0	< 6.0 U
106-93-4	Ethylene Dibromide	0.21	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.38	1.2	< 1.2 U
594-20-7	2,2-Dichloropropane	0.35	1.2	< 1.2 U
142-28-9	1,3-Dichloropropane	0.25	1.2	< 1.2 U
98-82-8	Isopropylbenzene	0.28	1.2	< 1.2 U
103-65-1	n-Propylbenzene	0.32	1.2	< 1.2 U
108-86-1	Bromobenzene	0.18	1.2	< 1.2 U
95-49-8	2-Chlorotoluene	0.36	1.2	< 1.2 U
106-43-4	4-Chlorotoluene	0.33	1.2	< 1.2 U
98-06-6	tert-Butylbenzene	0.36	1.2	< 1.2 U
135-98-8	sec-Butylbenzene	0.29	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.28	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.31	1.2	< 1.2 U
120-82-1	1,2,4-Trichlorobenzene	0.40	6.0	< 6.0 U
91-20-3	Naphthalene	0.51	6.0	< 6.0 U
87-61-6	1,2,3-Trichlorobenzene	0.36	6.0	< 6.0 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	103%
Bromofluorobenzene	90.8%
d4-1,2-Dichlorobenzene	98.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-022**
 SAMPLE

Lab Sample ID: TL08L
LIMS ID: 11-19404
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/12/11 13:32

Sample Amount: 4.28 g-dry-wt
Percent Moisture: 24.1%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.31	1.2	< 1.2 U
74-83-9	Bromomethane	0.22	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.27	1.2	< 1.2 U
75-00-3	Chloroethane	0.54	1.2	< 1.2 U
75-09-2	**Methylene Chloride**	**0.74**	**2.3**	**~~0.9 J~~** 2.3U
67-64-1	**Acetone**	**0.56**	**5.8**	**22 ~~B~~**
75-15-0	**Carbon Disulfide**	**0.65**	**1.2**	**3.9**
75-35-4	1,1-Dichloroethene	0.39	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.24	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.31	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.28	1.2	< 1.2 U
67-66-3	Chloroform	0.27	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.22	1.2	< 1.2 U
78-93-3	**2-Butanone**	**0.60**	**5.8**	**3.4 J**
71-55-6	1,1,1-Trichloroethane	0.26	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.25	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.45	5.8	< 5.8 U
75-27-4	Bromodichloromethane	0.30	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.19	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.26	1.2	< 1.2 U
79-01-6	Trichloroethene	0.25	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.31	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.33	1.2	< 1.2 U
71-43-2	Benzene	0.35	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.25	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.32	5.8	< 5.8 U
75-25-2	Bromoform	0.35	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.49	5.8	< 5.8 U
591-78-6	2-Hexanone	0.51	5.8	< 5.8 U
127-18-4	Tetrachloroethene	0.30	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.30	1.2	< 1.2 U
108-88-3	Toluene	0.18	1.2	< 1.2 U
108-90-7	Chlorobenzene	0.26	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.24	1.2	< 1.2 U
100-42-5	Styrene	0.16	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.31	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.34	2.3	< 2.3 U
179601-23-1	m,p-Xylene	0.46	1.2	< 1.2 U
95-47-6	o-Xylene	0.26	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.34	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.27	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.27	1.2	< 1.2 U
107-02-8	Acrolein	4.5	58	< 58 U
74-88-4	Methyl Iodide	0.25	1.2	< 1.2 U
74-96-4	Bromoethane	0.51	2.3	< 2.3 U
107-13-1	Acrylonitrile	1.2	5.8	< 5.8 U
563-58-6	1,1-Dichloropropene	0.36	1.2	< 1.2 U
74-95-3	Dibromomethane	0.17	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.27	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.68	5.8	< 5.8 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-022**
 SAMPLE

Lab Sample ID: TL08L
LIMS ID: 11-19404
Matrix: Soil
Date Analyzed: 09/12/11 13:32

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.60	2.3	< 2.3 U
110-57-6	trans-1,4-Dichloro-2-butene	0.51	5.8	< 5.8 U
108-67-8	1,3,5-Trimethylbenzene	0.30	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.27	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.48	5.8	< 5.8 U
106-93-4	Ethylene Dibromide	0.21	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.38	1.2	< 1.2 U
594-20-7	2,2-Dichloropropane	0.34	1.2	< 1.2 U
142-28-9	1,3-Dichloropropane	0.24	1.2	< 1.2 U
98-82-8	Isopropylbenzene	0.27	1.2	< 1.2 U
103-65-1	n-Propylbenzene	0.32	1.2	< 1.2 U
108-86-1	Bromobenzene	0.18	1.2	< 1.2 U
95-49-8	2-Chlorotoluene	0.35	1.2	< 1.2 U
106-43-4	4-Chlorotoluene	0.32	1.2	< 1.2 U
98-06-6	tert-Butylbenzene	0.36	1.2	< 1.2 U
135-98-8	sec-Butylbenzene	0.28	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.28	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.31	1.2	< 1.2 U
120-82-1	1,2,4-Trichlorobenzene	0.39	5.8	< 5.8 U
91-20-3	Naphthalene	0.50	5.8	< 5.8 U
87-61-6	1,2,3-Trichlorobenzene	0.36	5.8	< 5.8 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	102%
Bromofluorobenzene	91.5%
d4-1,2-Dichlorobenzene	99.9%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-090911	Method Blank	Low	102%	103%	95.0%	101%	0
LCS-090911	Lab Control	Low	95.7%	102%	99.3%	101%	0
LCSD-090911	Lab Control Dup	Low	94.5%	107%	98.3%	102%	0
TL08A	FRP-090611-011	Low	107%	99.2%	83.6%	97.3%	0
TL08B	FRP-090611-012	Low	110%	101%	92.9%	99.7%	0
MB-091211	Method Blank	Low	97.4%	102%	95.3%	101%	0
LCS-091211	Lab Control	Low	95.9%	102%	96.8%	101%	0
LCSD-091211	Lab Control Dup	Low	94.2%	102%	98.2%	101%	0
TL08C	FRP-090611-013	Low	104%	94.8%	81.5%	95.9%	0
TL08CRE	FRP-090611-013	Low	112%	88.5%	74.9%	104%	0
TL08D	FRP-090611-014	Low	111%	102%	96.8%	100%	0
TL08E	FRP-090611-015	Low	112%	103%	96.6%	102%	0
TL08F	FRP-090611-016	Low	110%	104%	95.3%	100%	0
TL08G	FRP-090611-017	Low	108%	99.6%	95.6%	102%	0
TL08H	FRP-090611-018	Low	108%	99.9%	95.1%	101%	0
TL08I	FRP-090611-019	Low	107%	101%	92.4%	100%	0
TL08J	FRP-090611-020	Low	108%	103%	93.8%	98.4%	0
TL08K	FRP-090611-021	Low	108%	103%	90.8%	98.9%	0
TL08L	FRP-090611-022	Low	108%	102%	91.5%	99.9%	0

	LCS/MB LIMITS		QC LIMITS	
SW8260C	Low	Med	Low	Med
(DCE) = d4-1,2-Dichloroethane	79-121	76-120	75-152	69-120
(TOL) = d8-Toluene	80-120	80-120	82-115	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	64-120	76-128
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 11-19393 to 11-19404

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-090911**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-090911
LIMS ID: 11-19393
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: FINN5/PAB
LCSD: FINN5/PAB
Date Analyzed LCS: 09/09/11 12:35
LCSD: 09/09/11 13:08

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	42.0	50.0	84.0%	49.7	50.0	99.4%	16.8%
Bromomethane	36.7	50.0	73.4%	46.2	50.0	92.4%	22.9%
Vinyl Chloride	37.2	50.0	74.4%	46.4	50.0	92.8%	22.0%
Chloroethane	50.9 Q	50.0	102%	61.6 Q	50.0	123%	19.0%
Methylene Chloride	49.4 B	50.0	98.8%	56.9 B	50.0	114%	14.1%
Acetone	247 B	250	98.8%	240 B	250	96.0%	2.9%
Carbon Disulfide	47.3	50.0	94.6%	57.2	50.0	114%	18.9%
1,1-Dichloroethene	44.5	50.0	89.0%	55.1	50.0	110%	21.3%
1,1-Dichloroethane	47.0	50.0	94.0%	54.4	50.0	109%	14.6%
trans-1,2-Dichloroethene	45.8	50.0	91.6%	55.3	50.0	111%	18.8%
cis-1,2-Dichloroethene	48.6	50.0	97.2%	57.5	50.0	115%	16.8%
Chloroform	46.0	50.0	92.0%	52.4	50.0	105%	13.0%
1,2-Dichloroethane	39.3	50.0	78.6%	44.2	50.0	88.4%	11.7%
2-Butanone	266	250	106%	261	250	104%	1.9%
1,1,1-Trichloroethane	41.3	50.0	82.6%	50.5	50.0	101%	20.0%
Carbon Tetrachloride	37.8	50.0	75.6%	46.4	50.0	92.8%	20.4%
Vinyl Acetate	43.8	50.0	87.6%	52.5	50.0	105%	18.1%
Bromodichloromethane	44.7	50.0	89.4%	51.5	50.0	103%	14.1%
1,2-Dichloropropane	45.5	50.0	91.0%	55.5	50.0	111%	19.8%
cis-1,3-Dichloropropene	47.3	50.0	94.6%	54.7	50.0	109%	14.5%
Trichloroethene	43.0	50.0	86.0%	52.6	50.0	105%	20.1%
Dibromochloromethane	47.5	50.0	95.0%	52.3	50.0	105%	9.6%
1,1,2-Trichloroethane	46.7	50.0	93.4%	53.0	50.0	106%	12.6%
Benzene	44.9	50.0	89.8%	54.1	50.0	108%	18.6%
trans-1,3-Dichloropropene	48.1	50.0	96.2%	55.8	50.0	112%	14.8%
2-Chloroethylvinylether	108 Q	50.0	216%	114 Q	50.0	228%	5.4%
Bromoform	47.2	50.0	94.4%	49.1	50.0	98.2%	3.9%
4-Methyl-2-Pentanone (MIBK)	249	250	99.6%	261	250	104%	4.7%
2-Hexanone	248	250	99.2%	247	250	98.8%	0.4%
Tetrachloroethene	42.8	50.0	85.6%	51.4	50.0	103%	18.3%
1,1,2,2-Tetrachloroethane	48.5	50.0	97.0%	51.5	50.0	103%	6.0%
Toluene	43.4	50.0	86.8%	52.4	50.0	105%	18.8%
Chlorobenzene	45.9	50.0	91.8%	52.6	50.0	105%	13.6%
Ethylbenzene	44.8	50.0	89.6%	52.9	50.0	106%	16.6%
Styrene	46.0	50.0	92.0%	52.8	50.0	106%	13.8%
Trichlorofluoromethane	43.5	50.0	87.0%	54.2	50.0	108%	21.9%
1,1,2-Trichloro-1,2,2-trifluoroetha	49.9	50.0	99.8%	60.2	50.0	120%	18.7%
m,p-Xylene	91.7	100	91.7%	107	100	107%	15.4%
o-Xylene	45.6	50.0	91.2%	53.6	50.0	107%	16.1%
1,2-Dichlorobenzene	46.9 B	50.0	93.8%	51.9 B	50.0	104%	10.1%
1,3-Dichlorobenzene	46.1	50.0	92.2%	52.4	50.0	105%	12.8%
1,4-Dichlorobenzene	47.0	50.0	94.0%	52.5	50.0	105%	11.1%
Acrolein	266	250	106%	276	250	110%	3.7%
Methyl Iodide	44.3	50.0	88.6%	52.2	50.0	104%	16.4%
Bromoethane	46.4	50.0	92.8%	55.5	50.0	111%	17.9%
Acrylonitrile	52.6	50.0	105%	54.5	50.0	109%	3.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-090911**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-090911
LIMS ID: 11-19393
Matrix: Soil

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
1,1-Dichloropropene	39.9	50.0	79.8%	51.8	50.0	104%	26.0%
Dibromomethane	46.4	50.0	92.8%	50.6	50.0	101%	8.7%
1,1,1,2-Tetrachloroethane	43.1	50.0	86.2%	48.1	50.0	96.2%	11.0%
1,2-Dibromo-3-chloropropane	45.9	50.0	91.8%	46.6	50.0	93.2%	1.5%
1,2,3-Trichloropropane	45.2	50.0	90.4%	48.2	50.0	96.4%	6.4%
trans-1,4-Dichloro-2-butene	46.1	50.0	92.2%	48.0	50.0	96.0%	4.0%
1,3,5-Trimethylbenzene	44.1	50.0	88.2%	51.8	50.0	104%	16.1%
1,2,4-Trimethylbenzene	44.9	50.0	89.8%	52.2	50.0	104%	15.0%
Hexachlorobutadiene	40.9	50.0	81.8%	45.5	50.0	91.0%	10.6%
Ethylene Dibromide	49.3	50.0	98.6%	55.1	50.0	110%	11.1%
Bromochloromethane	51.0	50.0	102%	56.7	50.0	113%	10.6%
2,2-Dichloropropane	43.4	50.0	86.8%	51.5	50.0	103%	17.1%
1,3-Dichloropropane	47.7	50.0	95.4%	50.8	50.0	102%	6.3%
Isopropylbenzene	43.5	50.0	87.0%	53.0	50.0	106%	19.7%
n-Propylbenzene	46.7	50.0	93.4%	55.0	50.0	110%	16.3%
Bromobenzene	44.8	50.0	89.6%	50.8	50.0	102%	12.6%
2-Chlorotoluene	43.3	50.0	86.6%	50.2	50.0	100%	14.8%
4-Chlorotoluene	45.2	50.0	90.4%	52.3	50.0	105%	14.6%
tert-Butylbenzene	41.8	50.0	83.6%	49.6	50.0	99.2%	17.1%
sec-Butylbenzene	45.6	50.0	91.2%	53.6	50.0	107%	16.1%
4-Isopropyltoluene	44.4	50.0	88.8%	51.7	50.0	103%	15.2%
n-Butylbenzene	47.5	50.0	95.0%	55.3	50.0	111%	15.2%
1,2,4-Trichlorobenzene	48.8	50.0	97.6%	50.9	50.0	102%	4.2%
Naphthalene	47.3	50.0	94.6%	49.0	50.0	98.0%	3.5%
1,2,3-Trichlorobenzene	46.9	50.0	93.8%	48.4	50.0	96.8%	3.1%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	95.7%	94.5%
d8-Toluene	102%	107%
Bromofluorobenzene	99.3%	98.3%
d4-1,2-Dichlorobenzene	101%	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-091211**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-091211
LIMS ID: 11-19395
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: FINN5/PAB
LCSD: FINN5/PAB
Date Analyzed LCS: 09/12/11 08:41
LCSD: 09/12/11 09:14

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	45.6	50.0	91.2%	45.7	50.0	91.4%	0.2%
Bromomethane	39.0 Q	50.0	78.0%	38.8 Q	50.0	77.6%	0.5%
Vinyl Chloride	42.2	50.0	84.4%	42.0	50.0	84.0%	0.5%
Chloroethane	55.0	50.0	110%	57.2	50.0	114%	3.9%
Methylene Chloride	54.0	50.0	108%	54.5	50.0	109%	0.9%
Acetone	252 B	250	101%	234 B	250	93.6%	7.4%
Carbon Disulfide	54.5	50.0	109%	54.7	50.0	109%	0.4%
1,1-Dichloroethene	53.0	50.0	106%	53.1	50.0	106%	0.2%
1,1-Dichloroethane	52.7	50.0	105%	52.2	50.0	104%	1.0%
trans-1,2-Dichloroethene	53.0	50.0	106%	53.2	50.0	106%	0.4%
cis-1,2-Dichloroethene	54.9	50.0	110%	55.3	50.0	111%	0.7%
Chloroform	49.7	50.0	99.4%	51.0	50.0	102%	2.6%
1,2-Dichloroethane	42.6	50.0	85.2%	42.1	50.0	84.2%	1.2%
2-Butanone	276	250	110%	263	250	105%	4.8%
1,1,1-Trichloroethane	48.7	50.0	97.4%	48.9	50.0	97.8%	0.4%
Carbon Tetrachloride	44.7	50.0	89.4%	44.6	50.0	89.2%	0.2%
Vinyl Acetate	51.2	50.0	102%	49.3	50.0	98.6%	3.8%
Bromodichloromethane	48.7	50.0	97.4%	48.2	50.0	96.4%	1.0%
1,2-Dichloropropane	49.5	50.0	99.0%	50.7	50.0	101%	2.4%
cis-1,3-Dichloropropene	51.5	50.0	103%	51.4	50.0	103%	0.2%
Trichloroethene	49.0	50.0	98.0%	48.5	50.0	97.0%	1.0%
Dibromochloromethane	51.6	50.0	103%	50.3	50.0	101%	2.6%
1,1,2-Trichloroethane	49.9	50.0	99.8%	49.9	50.0	99.8%	0.0%
Benzene	49.9	50.0	99.8%	50.1	50.0	100%	0.4%
trans-1,3-Dichloropropene	52.6	50.0	105%	52.9	50.0	106%	0.6%
2-Chloroethylvinylether	112 Q	50.0	224%	108 Q	50.0	216%	3.6%
Bromoform	52.8	50.0	106%	51.7	50.0	103%	2.1%
4-Methyl-2-Pentanone (MIBK)	257	250	103%	250	250	100%	2.8%
2-Hexanone	255	250	102%	246	250	98.4%	3.6%
Tetrachloroethene	49.5	50.0	99.0%	49.8	50.0	99.6%	0.6%
1,1,2,2-Tetrachloroethane	52.6	50.0	105%	51.5	50.0	103%	2.1%
Toluene	50.2	50.0	100%	50.8	50.0	102%	1.2%
Chlorobenzene	51.1	50.0	102%	50.9	50.0	102%	0.4%
Ethylbenzene	50.8	50.0	102%	50.3	50.0	101%	1.0%
Styrene	51.1	50.0	102%	51.0	50.0	102%	0.2%
Trichlorofluoromethane	53.1	50.0	106%	52.6	50.0	105%	0.9%
1,1,2-Trichloro-1,2,2-trifluoroetha	58.5	50.0	117%	56.6	50.0	113%	3.3%
m,p-Xylene	101	100	101%	100	100	100%	1.0%
o-Xylene	51.5	50.0	103%	51.4	50.0	103%	0.2%
1,2-Dichlorobenzene	52.4 B	50.0	105%	50.8 B	50.0	102%	3.1%
1,3-Dichlorobenzene	52.7	50.0	105%	51.1	50.0	102%	3.1%
1,4-Dichlorobenzene	53.0	50.0	106%	51.8	50.0	104%	2.3%
Acrolein	270	250	108%	264	250	106%	2.2%
Methyl Iodide	48.3	50.0	96.6%	48.5	50.0	97.0%	0.4%
Bromoethane	53.7	50.0	107%	53.6	50.0	107%	0.2%
Acrylonitrile	56.6	50.0	113%	55.1	50.0	110%	2.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-091211**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-091211
LIMS ID: 11-19395
Matrix: Soil

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
1,1-Dichloropropene	47.8	50.0	95.6%	46.7	50.0	93.4%	2.3%
Dibromomethane	49.4	50.0	98.8%	49.2	50.0	98.4%	0.4%
1,1,1,2-Tetrachloroethane	46.8	50.0	93.6%	47.6	50.0	95.2%	1.7%
1,2-Dibromo-3-chloropropane	49.2	50.0	98.4%	48.3	50.0	96.6%	1.8%
1,2,3-Trichloropropane	48.9	50.0	97.8%	48.0	50.0	96.0%	1.9%
trans-1,4-Dichloro-2-butene	49.6	50.0	99.2%	48.8	50.0	97.6%	1.6%
1,3,5-Trimethylbenzene	50.9	50.0	102%	50.4	50.0	101%	1.0%
1,2,4-Trimethylbenzene	52.2	50.0	104%	51.3	50.0	103%	1.7%
Hexachlorobutadiene	46.1	50.0	92.2%	45.1	50.0	90.2%	2.2%
Ethylene Dibromide	52.1	50.0	104%	51.5	50.0	103%	1.2%
Bromochloromethane	55.8	50.0	112%	55.3	50.0	111%	0.9%
2,2-Dichloropropane	50.7	50.0	101%	49.7	50.0	99.4%	2.0%
1,3-Dichloropropane	50.1	50.0	100%	49.0	50.0	98.0%	2.2%
Isopropylbenzene	51.4	50.0	103%	50.6	50.0	101%	1.6%
n-Propylbenzene	53.9	50.0	108%	53.1	50.0	106%	1.5%
Bromobenzene	50.8	50.0	102%	49.9	50.0	99.8%	1.8%
2-Chlorotoluene	52.4	50.0	105%	50.7	50.0	101%	3.3%
4-Chlorotoluene	49.9	50.0	99.8%	49.2	50.0	98.4%	1.4%
tert-Butylbenzene	49.9	50.0	99.8%	48.8	50.0	97.6%	2.2%
sec-Butylbenzene	52.7	50.0	105%	51.8	50.0	104%	1.7%
4-Isopropyltoluene	51.9	50.0	104%	50.4	50.0	101%	2.9%
n-Butylbenzene	55.2	50.0	110%	52.6	50.0	105%	4.8%
1,2,4-Trichlorobenzene	52.2	50.0	104%	50.3	50.0	101%	3.7%
Naphthalene	49.3	50.0	98.6%	48.6	50.0	97.2%	1.4%
1,2,3-Trichlorobenzene	49.6	50.0	99.2%	48.0	50.0	96.0%	3.3%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	95.9%	94.2%
d8-Toluene	102%	102%
Bromofluorobenzene	96.8%	98.2%
d4-1,2-Dichlorobenzene	101%	101%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0909

Lab Name: ANALYTICAL RESOURCES INC

Client: AMEC GEOMATRIX

ARI Job No: TL08

Project: FRP SHORELINE INVESTIGA

Lab File ID: MB0909

Lab Sample ID: MB0909

Date Analyzed: 09/09/11

Time Analyzed: 1336

Instrument ID: FINN5

Heated Purge: (Y/N) Y

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS0909	LCS0909	LCS0909	1235
02	LCS0909	LCS0909	LCS0909A	1308
03	FRP-090611-0	TL08A	TL08A	2043
04	FRP-090611-0	TL08B	TL08B	2110
05	FRP-090611-0	TL08C	TL08C	2138
06	FRP-090611-0	TL08D	TL08D	2205
07	FRP-090611-0	TL08E	TL08E	2233
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COMMENTS:

FORM IV VOA

OLM3.2M

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-090911**
 METHOD BLANK

Lab Sample ID: MB-090911
LIMS ID: 11-19393
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/09/11 13:36

Sample Amount: 5.00 g-dry-wt
Percent Moisture: NA

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.26	1.0	< 1.0 U
74-83-9	Bromomethane	0.19	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.24	1.0	< 1.0 U
75-00-3	Chloroethane	0.46	1.0	< 1.0 U
75-09-2	**Methylene Chloride**	**0.64**	**2.0**	**0.7 J**
67-64-1	**Acetone**	**0.48**	**5.0**	**2.5 J**
75-15-0	Carbon Disulfide	0.56	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	0.34	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	0.20	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	0.27	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	0.24	1.0	< 1.0 U
67-66-3	Chloroform	0.23	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	0.19	1.0	< 1.0 U
78-93-3	2-Butanone	0.51	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.23	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	0.21	1.0	< 1.0 U
108-05-4	Vinyl Acetate	0.38	5.0	< 5.0 U
75-27-4	Bromodichloromethane	0.25	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	0.16	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	0.23	1.0	< 1.0 U
79-01-6	Trichloroethene	0.21	1.0	< 1.0 U
124-48-1	Dibromochloromethane	0.27	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	0.29	1.0	< 1.0 U
71-43-2	Benzene	0.30	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	0.22	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	0.28	5.0	< 5.0 U
75-25-2	Bromoform	0.30	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.42	5.0	< 5.0 U
591-78-6	2-Hexanone	0.44	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.26	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	0.25	1.0	< 1.0 U
108-88-3	Toluene	0.15	1.0	< 1.0 U
108-90-7	Chlorobenzene	0.22	1.0	< 1.0 U
100-41-4	Ethylbenzene	0.20	1.0	< 1.0 U
100-42-5	Styrene	0.14	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	0.27	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.29	2.0	< 2.0 U
179601-23-1	m,p-Xylene	0.39	1.0	< 1.0 U
95-47-6	o-Xylene	0.22	1.0	< 1.0 U
95-50-1	**1,2-Dichlorobenzene**	**0.29**	**1.0**	**0.5 J**
541-73-1	1,3-Dichlorobenzene	0.23	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.23	1.0	< 1.0 U
107-02-8	Acrolein	3.8	50	< 50 U
74-88-4	Methyl Iodide	0.22	1.0	< 1.0 U
74-96-4	Bromoethane	0.44	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	5.0	< 5.0 U
563-58-6	1,1-Dichloropropene	0.31	1.0	< 1.0 U
74-95-3	Dibromomethane	0.15	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	0.23	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	0.59	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-090911**
 METHOD BLANK

Lab Sample ID: MB-090911
LIMS ID: 11-19393
Matrix: Soil
Date Analyzed: 09/09/11 13:36

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.52	2.0	< 2.0 U
110-57-6	trans-1,4-Dichloro-2-butene	0.44	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	0.25	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	0.23	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	0.41	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	0.18	1.0	< 1.0 U
74-97-5	Bromochloromethane	0.32	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	0.29	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	0.21	1.0	< 1.0 U
98-82-8	Isopropylbenzene	0.23	1.0	< 1.0 U
103-65-1	n-Propylbenzene	0.27	1.0	< 1.0 U
108-86-1	Bromobenzene	0.15	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	0.30	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	0.28	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	0.31	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	0.24	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	0.24	1.0	< 1.0 U
104-51-8	n-Butylbenzene	0.26	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	0.33	5.0	< 5.0 U
91-20-3	Naphthalene	0.43	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	0.30	5.0	< 5.0 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	103%
Bromofluorobenzene	95.0%
d4-1,2-Dichlorobenzene	101%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0912

Lab Name: ANALYTICAL RESOURCES INC

Client: AMEC GEOMATRIX

ARI Job No: TL08

Project: FRP SHORELINE INVESTIGA

Lab File ID: MB0912

Lab Sample ID: MB0912

Date Analyzed: 09/12/11

Time Analyzed: 0941

Instrument ID: FINN5

Heated Purge: (Y/N) Y

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS0912	LCS0912	LCS0912	0841
02	LCS0912	LCS0912	LCS0912A	0914
03	FRP-090611-0	TL08C	TL08C2	1014
04	FRP-090611-0	TL08F	TL08F	1047
05	FRP-090611-0	TL08G	TL08G	1115
06	FRP-090611-0	TL08H	TL08H	1142
07	FRP-090611-0	TL08I	TL08I	1210
08	FRP-090611-0	TL08J	TL08J	1237
09	FRP-090611-0	TL08K	TL08K	1304
10	FRP-090611-0	TL08L	TL08L	1332
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COMMENTS:

FORM IV VOA

OLM3.2M

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-091211**
 METHOD BLANK

Lab Sample ID: MB-091211
LIMS ID: 11-19395
Matrix: Soil
Data Release Authorized:
Reported: 09/13/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/12/11 09:41

Sample Amount: 5.00 g-dry-wt
Percent Moisture: NA

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.26	1.0	< 1.0 U
74-83-9	Bromomethane	0.19	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.24	1.0	< 1.0 U
75-00-3	Chloroethane	0.46	1.0	< 1.0 U
75-09-2	Methylene Chloride	0.64	2.0	< 2.0 U
67-64-1	**Acetone**	**0.48**	**5.0**	**2.3 J**
75-15-0	Carbon Disulfide	0.56	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	0.34	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	0.20	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	0.27	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	0.24	1.0	< 1.0 U
67-66-3	Chloroform	0.23	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	0.19	1.0	< 1.0 U
78-93-3	2-Butanone	0.51	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.23	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	0.21	1.0	< 1.0 U
108-05-4	Vinyl Acetate	0.38	5.0	< 5.0 U
75-27-4	Bromodichloromethane	0.25	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	0.16	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	0.23	1.0	< 1.0 U
79-01-6	Trichloroethene	0.21	1.0	< 1.0 U
124-48-1	Dibromochloromethane	0.27	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	0.29	1.0	< 1.0 U
71-43-2	Benzene	0.30	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	0.22	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	0.28	5.0	< 5.0 U
75-25-2	Bromoform	0.30	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.42	5.0	< 5.0 U
591-78-6	2-Hexanone	0.44	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.26	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	0.25	1.0	< 1.0 U
108-88-3	Toluene	0.15	1.0	< 1.0 U
108-90-7	Chlorobenzene	0.22	1.0	< 1.0 U
100-41-4	Ethylbenzene	0.20	1.0	< 1.0 U
100-42-5	Styrene	0.14	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	0.27	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.29	2.0	< 2.0 U
179601-23-1	m,p-Xylene	0.39	1.0	< 1.0 U
95-47-6	o-Xylene	0.22	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	0.29	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.23	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.23	1.0	< 1.0 U
107-02-8	Acrolein	3.8	50	< 50 U
74-88-4	Methyl Iodide	0.22	1.0	< 1.0 U
74-96-4	Bromoethane	0.44	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	5.0	< 5.0 U
563-58-6	1,1-Dichloropropene	0.31	1.0	< 1.0 U
74-95-3	Dibromomethane	0.15	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	0.23	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	0.59	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-091211**
 METHOD BLANK

Lab Sample ID: MB-091211
LIMS ID: 11-19395
Matrix: Soil
Date Analyzed: 09/12/11 09:41

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.52	2.0	< 2.0 U
110-57-6	trans-1,4-Dichloro-2-butene	0.44	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	0.25	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	0.23	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	0.41	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	0.18	1.0	< 1.0 U
74-97-5	Bromochloromethane	0.32	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	0.29	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	0.21	1.0	< 1.0 U
98-82-8	Isopropylbenzene	0.23	1.0	< 1.0 U
103-65-1	n-Propylbenzene	0.27	1.0	< 1.0 U
108-86-1	Bromobenzene	0.15	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	0.30	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	0.28	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	0.31	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	0.24	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	0.24	1.0	< 1.0 U
104-51-8	n-Butylbenzene	0.26	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	0.33	5.0	< 5.0 U
91-20-3	Naphthalene	0.43	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	0.30	5.0	< 5.0 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.4%
d8-Toluene	102%
Bromofluorobenzene	95.3%
d4-1,2-Dichlorobenzene	101%

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP SHORELINE INVESTIGATION SDG No.: TL08

Lab File ID: BFB0817A BFB Injection Date: 08/17/11

Instrument ID: FINN5 BFB Injection Time: 1806

GC Column: RTX502.2 ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	26.4
75	30.0 - 66.0% of mass 95	52.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.8 (0.9)1
174	50.0 - 101.0% of mass 95	94.0
175	4.0 - 9.0% of mass 174	6.9 (7.3)1
176	93.0 - 101.0% of mass 174	90.9 (96.7)1
177	5.0 - 9.0% of mass 176	5.4 (5.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD1	IC0817	0010817	08/17/11	1842
02	VSTD5	IC0817	0050817	08/17/11	1932
03	VSTD200	IC0817	2000817	08/17/11	1959
04	VSTD150	IC0817	1500817	08/17/11	2027
05	VSTD100	IC0817	1000817	08/17/11	2054
06	VSTD50	IC0817	0500817	08/17/11	2122
07	VSTD10	IC0817	0100817	08/17/11	2149
08	VSTD2	IC0817	0020817	08/17/11	2244
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FORM V VOA OLM3.2M

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP SHORELINE INVESTIGATION SDG No.: TL08

Lab File ID: BFB0909 BFB Injection Date: 09/09/11

Instrument ID: FINN5 BFB Injection Time: 1131

GC Column: RTX502.2 ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8.0 - 40.0% of mass 95	26.4	
75	30.0 - 66.0% of mass 95	49.9	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0% of mass 95	6.2	
173	Less than 2.0% of mass 174	0.1	(0.1)1
174	50.0 - 101.0% of mass 95	79.8	
175	4.0 - 9.0% of mass 174	3.8	(4.8)1
176	93.0 - 101.0% of mass 174	78.4	(98.2)1
177	5.0 - 9.0% of mass 176	4.1	(5.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	CC0909	0500909	09/09/11	1158
02	LCS0909	LCS0909	LCS0909	09/09/11	1235
03	LCS0909	LCS0909	LCS0909A	09/09/11	1308
04	MB0909	MB0909	MB0909	09/09/11	1336
05	FRP-090611-011	TL08A	TL08A	09/09/11	2043
06	FRP-090611-012	TL08B	TL08B	09/09/11	2110
07	FRP-090611-013	TL08C	TL08C	09/09/11	2138
08	FRP-090611-014	TL08D	TL08D	09/09/11	2205
09	FRP-090611-015	TL08E	TL08E	09/09/11	2233
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FORM V VOA OLM3.2M

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP SHORELINE INVESTIGATION SDG No.: TL08

Lab File ID: BFB0912 BFB Injection Date: 09/12/11

Instrument ID: FINN5 BFB Injection Time: 0729

GC Column: RTX502.2 ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	25.7
75	30.0 - 66.0% of mass 95	48.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 101.0% of mass 95	84.8
175	4.0 - 9.0% of mass 174	4.3 (5.1)1
176	93.0 - 101.0% of mass 174	82.9 (97.7)1
177	5.0 - 9.0% of mass 176	4.4 (5.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	CC0912	0500912	09/12/11	0801
02	LCS0912	LCS0912	LCS0912	09/12/11	0841
03	LCS0912	LCS0912	LCS0912A	09/12/11	0914
04	MB0912	MB0912	MB0912	09/12/11	0941
05	FRP-090611-013	TL08C	TL08C2	09/12/11	1014
06	FRP-090611-016	TL08F	TL08F	09/12/11	1047
07	FRP-090611-017	TL08G	TL08G	09/12/11	1115
08	FRP-090611-018	TL08H	TL08H	09/12/11	1142
09	FRP-090611-019	TL08I	TL08I	09/12/11	1210
10	FRP-090611-020	TL08J	TL08J	09/12/11	1237
11	FRP-090611-021	TL08K	TL08K	09/12/11	1304
12	FRP-090611-022	TL08L	TL08L	09/12/11	1332
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FORM V VOA OLM3.2M

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TL08 Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 Calibration Date: 08/17/11

LAB FILE ID: RF1: 0010817 RF2: 0020817 RF5: 0050817
RF10: 0100817 RF50: 0500817

COMPOUND	RF1	RF2	RF5	RF10	RF50
Chloromethane	1.220	0.918	0.947	0.990	0.997
Vinyl Chloride	0.915	0.804	0.996	1.151	1.086
Bromomethane	0.452	0.456	0.384	0.483	0.469
Chloroethane	0.446	0.508	0.455	0.515	0.457
Trichlorofluoromethane	0.864	0.785	0.885	0.973	0.951
Acrolein		0.093	0.090	0.095	0.091
112Trichloro122Trifluoroetha	0.525	0.454	0.515	0.548	0.528
Acetone	0.274	0.203	0.225	0.221	0.200
1,1-Dichloroethene	0.461	0.432	0.456	0.482	0.472
Bromoethane	0.335	0.325	0.352	0.391	0.376
Iodomethane	0.638	0.555	0.683	0.630	0.810
Methylene Chloride		0.898	0.735	0.690	0.555
Acrylonitrile		0.168	0.188	0.206	0.197
Carbon Disulfide	1.991	1.688	1.817	1.851	1.822
Trans-1,2-Dichloroethene	0.522	0.486	0.503	0.532	0.503
Vinyl Acetate		1.046	0.938	0.967	0.851
1,1-Dichloroethane	1.143	1.042	1.102	1.186	1.130
2-Butanone	0.282	0.294	0.272	0.327	0.312
2,2-Dichloropropane	0.758	0.646	0.709	0.736	0.741
Cis-1,2-Dichloroethene	0.504	0.496	0.522	0.572	0.535
Chloroform	1.025	0.943	0.985	1.050	1.007
Bromochloromethane	0.216	0.238	0.260	0.274	0.273
1,1,1-Trichloroethane	0.822	0.723	0.774	0.831	0.830
1,1-Dichloropropene	0.613	0.580	0.606	0.659	0.610
Carbon Tetrachloride	0.590	0.527	0.590	0.630	0.591
1,2-Dichloroethane	0.598	0.585	0.621	0.681	0.616
Benzene	1.584	1.460	1.557	1.668	1.477
Trichloroethene	0.486	0.417	0.474	0.485	0.453
1,2-Dichloropropane	0.536	0.495	0.529	0.558	0.514
Bromodichloromethane	0.568	0.526	0.580	0.587	0.568
Dibromomethane	0.244	0.264	0.275	0.288	0.271
2-Chloroethyl Vinyl Ether			0.063	0.087	0.082
4-Methyl-2-Pentanone	0.118	0.126	0.128	0.156	0.142
Cis 1,3-dichloropropene	0.573	0.529	0.574	0.623	0.624
Toluene	0.882	0.761	0.856	0.902	0.826
Trans 1,3-Dichloropropene	0.464	0.424	0.465	0.517	0.521
2-Hexanone	0.337	0.422	0.370	0.521	0.441

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TL08 Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 Calibration Date: 08/17/11

LAB FILE ID: RF1: 0010817 RF2: 0020817 RF5: 0050817
RF10: 0100817 RF50: 0500817

COMPOUND	RF1	RF2	RF5	RF10	RF50
1,1,2-Trichloroethane	0.296	0.276	0.295	0.322	0.295
1,3-Dichloropropane	0.574	0.569	0.609	0.673	0.634
Tetrachloroethene	0.568	0.439	0.544	0.544	0.516
Chlorodibromomethane	0.453	0.412	0.443	0.484	0.489
1,2-Dibromoethane	0.306	0.292	0.318	0.357	0.340
Chlorobenzene	0.951	0.955	1.032	1.124	1.020
Ethyl Benzene	1.853	1.704	1.854	1.987	1.779
1,1,1,2-Tetrachloroethane	0.478	0.370	0.409	0.427	0.400
m,p-xylene	0.658	0.599	0.658	0.701	0.637
o-Xylene	0.599	0.575	0.632	0.700	0.645
Styrene	1.042	0.960	1.035	1.137	1.031
Bromoform	0.618	0.547	0.646	0.661	0.690
1,1,2,2-Tetrachloroethane	0.902	0.866	0.886	1.000	0.953
1,2,3-Trichloropropane		0.160	0.183	0.213	0.209
Trans-1,4-Dichloro 2-Butene		0.272	0.311	0.346	0.346
N-Propyl Benzene	4.185	3.727	4.026	4.221	4.044
Bromobenzene	0.940	0.860	0.983	1.018	0.975
Isopropyl Benzene	3.438	3.036	3.345	3.553	3.468
2-Chloro Toluene	2.665	2.299	2.543	2.763	2.455
4-Chloro Toluene	2.736	2.568	2.645	2.735	2.654
T-Butyl Benzene	2.642	2.169	2.458	2.563	2.524
1,3,5-Trimethyl Benzene	2.764	2.479	2.741	2.948	2.800
1,2,4-Trimethylbenzene	2.755	2.428	2.706	2.862	2.748
S-Butyl Benzene	3.658	3.272	3.617	3.755	3.759
4-Isopropyl Toluene	2.789	2.454	2.655	2.844	2.791
1,3-Dichlorobenzene	1.706	1.512	1.623	1.665	1.579
1,4-Dichlorobenzene	1.609	1.461	1.592	1.620	1.534
N-Butyl Benzene	3.138	2.713	2.940	3.017	2.983
1,2-Dichlorobenzene	1.446	1.348	1.470	1.586	1.460
1,2-Dibromo 3-Chloropropane		0.168	0.166	0.214	0.200
1,2,4-Trichlorobenzene		1.154	1.187	1.261	1.127
Hexachloro 1,3-Butadiene	0.826	0.939	0.904	1.008	0.894
Naphthalene		2.139	1.756	2.364	2.035
1,2,3-Trichlorobenzene		1.142	1.063	1.252	1.053
Dichlorodifluoromethane	0.614	0.407	0.498	0.564	0.658
Methyl tert-Butyl Ether	1.226	1.088	1.171	1.282	1.236

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TL08 Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 Calibration Date: 08/17/11

LAB FILE ID: RF1: 0010817 RF2: 0020817 RF5: 0050817
RF10: 0100817 RF50: 0500817

COMPOUND	RF1	RF2	RF5	RF10	RF50
d4-1,2-Dichloroethane	0.646	0.688	0.648	0.671	0.680
d8-Toluene	1.172	1.214	1.191	1.202	1.194
4-Bromofluorobenzene	0.536	0.554	0.545	0.562	0.558
d4-1,2-Dichlorobenzene	0.885	0.897	0.894	0.890	0.913
Dibromofluoromethane	0.545	0.547	0.526	0.529	0.544

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TL08 Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 Calibration Date: 08/17/11

LAB FILE ID: RF100: 1000817 RF150: 1500817 RF200: 2000817

COMPOUND	RF100	RF150	RF200
Chloromethane	0.992	0.994	0.916
Vinyl Chloride	1.147	1.064	0.983
Bromomethane	0.443	0.434	0.392
Chloroethane	0.444	0.440	0.427
Trichlorofluoromethane	0.955	0.949	0.921
Acrolein	0.092	0.089	0.088
112Trichloro122Trifluoroetha	0.523	0.523	0.512
Acetone	0.200	0.192	0.188
1,1-Dichloroethene	0.460	0.469	0.455
Bromoethane	0.375	0.377	0.367
Iodomethane	0.812	0.830	0.818
Methylene Chloride	0.548	0.546	0.531
Acrylonitrile	0.200	0.199	0.199
Carbon Disulfide	1.791	1.788	1.695
Trans-1,2-Dichloroethene	0.500	0.502	0.498
Vinyl Acetate	0.849	0.842	0.838
1,1-Dichloroethane	1.134	1.144	1.116
2-Butanone	0.318	0.315	0.311
2,2-Dichloropropane	0.759	0.760	0.738
Cis-1,2-Dichloroethene	0.529	0.539	0.523
Chloroform	1.003	1.013	0.974
Bromochloromethane	0.275	0.283	0.274
1,1,1-Trichloroethane	0.831	0.830	0.811
1,1-Dichloropropene	0.600	0.586	0.579
Carbon Tetrachloride	0.594	0.577	0.577
1,2-Dichloroethane	0.616	0.607	0.602
Benzene	1.440	1.382	1.236
Trichloroethene	0.453	0.443	0.440
1,2-Dichloropropane	0.505	0.496	0.489
Bromodichloromethane	0.572	0.562	0.568
Dibromomethane	0.269	0.261	0.263
2-Chloroethyl Vinyl Ether	0.094	0.097	0.104
4-Methyl-2-Pentanone	0.143	0.138	0.136
Cis 1,3-dichloropropene	0.639	0.647	0.648
Toluene	0.823	0.829	0.810
Trans 1,3-Dichloropropene	0.559	0.566	0.563
2-Hexanone	0.416	0.346	0.277

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TL08 Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 Calibration Date: 08/17/11

LAB FILE ID: RF100: 1000817 RF150: 1500817 RF200: 2000817

COMPOUND	RF100	RF150	RF200
1,1,2-Trichloroethane	0.295	0.291	0.289
1,3-Dichloropropane	0.615	0.613	0.588
Tetrachloroethene	0.512	0.510	0.484
Chlorodibromomethane	0.490	0.489	0.477
1,2-Dibromoethane	0.349	0.359	0.354
Chlorobenzene	1.005	1.004	0.956
Ethyl Benzene	1.755	1.679	1.406
1,1,1,2-Tetrachloroethane	0.390	0.380	0.375
m,p-xylene	0.613	0.614	0.573
o-Xylene	0.633	0.640	0.614
Styrene	1.004	1.015	0.962
Bromoform	0.701	0.707	0.691
1,1,2,2-Tetrachloroethane	0.956	0.932	0.871
1,2,3-Trichloropropane	0.209	0.202	0.192
Trans-1,4-Dichloro 2-Butene	0.353	0.345	0.328
N-Propyl Benzene	3.899	3.569	2.917
Bromobenzene	0.955	0.971	0.943
Isopropyl Benzene	3.380	3.400	2.890
2-Chloro Toluene	2.402	2.584	2.213
4-Chloro Toluene	2.483	2.508	2.492
T-Butyl Benzene	2.452	2.528	2.347
1,3,5-Trimethyl Benzene	2.771	2.765	2.502
1,2,4-Trimethylbenzene	2.659	2.725	2.456
S-Butyl Benzene	3.533	3.427	2.925
4-Isopropyl Toluene	2.712	2.812	2.510
1,3-Dichlorobenzene	1.543	1.572	1.520
1,4-Dichlorobenzene	1.495	1.515	1.480
N-Butyl Benzene	2.921	2.889	2.643
1,2-Dichlorobenzene	1.427	1.421	1.385
1,2-Dibromo 3-Chloropropane	0.196	0.190	0.187
1,2,4-Trichlorobenzene	1.041	1.084	1.097
Hexachloro 1,3-Butadiene	0.816	0.865	0.866
Naphthalene	1.831	1.806	1.789
1,2,3-Trichlorobenzene	0.959	0.978	0.979
Dichlorodifluoromethane	0.650	0.632	0.599
Methyl tert-Butyl Ether	1.237	1.236	1.197

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TL08 Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 Calibration Date: 08/17/11

LAB FILE ID: RF100: 1000817 RF150: 1500817 RF200: 2000817

COMPOUND	RF100	RF150	RF200
d4-1,2-Dichloroethane	0.677	0.670	0.673
d8-Toluene	1.210	1.180	1.225
4-Bromofluorobenzene	0.554	0.550	0.546
d4-1,2-Dichlorobenzene	0.920	0.896	0.913
Dibromofluoromethane	0.540	0.536	0.539

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Calibration Date: 08/17/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
Chloromethane	AVRG	0.997	9.7
Vinyl Chloride	AVRG	1.018	11.7
Bromomethane	AVRG	0.439	7.9
Chloroethane	AVRG	0.461	7.0
Trichlorofluoromethane	AVRG	0.910	6.9
Acrolein	AVRG	0.091	2.6
112Trichloro122Trifluoroetha	AVRG	0.516	5.3
Acetone	AVRG	0.213	13.1
1,1-Dichloroethene	AVRG	0.461	3.2
Bromoethane	AVRG	0.362	6.3
Iodomethane	AVRG	0.722	15.0
Methylene Chloride	LINR		0.9991
Acrylonitrile	AVRG	0.194	6.4
Carbon Disulfide	AVRG	1.805	5.3
Trans-1,2-Dichloroethene	AVRG	0.506	2.9
Vinyl Acetate	AVRG	0.904	8.9
1,1-Dichloroethane	AVRG	1.125	3.7
2-Butanone	AVRG	0.304	6.3
2,2-Dichloropropane	AVRG	0.731	5.2
Cis-1,2-Dichloroethene	AVRG	0.528	4.4
Chloroform	AVRG	1.000	3.3
Bromochloromethane	AVRG	0.262	8.8
1,1,1-Trichloroethane	AVRG	0.806	4.8
1,1-Dichloropropene	AVRG	0.604	4.3
Carbon Tetrachloride	AVRG	0.584	4.9
1,2-Dichloroethane	AVRG	0.616	4.7
Benzene	AVRG	1.476	9.0
Trichloroethene	AVRG	0.456	5.3
1,2-Dichloropropane	AVRG	0.515	4.6
Bromodichloromethane	AVRG	0.566	3.2
Dibromomethane	AVRG	0.267	4.8
2-Chloroethyl Vinyl Ether	AVRG	0.088	16.3
4-Methyl-2-Pentanone	AVRG	0.136	8.8
Cis 1,3-dichloropropene	AVRG	0.607	7.1
Toluene	AVRG	0.836	5.3
Trans 1,3-Dichloropropene	AVRG	0.510	10.5
2-Hexanone	AVRG	0.391	19.2

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Calibration Date: 08/17/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
1,1,2-Trichloroethane	AVRG	0.295	4.3
1,3-Dichloropropane	AVRG	0.609	5.6
Tetrachloroethene	AVRG	0.515	7.8
Chlorodibromomethane	AVRG	0.467	6.1
1,2-Dibromoethane	AVRG	0.334	7.7
Chlorobenzene	AVRG	1.006	5.7
Ethyl Benzene	AVRG	1.752	9.7
1,1,1,2-Tetrachloroethane	AVRG	0.404	8.8
m,p-xylene	AVRG	0.632	6.4
o-Xylene	AVRG	0.630	5.8
Styrene	AVRG	1.023	5.4
Bromoform	AVRG	0.658	8.2
1,1,2,2-Tetrachloroethane	AVRG	0.921	5.2
1,2,3-Trichloropropane	AVRG	0.195	9.8
Trans-1,4-Dichloro 2-Butene	AVRG	0.329	8.7
N-Propyl Benzene	AVRG	3.824	11.2
Bromobenzene	AVRG	0.956	4.8
Isopropyl Benzene	AVRG	3.314	6.9
2-Chloro Toluene	AVRG	2.491	7.4
4-Chloro Toluene	AVRG	2.603	4.0
T-Butyl Benzene	AVRG	2.460	6.0
1,3,5-Trimethyl Benzene	AVRG	2.721	5.7
1,2,4-Trimethylbenzene	AVRG	2.667	5.6
S-Butyl Benzene	AVRG	3.493	8.1
4-Isopropyl Toluene	AVRG	2.696	5.4
1,3-Dichlorobenzene	AVRG	1.590	4.4
1,4-Dichlorobenzene	AVRG	1.538	4.0
N-Butyl Benzene	AVRG	2.906	5.5
1,2-Dichlorobenzene	AVRG	1.443	4.9
1,2-Dibromo 3-Chloropropane	AVRG	0.189	9.2
1,2,4-Trichlorobenzene	AVRG	1.136	6.4
Hexachloro 1,3-Butadiene	AVRG	0.890	7.0
Naphthalene	AVRG	1.960	11.6
1,2,3-Trichlorobenzene	AVRG	1.061	10.0
Dichlorodifluoromethane	AVRG	0.578	14.9
Methyl tert-Butyl Ether	AVRG	1.209	4.8

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC | Client: AMEC GEOMATRIX

ARI Job No: TL08 | Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 | Calibration Date: 08/17/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
d4-1,2-Dichloroethane	AVRG	0.669	2.2
d8-Toluene	AVRG	1.198	1.5
4-Bromofluorobenzene	AVRG	0.550	1.5
d4-1,2-Dichlorobenzene	AVRG	0.901	1.4
Dibromofluoromethane	AVRG	0.538	1.4

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Cont. Calib. Date: 09/09/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1158

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
Chloromethane	0.997	0.995	0.100	AVRG	-0.2	
Vinyl Chloride	1.018	0.929	0.010	AVRG	-8.7	
Bromomethane	0.439	0.364	0.010	AVRG	-17.1	
Chloroethane	0.462	0.564	0.010	AVRG	22.1	<-
Trichlorofluoromethane	0.910	0.969	0.010	AVRG	6.5	
Acrolein	0.091	0.093	0.010	AVRG	2.2	
112Trichloro122Trifluoroetha	0.516	0.604	0.010	AVRG	17.0	
Acetone	0.213	0.191	0.010	AVRG	-10.3	
1,1-Dichloroethene	0.461	0.497	0.010	AVRG	7.8	
Bromoethane	0.362	0.402	0.010	AVRG	11.0	
Iodomethane	0.722	0.718	0.010	AVRG	-0.6	
Methylene Chloride	50.000	56.805	0.010	LINR	13.6	
Acrylonitrile	0.194	0.201	0.010	AVRG	3.6	
Carbon Disulfide	1.805	2.018	0.010	AVRG	11.8	
Trans-1,2-Dichloroethene	0.506	0.548	0.010	AVRG	8.3	
Vinyl Acetate	0.904	0.907	0.010	AVRG	0.3	
1,1-Dichloroethane	1.125	1.228	0.100	AVRG	9.2	
2-Butanone	0.304	0.301	0.010	AVRG	-1.0	
2,2-Dichloropropane	0.731	0.761	0.010	AVRG	4.1	
Cis-1,2-Dichloroethene	0.528	0.600	0.010	AVRG	13.6	
Chloroform	1.000	1.058	0.010	AVRG	5.8	
Bromochloromethane	0.262	0.287	0.010	AVRG	9.5	
1,1,1-Trichloroethane	0.806	0.815	0.010	AVRG	1.1	
1,1-Dichloropropene	0.604	0.589	0.010	AVRG	-2.5	
Carbon Tetrachloride	0.584	0.530	0.010	AVRG	-9.2	
1,2-Dichloroethane	0.616	0.522	0.010	AVRG	-15.2	
Benzene	1.476	1.540	0.010	AVRG	4.3	
Trichloroethene	0.456	0.463	0.010	AVRG	1.5	
1,2-Dichloropropane	0.515	0.534	0.010	AVRG	3.7	
Bromodichloromethane	0.566	0.547	0.010	AVRG	-3.4	
Dibromomethane	0.267	0.262	0.010	AVRG	-1.9	
2-Chloroethyl Vinyl Ether	0.088	0.195	0.010	AVRG	121.6	<-
4-Methyl-2-Pentanone	0.136	0.131	0.010	AVRG	-3.7	
Cis 1,3-dichloropropene	0.607	0.648	0.010	AVRG	6.8	
Toluene	0.836	0.854	0.010	AVRG	2.2	
Trans 1,3-Dichloropropene	0.510	0.530	0.010	AVRG	3.9	
2-Hexanone	0.391	0.360	0.010	AVRG	-7.9	

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Cont. Calib. Date: 09/09/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1158

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
1,1,2-Trichloroethane	0.295	0.302	0.010	AVRG	2.4	
1,3-Dichloropropane	0.609	0.602	0.010	AVRG	-1.1	
Tetrachloroethene	0.515	0.496	0.010	AVRG	-3.7	
Chlorodibromomethane	0.467	0.465	0.010	AVRG	-0.4	
1,2-Dibromoethane	0.334	0.345	0.010	AVRG	3.3	
Chlorobenzene	1.006	1.021	0.300	AVRG	1.5	
Ethyl Benzene	1.752	1.750	0.010	AVRG	-0.1	
1,1,1,2-Tetrachloroethane	0.404	0.382	0.010	AVRG	-5.4	
m,p-xylene	0.632	0.636	0.010	AVRG	0.6	
o-Xylene	0.630	0.637	0.010	AVRG	1.1	
Styrene	1.023	1.008	0.010	AVRG	-1.5	
Bromoform	0.658	0.639	0.100	AVRG	-2.9	
1,1,2,2-Tetrachloroethane	0.921	0.906	0.300	AVRG	-1.6	
1,2,3-Trichloropropane	0.195	0.177	0.010	AVRG	-9.2	
Trans-1,4-Dichloro 2-Butene	0.329	0.298	0.010	AVRG	-9.4	
N-Propyl Benzene	3.824	4.047	0.010	AVRG	5.8	
Bromobenzene	0.956	0.936	0.010	AVRG	-2.1	
Isopropyl Benzene	3.314	3.368	0.010	AVRG	1.6	
2-Chloro Toluene	2.490	2.375	0.010	AVRG	-4.6	
4-Chloro Toluene	2.603	2.678	0.010	AVRG	2.9	
T-Butyl Benzene	2.460	2.355	0.010	AVRG	-4.3	
1,3,5-Trimethyl Benzene	2.721	2.748	0.010	AVRG	1.0	
1,2,4-Trimethylbenzene	2.667	2.677	0.010	AVRG	0.4	
S-Butyl Benzene	3.493	3.598	0.010	AVRG	3.0	
4-Isopropyl Toluene	2.696	2.698	0.010	AVRG	0.1	
1,3-Dichlorobenzene	1.590	1.590	0.010	AVRG	0.0	
1,4-Dichlorobenzene	1.538	1.530	0.010	AVRG	-0.5	
N-Butyl Benzene	2.906	3.007	0.010	AVRG	3.5	
1,2-Dichlorobenzene	1.443	1.428	0.010	AVRG	-1.0	
1,2-Dibromo 3-Chloropropane	0.189	0.160	0.010	AVRG	-15.3	
1,2,4-Trichlorobenzene	1.136	1.051	0.010	AVRG	-7.5	
Hexachloro 1,3-Butadiene	0.890	0.730	0.010	AVRG	-18.0	
Naphthalene	1.960	1.724	0.010	AVRG	-12.0	
1,2,3-Trichlorobenzene	1.061	0.937	0.010	AVRG	-11.7	
Dichlorodifluoromethane	0.578	0.405	0.010	AVRG	-29.9	<-
Methyl tert-Butyl Ether	1.209	1.178	0.010	AVRG	-2.6	

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Cont. Calib. Date: 09/09/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1158

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.669	0.640	0.010	AVRG	-4.3
d8-Toluene	1.198	1.222	0.010	AVRG	2.0
4-Bromofluorobenzene	0.551	0.530	0.010	AVRG	-3.8
d4-1,2-Dichlorobenzene	0.901	0.906	0.010	AVRG	0.6
Dibromofluoromethane	0.538	0.585	0.010	AVRG	8.7

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Cont. Calib. Date: 09/12/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 0801

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
Chloromethane	0.997	0.907	0.100	AVRG	-9.0	
Vinyl Chloride	1.018	0.865	0.010	AVRG	-15.0	
Bromomethane	0.439	0.304	0.010	AVRG	-30.8	<-
Chloroethane	0.462	0.518	0.010	AVRG	12.1	
Trichlorofluoromethane	0.910	0.955	0.010	AVRG	4.9	
Acrolein	0.091	0.092	0.010	AVRG	1.1	
112Trichloro122Trifluoroetha	0.516	0.585	0.010	AVRG	13.4	
Acetone	0.213	0.193	0.010	AVRG	-9.4	
1,1-Dichloroethene	0.461	0.492	0.010	AVRG	6.7	
Bromoethane	0.362	0.397	0.010	AVRG	9.7	
Iodomethane	0.722	0.667	0.010	AVRG	-7.6	
Methylene Chloride	50.000	54.842	0.010	LINR	9.7	
Acrylonitrile	0.194	0.206	0.010	AVRG	6.2	
Carbon Disulfide	1.805	2.000	0.010	AVRG	10.8	
Trans-1,2-Dichloroethene	0.506	0.536	0.010	AVRG	5.9	
Vinyl Acetate	0.904	0.841	0.010	AVRG	-7.0	
1,1-Dichloroethane	1.125	1.208	0.100	AVRG	7.4	
2-Butanone	0.304	0.309	0.010	AVRG	1.6	
2,2-Dichloropropane	0.731	0.740	0.010	AVRG	1.2	
Cis-1,2-Dichloroethene	0.528	0.575	0.010	AVRG	8.9	
Chloroform	1.000	1.033	0.010	AVRG	3.3	
Bromochloromethane	0.262	0.299	0.010	AVRG	14.1	
1,1,1-Trichloroethane	0.806	0.804	0.010	AVRG	-0.2	
1,1-Dichloropropene	0.604	0.594	0.010	AVRG	-1.6	
Carbon Tetrachloride	0.584	0.549	0.010	AVRG	-6.0	
1,2-Dichloroethane	0.616	0.538	0.010	AVRG	-12.7	
Benzene	1.476	1.550	0.010	AVRG	5.0	
Trichloroethene	0.456	0.464	0.010	AVRG	1.8	
1,2-Dichloropropane	0.515	0.551	0.010	AVRG	7.0	
Bromodichloromethane	0.566	0.571	0.010	AVRG	0.9	
Dibromomethane	0.267	0.271	0.010	AVRG	1.5	
2-Chloroethyl Vinyl Ether	0.088	0.200	0.010	AVRG	127.3	<-
4-Methyl-2-Pentanone	0.136	0.137	0.010	AVRG	0.7	
Cis 1,3-dichloropropene	0.607	0.655	0.010	AVRG	7.9	
Toluene	0.836	0.869	0.010	AVRG	3.9	
Trans 1,3-Dichloropropene	0.510	0.546	0.010	AVRG	7.0	
2-Hexanone	0.391	0.373	0.010	AVRG	-4.6	

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Cont. Calib. Date: 09/12/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 0801

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
1,1,2-Trichloroethane	0.295	0.309	0.010	AVRG	4.7	
1,3-Dichloropropane	0.609	0.610	0.010	AVRG	0.2	
Tetrachloroethene	0.515	0.508	0.010	AVRG	-1.4	
Chlorodibromomethane	0.467	0.477	0.010	AVRG	2.1	
1,2-Dibromoethane	0.334	0.354	0.010	AVRG	6.0	
Chlorobenzene	1.006	1.038	0.300	AVRG	3.2	
Ethyl Benzene	1.752	1.795	0.010	AVRG	2.4	
1,1,1,2-Tetrachloroethane	0.404	0.398	0.010	AVRG	-1.5	
m,p-xylene	0.632	0.650	0.010	AVRG	2.8	
o-Xylene	0.630	0.657	0.010	AVRG	4.3	
Styrene	1.023	1.047	0.010	AVRG	2.3	
Bromoform	0.658	0.694	0.100	AVRG	5.5	
1,1,2,2-Tetrachloroethane	0.921	0.952	0.300	AVRG	3.4	
1,2,3-Trichloropropane	0.195	0.191	0.010	AVRG	-2.0	
Trans-1,4-Dichloro 2-Butene	0.329	0.310	0.010	AVRG	-5.8	
N-Propyl Benzene	3.824	4.088	0.010	AVRG	6.9	
Bromobenzene	0.956	0.963	0.010	AVRG	0.7	
Isopropyl Benzene	3.314	3.453	0.010	AVRG	4.2	
2-Chloro Toluene	2.490	2.496	0.010	AVRG	0.2	
4-Chloro Toluene	2.603	2.591	0.010	AVRG	-0.5	
T-Butyl Benzene	2.460	2.436	0.010	AVRG	-1.0	
1,3,5-Trimethyl Benzene	2.721	2.776	0.010	AVRG	2.0	
1,2,4-Trimethylbenzene	2.667	2.729	0.010	AVRG	2.3	
S-Butyl Benzene	3.493	3.654	0.010	AVRG	4.6	
4-Isopropyl Toluene	2.696	2.739	0.010	AVRG	1.6	
1,3-Dichlorobenzene	1.590	1.624	0.010	AVRG	2.1	
1,4-Dichlorobenzene	1.538	1.592	0.010	AVRG	3.5	
N-Butyl Benzene	2.906	2.993	0.010	AVRG	3.0	
1,2-Dichlorobenzene	1.443	1.484	0.010	AVRG	2.8	
1,2-Dibromo 3-Chloropropane	0.189	0.179	0.010	AVRG	-5.3	
1,2,4-Trichlorobenzene	1.136	1.098	0.010	AVRG	-3.3	
Hexachloro 1,3-Butadiene	0.890	0.797	0.010	AVRG	-10.4	
Naphthalene	1.960	1.882	0.010	AVRG	-4.0	
1,2,3-Trichlorobenzene	1.061	1.006	0.010	AVRG	-5.2	
Dichlorodifluoromethane	0.578	0.377	0.010	AVRG	-34.8	<-
Methyl tert-Butyl Ether	1.209	1.173	0.010	AVRG	-3.0	

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

TL08:00107

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Cont. Calib. Date: 09/12/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 0801

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.669	0.622	0.010	AVRG	-7.0
d8-Toluene	1.198	1.227	0.010	AVRG	2.4
4-Bromofluorobenzene	0.551	0.534	0.010	AVRG	-3.1
d4-1,2-Dichlorobenzene	0.901	0.924	0.010	AVRG	2.6
Dibromofluoromethane	0.538	0.568	0.010	AVRG	5.6

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

TL08:00108

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP SHORELINE INVESTIGATION

Ical Midpoint ID: 0500817 — Ical Date: 08/17/11

Instrument ID: FINN5 — Project Run Date: 09/09/11

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	102251	6.44	137593	7.45	119527	10.59
	UPPER LIMIT	204502	6.94	275186	7.95	239054	11.09
	LOWER LIMIT	51126	5.94	68796	6.95	59764	10.09
	Sample ID						
01	LCS0909	141387	6.44	207512	7.45	185628	10.59
02	LCS0909	137360	6.42	195704	7.43	179321	10.57
03	MB0909	132297	6.43	191101	7.43	174909	10.57
04	FRP-090611-0	132450	6.43	192088	7.44	153725	10.57
05	FRP-090611-0	135803	6.45	198165	7.46	174201	10.59
06	FRP-090611-0	85243	6.43	114525	7.44	72606	10.58
07	FRP-090611-0	129166	6.43	191729	7.44	172404	10.58
08	FRP-090611-0	125245	6.43	185897	7.44	169426	10.58
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IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CLB) = d5-Chlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP SHORELINE INVESTIGATION

Ical Midpoint ID: 0500817 — Ical Date: 08/17/11

Instrument ID: FINN5 — Project Run Date: 09/09/11

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	61044	13.27				
	UPPER LIMIT	122088	13.77				
	LOWER LIMIT	30522	12.77				
	Sample ID						
01	LCS0909	98344	13.27				
02	LCS0909	94104	13.25				
03	MB0909	87583	13.26				
04	FRP-090611-0	57564	13.26				
05	FRP-090611-0	80432	13.28				
06	FRP-090611-0	21843*	13.27				
07	FRP-090611-0	89522	13.27				
08	FRP-090611-0	85824	13.26				
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22							

IS4 (DCB) = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP SHORELINE INVESTIGATION

Ical Midpoint ID: 0500817 — Ical Date: 08/17/11

Instrument ID: FINN5 — Project Run Date: 09/12/11

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	102251	6.44	137593	7.45	119527	10.59
	UPPER LIMIT	204502	6.94	275186	7.95	239054	11.09
	LOWER LIMIT	51126	5.94	68796	6.95	59764	10.09
	Sample ID						
01	LCS0912	127837	6.44	187299	7.44	166667	10.58
02	LCS0912	128520	6.44	187867	7.45	167893	10.58
03	MB0912	123212	6.42	175893	7.43	158342	10.56
04	FRP-090611-0	91504	6.43	132426	7.44	81868	10.58
05	FRP-090611-0	125273	6.42	183177	7.43	170535	10.56
06	FRP-090611-0	122686	6.42	180423	7.43	165811	10.56
07	FRP-090611-0	121514	6.42	178742	7.43	164158	10.57
08	FRP-090611-0	120659	6.44	177319	7.45	160244	10.58
09	FRP-090611-0	119729	6.43	175743	7.43	155287	10.57
10	FRP-090611-0	116754	6.43	170950	7.44	154018	10.57
11	FRP-090611-0	116430	6.43	173430	7.43	149178	10.57
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IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CLB) = d5-Chlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL08 — Project: FRP SHORELINE INVESTIGATION

Ical Midpoint ID: 0500817 — Ical Date: 08/17/11

Instrument ID: FINN5 — Project Run Date: 09/12/11

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	61044	13.27				
	UPPER LIMIT	122088	13.77				
	LOWER LIMIT	30522	12.77				
	Sample ID						
01	LCS0912	86218	13.27				
02	LCS0912	87336	13.27				
03	MB0912	79871	13.25				
04	FRP-090611-0	22287*	13.27				
05	FRP-090611-0	84547	13.25				
06	FRP-090611-0	84757	13.25				
07	FRP-090611-0	83059	13.25				
08	FRP-090611-0	75421	13.27				
09	FRP-090611-0	72215	13.26				
10	FRP-090611-0	68287	13.26				
11	FRP-090611-0	65180	13.26				
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22							

IS4 (DCB) = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

Metals Analysis
Report and Summary QC Forms

ARI Job ID: TL08

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

SDG: TL08

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
FRP-090611-011	TL08A	11-19393	
FRP-090611-011D	TL08ADUP	11-19393	
FRP-090611-011S	TL08ASPK	11-19393	
FRP-090611-012	TL08B	11-19394	
PBS	TL08MB1	11-19394	
LCSS	TL08MB1SPK	11-19394	
FRP-090611-013	TL08C	11-19395	
FRP-090611-014	TL08D	11-19396	
FRP-090611-015	TL08E	11-19397	
FRP-090611-016	TL08F	11-19398	
FRP-090611-017	TL08G	11-19399	
FRP-090611-018	TL08H	11-19400	
FRP-090611-019	TL08I	11-19401	
FRP-090611-020	TL08J	11-19402	
FRP-090611-021	TL08K	11-19403	
FRP-090611-022	TL08L	11-19404	
FRP-090611-023	TL08M	11-19405	
PBW	TL08MB2	11-19405	
LCSW	TL08MB2SPK	11-19405	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 9/14/11 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-023
SAMPLE

Lab Sample ID: TL08M
LIMS ID: 11-19405
Matrix: Water
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/08/11	6010B	09/09/11	7429-90-5	Aluminum	25.7	50	50	U
200.8	09/08/11	200.8	09/13/11	7440-38-2	Arsenic	0.048	0.2	0.2	U
3010A	09/08/11	6010B	09/09/11	7440-43-9	Cadmium	0.18	2	2	U
3010A	09/08/11	6010B	09/09/11	7440-47-3	Chromium	1.24	5	5	U
3010A	09/08/11	6010B	09/09/11	7440-50-8	Copper	0.92	2	2	U
3010A	09/08/11	6010B	09/09/11	7439-92-1	Lead	1.6	20	20	U
7470A	09/08/11	7470A	09/09/11	7439-97-6	Mercury	0.007	0.1	0.1	U
3010A	09/08/11	6010B	09/09/11	7440-02-0	Nickel	3.9	10	10	U
3010A	09/08/11	6010B	09/09/11	7782-49-2	Selenium	5.0	50	50	U
3010A	09/08/11	6010B	09/09/11	7440-28-0	Thallium	3.1	50	50	U
3010A	09/08/11	6010B	09/09/11	7440-62-2	Vanadium	0.27	3	3	U
3010A	09/08/11	6010B	09/09/11	7440-66-6	Zinc	1.4	10	10	U

Reported in ug/L (ppb).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: TL08LCS
LIMS ID: 11-19405
Matrix: Water
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Aluminum	6010B	2070	2000	104%	
Arsenic	200.8	25.6	25.0	102%	
Cadmium	6010B	497	500	99.4%	
Chromium	6010B	516	500	103%	
Copper	6010B	506	500	101%	
Lead	6010B	1920	2000	96.0%	
Mercury	7470A	2.2	2.0	110%	
Nickel	6010B	480	500	96.0%	
Selenium	6010B	1930	2000	96.5%	
Thallium	6010B	1950	2000	97.5%	
Vanadium	6010B	506	500	101%	
Zinc	6010B	480	500	96.0%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: TL08MB
LIMS ID: 11-19405
Matrix: Water
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/08/11	6010B	09/09/11	7429-90-5	Aluminum	25.7	50	50	U
200.8	09/08/11	200.8	09/13/11	7440-38-2	Arsenic	0.048	0.2	0.2	U
3010A	09/08/11	6010B	09/09/11	7440-43-9	Cadmium	0.18	2	2	U
3010A	09/08/11	6010B	09/09/11	7440-47-3	Chromium	1.24	5	5	U
3010A	09/08/11	6010B	09/09/11	7440-50-8	Copper	0.92	2	2	U
3010A	09/08/11	6010B	09/09/11	7439-92-1	Lead	1.6	20	20	U
7470A	09/08/11	7470A	09/09/11	7439-97-6	Mercury	0.007	0.1	0.1	U
3010A	09/08/11	6010B	09/09/11	7440-02-0	Nickel	3.9	10	10	U
3010A	09/08/11	6010B	09/09/11	7782-49-2	Selenium	5.0	50	50	U
3010A	09/08/11	6010B	09/09/11	7440-28-0	Thallium	3.1	50	50	U
3010A	09/08/11	6010B	09/09/11	7440-62-2	Vanadium	0.27	3	3	U
3010A	09/08/11	6010B	09/09/11	7440-66-6	Zinc	1.4	10	10	U

Reported in ug/L (ppb).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-011
SAMPLE

Lab Sample ID: TL08A
LIMS ID: 11-19393
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 87.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/08/11	6010B	09/09/11	**7429-90-5**	**Aluminum**	3.9	5	**8,540**	
3050B	09/08/11	200.8	09/09/11	**7440-38-2**	**Arsenic**	0.093	0.2	**2.9** J	
3050B	09/08/11	6010B	09/09/11	7440-43-9	Cadmium	0.12	0.2	0.2	U
3050B	09/08/11	6010B	09/09/11	**7440-47-3**	**Chromium**	0.30	0.5	**10.9**	
3050B	09/08/11	6010B	09/09/11	**7440-50-8**	**Copper**	0.055	0.2	**41.4**	
3050B	09/08/11	6010B	09/09/11	**7439-92-1**	**Lead**	0.14	2	**14**	
CLP	09/08/11	7471A	09/08/11	**7439-97-6**	**Mercury**	0.0011	0.02	**0.27**	
3050B	09/08/11	6010B	09/09/11	**7440-02-0**	**Nickel**	0.33	1	**9**	
3050B	09/08/11	6010B	09/09/11	7782-49-2	Selenium	0.71	5	5	U
3050B	09/08/11	6010B	09/09/11	7440-28-0	Thallium	0.58	5	5	U
3050B	09/08/11	6010B	09/09/11	**7440-62-2**	**Vanadium**	0.066	0.3	**35.0**	
3050B	09/08/11	6010B	09/09/11	**7440-66-6**	**Zinc**	0.13	1	**29**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-012
SAMPLE

Lab Sample ID: TL08B
LIMS ID: 11-19394
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 87.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/08/11	6010B	09/09/11	**7429-90-5**	**Aluminum**	3.8	5	**8,830**	
3050B	09/08/11	200.8	09/09/11	**7440-38-2**	**Arsenic**	0.096	0.2	**2.5**	J
3050B	09/08/11	6010B	09/09/11	7440-43-9	Cadmium	0.12	0.2	0.2	U
3050B	09/08/11	6010B	09/09/11	**7440-47-3**	**Chromium**	0.29	0.5	**13.0**	
3050B	09/08/11	6010B	09/09/11	**7440-50-8**	**Copper**	0.053	0.2	**35.1**	
3050B	09/08/11	6010B	09/09/11	**7439-92-1**	**Lead**	0.14	2	**15**	
CLP	09/08/11	7471A	09/08/11	**7439-97-6**	**Mercury**	0.0013	0.02	**0.26**	
3050B	09/08/11	6010B	09/09/11	**7440-02-0**	**Nickel**	0.32	1	**10**	
3050B	09/08/11	6010B	09/09/11	7782-49-2	Selenium	0.69	5	5	U
3050B	09/08/11	6010B	09/09/11	7440-28-0	Thallium	0.56	5	5	U
3050B	09/08/11	6010B	09/09/11	**7440-62-2**	**Vanadium**	0.064	0.3	**35.1**	
3050B	09/08/11	6010B	09/09/11	**7440-66-6**	**Zinc**	0.13	1	**29**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

CM 2/22/12

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-013
SAMPLE

Lab Sample ID: TL08C
LIMS ID: 11-19395
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 58.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/08/11	6010B	09/09/11	**7429-90-5**	**Aluminum**	5.6	8	**12,900**	
3050B	09/08/11	200.8	09/09/11	**7440-38-2**	**Arsenic**	0.15	0.3	**29.4**	J
3050B	09/08/11	6010B	09/09/11	**7440-43-9**	**Cadmium**	0.17	0.3	**0.6**	
3050B	09/08/11	6010B	09/09/11	**7440-47-3**	**Chromium**	0.43	0.8	**21.7**	
3050B	09/08/11	6010B	09/09/11	**7440-50-8**	**Copper**	0.080	0.3	**42.1**	
3050B	09/08/11	6010B	09/09/11	**7439-92-1**	**Lead**	0.21	3	**22**	
CLP	09/08/11	7471A	09/08/11	**7439-97-6**	**Mercury**	0.0017	0.03	**0.15**	
3050B	09/08/11	6010B	09/09/11	**7440-02-0**	**Nickel**	0.48	2	**16**	
3050B	09/08/11	6010B	09/09/11	7782-49-2	Selenium	1.0	8	8	U
3050B	09/08/11	6010B	09/09/11	7440-28-0	Thallium	0.84	8	8	U
3050B	09/08/11	6010B	09/09/11	**7440-62-2**	**Vanadium**	0.095	0.5	**56.1**	
3050B	09/08/11	6010B	09/09/11	**7440-66-6**	**Zinc**	0.19	2	**55**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

CM 2/27/12

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-014
SAMPLE

Lab Sample ID: TL08D
LIMS ID: 11-19396
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 79.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/08/11	6010B	09/09/11	**7429-90-5**	**Aluminum**	4.2	6	**6,880**	
3050B	09/08/11	200.8	09/13/11	**7440-38-2**	**Arsenic**	0.10	0.2	**1.5**	J
3050B	09/08/11	6010B	09/09/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/08/11	6010B	09/09/11	**7440-47-3**	**Chromium**	0.32	0.6	**13.9**	
3050B	09/08/11	6010B	09/09/11	**7440-50-8**	**Copper**	0.059	0.2	**10.9**	
3050B	09/08/11	6010B	09/09/11	7439-92-1	Lead	0.15	2	2	U
CLP	09/08/11	7471A	09/08/11	7439-97-6	Mercury	0.0014	0.03	0.03	U
3050B	09/08/11	6010B	09/09/11	**7440-02-0**	**Nickel**	0.36	1	**8**	
3050B	09/08/11	6010B	09/09/11	7782-49-2	Selenium	0.77	6	6	U
3050B	09/08/11	6010B	09/09/11	7440-28-0	Thallium	0.63	6	6	U
3050B	09/08/11	6010B	09/09/11	**7440-62-2**	**Vanadium**	0.071	0.4	**41.5**	
3050B	09/08/11	6010B	09/09/11	**7440-66-6**	**Zinc**	0.14	1	**24**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-015
SAMPLE

Lab Sample ID: TL08E
LIMS ID: 11-19397
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 76.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/08/11	6010B	09/09/11	**7429-90-5**	**Aluminum**	4.3	6	**6,590**	
3050B	09/08/11	200.8	09/13/11	**7440-38-2**	**Arsenic**	0.11	0.2	**0.8**	J
3050B	09/08/11	6010B	09/09/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/08/11	6010B	09/09/11	**7440-47-3**	**Chromium**	0.33	0.6	**10.2**	
3050B	09/08/11	6010B	09/09/11	**7440-50-8**	**Copper**	0.060	0.2	**10.0**	
3050B	09/08/11	6010B	09/09/11	7439-92-1	Lead	0.16	2	2	U
CLP	09/08/11	7471A	09/08/11	7439-97-6	Mercury	0.0015	0.03	0.03	U
3050B	09/08/11	6010B	09/09/11	**7440-02-0**	**Nickel**	0.36	1	**6**	
3050B	09/08/11	6010B	09/09/11	7782-49-2	Selenium	0.79	6	6	U
3050B	09/08/11	6010B	09/09/11	7440-28-0	Thallium	0.64	6	6	U
3050B	09/08/11	6010B	09/09/11	**7440-62-2**	**Vanadium**	0.073	0.4	**37.3**	
3050B	09/08/11	6010B	09/09/11	**7440-66-6**	**Zinc**	0.15	1	**19**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-016
SAMPLE

Lab Sample ID: TL08F
LIMS ID: 11-19398
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 80.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/08/11	6010B	09/09/11	**7429-90-5**	**Aluminum**	4.3	6	**7,340**	
3050B	09/08/11	200.8	09/09/11	**7440-38-2**	**Arsenic**	0.10	0.2	**5.6**	J
3050B	09/08/11	6010B	09/09/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/08/11	6010B	09/09/11	**7440-47-3**	**Chromium**	0.33	0.6	**11.2**	
3050B	09/08/11	6010B	09/09/11	**7440-50-8**	**Copper**	0.061	0.2	**14.8**	
3050B	09/08/11	6010B	09/09/11	7439-92-1	Lead	0.16	2	2	U
CLP	09/08/11	7471A	09/08/11	7439-97-6	Mercury	0.0014	0.03	0.03	U
3050B	09/08/11	6010B	09/09/11	**7440-02-0**	**Nickel**	0.36	1	**9**	
3050B	09/08/11	6010B	09/09/11	7782-49-2	Selenium	0.79	6	6	U
3050B	09/08/11	6010B	09/09/11	7440-28-0	Thallium	0.64	6	6	U
3050B	09/08/11	6010B	09/09/11	**7440-62-2**	**Vanadium**	0.073	0.4	**40.5**	
3050B	09/08/11	6010B	09/09/11	**7440-66-6**	**Zinc**	0.15	1	**23**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

2/19/12

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-017
SAMPLE

Lab Sample ID: TL08G
LIMS ID: 11-19399
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 81.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/08/11	6010B	09/09/11	**7429-90-5**	**Aluminum**	4.1	6	**7,400**	
3050B	09/08/11	200.8	09/09/11	**7440-38-2**	**Arsenic**	0.10	0.2	**1.0**	J
3050B	09/08/11	6010B	09/09/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/08/11	6010B	09/09/11	**7440-47-3**	**Chromium**	0.31	0.6	**12.1**	
3050B	09/08/11	6010B	09/09/11	**7440-50-8**	**Copper**	0.057	0.2	**9.6**	
3050B	09/08/11	6010B	09/09/11	7439-92-1	Lead	0.15	2	2	U
CLP	09/08/11	7471A	09/08/11	7439-97-6	Mercury	0.0014	0.03	0.03	U
3050B	09/08/11	6010B	09/09/11	**7440-02-0**	**Nickel**	0.34	1	**10**	
3050B	09/08/11	6010B	09/09/11	7782-49-2	Selenium	0.75	6	6	U
3050B	09/08/11	6010B	09/09/11	7440-28-0	Thallium	0.61	6	6	U
3050B	09/08/11	6010B	09/09/11	**7440-62-2**	**Vanadium**	0.069	0.3	**41.2**	
3050B	09/08/11	6010B	09/09/11	**7440-66-6**	**Zinc**	0.14	1	**22**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-018
SAMPLE

Lab Sample ID: TL08H
LIMS ID: 11-19400
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 79.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/08/11	6010B	09/09/11	**7429-90-5**	**Aluminum**	4.4	6	**7,050**	
3050B	09/08/11	200.8	09/09/11	**7440-38-2**	**Arsenic**	0.10	0.2	**1.6**	J
3050B	09/08/11	6010B	09/09/11	7440-43-9	Cadmium	0.14	0.2	0.2	U
3050B	09/08/11	6010B	09/09/11	**7440-47-3**	**Chromium**	0.34	0.6	**8.6**	
3050B	09/08/11	6010B	09/09/11	**7440-50-8**	**Copper**	0.062	0.2	**8.2**	
3050B	09/08/11	6010B	09/09/11	7439-92-1	Lead	0.16	2	2	U
CLP	09/08/11	7471A	09/08/11	7439-97-6	Mercury	0.0012	0.02	0.02	U
3050B	09/08/11	6010B	09/09/11	**7440-02-0**	**Nickel**	0.37	1	**6**	
3050B	09/08/11	6010B	09/09/11	7782-49-2	Selenium	0.81	6	6	U
3050B	09/08/11	6010B	09/09/11	7440-28-0	Thallium	0.66	6	6	U
3050B	09/08/11	6010B	09/09/11	**7440-62-2**	**Vanadium**	0.075	0.4	**32.9**	
3050B	09/08/11	6010B	09/09/11	**7440-66-6**	**Zinc**	0.15	1	**16**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-019
SAMPLE

Lab Sample ID: TL08I
LIMS ID: 11-19401
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 78.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/08/11	6010B	09/09/11	**7429-90-5**	**Aluminum**	4.3	6	**8,210**	
3050B	09/08/11	200.8	09/09/11	**7440-38-2**	**Arsenic**	0.10	0.2	**1.2**	J
3050B	09/08/11	6010B	09/09/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/08/11	6010B	09/09/11	**7440-47-3**	**Chromium**	0.33	0.6	**9.7**	
3050B	09/08/11	6010B	09/09/11	**7440-50-8**	**Copper**	0.060	0.2	**10.8**	
3050B	09/08/11	6010B	09/09/11	7439-92-1	Lead	0.16	2	2	U
CLP	09/08/11	7471A	09/08/11	7439-97-6	Mercury	0.0014	0.03	0.03	U
3050B	09/08/11	6010B	09/09/11	**7440-02-0**	**Nickel**	0.36	1	**6**	
3050B	09/08/11	6010B	09/09/11	7782-49-2	Selenium	0.79	6	6	U
3050B	09/08/11	6010B	09/09/11	7440-28-0	Thallium	0.64	6	6	U
3050B	09/08/11	6010B	09/09/11	**7440-62-2**	**Vanadium**	0.073	0.4	**34.9**	
3050B	09/08/11	6010B	09/09/11	**7440-66-6**	**Zinc**	0.15	1	**17**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-020
SAMPLE

Lab Sample ID: TL08J
LIMS ID: 11-19402
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 76.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/08/11	6010B	09/09/11	**7429-90-5**	**Aluminum**	4.4	6	**9,360**	
3050B	09/08/11	200.8	09/09/11	**7440-38-2**	**Arsenic**	0.11	0.2	**1.7**	J
3050B	09/08/11	6010B	09/09/11	7440-43-9	Cadmium	0.14	0.2	0.2	U
3050B	09/08/11	6010B	09/09/11	**7440-47-3**	**Chromium**	0.34	0.6	**9.5**	
3050B	09/08/11	6010B	09/09/11	**7440-50-8**	**Copper**	0.062	0.2	**13.7**	
3050B	09/08/11	6010B	09/09/11	7439-92-1	Lead	0.16	2	2	U
CLP	09/08/11	7471A	09/08/11	7439-97-6	Mercury	0.0012	0.02	0.02	U
3050B	09/08/11	6010B	09/09/11	**7440-02-0**	**Nickel**	0.37	1	**6**	
3050B	09/08/11	6010B	09/09/11	7782-49-2	Selenium	0.81	6	6	U
3050B	09/08/11	6010B	09/09/11	7440-28-0	Thallium	0.66	6	6	U
3050B	09/08/11	6010B	09/09/11	**7440-62-2**	**Vanadium**	0.075	0.4	**37.0**	
3050B	09/08/11	6010B	09/09/11	**7440-66-6**	**Zinc**	0.15	1	**19**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-021
SAMPLE

Lab Sample ID: TL08K
LIMS ID: 11-19403
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 75.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/08/11	6010B	09/09/11	**7429-90-5**	**Aluminum**	4.4	6	**9,310**	
3050B	09/08/11	200.8	09/09/11	**7440-38-2**	**Arsenic**	0.11	0.2	**1.6**	J
3050B	09/08/11	6010B	09/09/11	7440-43-9	Cadmium	0.14	0.2	0.2	U
3050B	09/08/11	6010B	09/09/11	**7440-47-3**	**Chromium**	0.34	0.6	**9.5**	
3050B	09/08/11	6010B	09/09/11	**7440-50-8**	**Copper**	0.062	0.2	**15.4**	
3050B	09/08/11	6010B	09/09/11	7439-92-1	Lead	0.16	2	2	U
CLP	09/08/11	7471A	09/08/11	7439-97-6	Mercury	0.0016	0.03	0.03	U
3050B	09/08/11	6010B	09/09/11	**7440-02-0**	**Nickel**	0.37	1	**6**	
3050B	09/08/11	6010B	09/09/11	7782-49-2	Selenium	0.81	6	6	U
3050B	09/08/11	6010B	09/09/11	7440-28-0	Thallium	0.66	6	6	U
3050B	09/08/11	6010B	09/09/11	**7440-62-2**	**Vanadium**	0.075	0.4	**36.8**	
3050B	09/08/11	6010B	09/09/11	**7440-66-6**	**Zinc**	0.15	1	**18**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-022
SAMPLE

Lab Sample ID: TL08L
LIMS ID: 11-19404
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 75.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/08/11	6010B	09/09/11	**7429-90-5**	**Aluminum**	4.6	6	**13,100**	
3050B	09/08/11	200.8	09/09/11	**7440-38-2**	**Arsenic**	0.11	0.2	**2.9**	J
3050B	09/08/11	6010B	09/09/11	7440-43-9	Cadmium	0.14	0.3	0.3	U
3050B	09/08/11	6010B	09/09/11	**7440-47-3**	**Chromium**	0.35	0.6	**13.1**	
3050B	09/08/11	6010B	09/09/11	**7440-50-8**	**Copper**	0.064	0.3	**22.9**	
3050B	09/08/11	6010B	09/09/11	7439-92-1	Lead	0.17	3	3	U
CLP	09/08/11	7471A	09/08/11	**7439-97-6**	**Mercury**	0.0013	0.03	**0.03**	
3050B	09/08/11	6010B	09/09/11	**7440-02-0**	**Nickel**	0.39	1	**8**	
3050B	09/08/11	6010B	09/09/11	7782-49-2	Selenium	0.84	6	6	U
3050B	09/08/11	6010B	09/09/11	7440-28-0	Thallium	0.68	6	6	U
3050B	09/08/11	6010B	09/09/11	**7440-62-2**	**Vanadium**	0.077	0.4	**43.5**	
3050B	09/08/11	6010B	09/09/11	**7440-66-6**	**Zinc**	0.15	1	**24**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-011
MATRIX SPIKE

Lab Sample ID: TL08A
LIMS ID: 11-19393
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Aluminum	6010B	8,540	8,920	220	173%	H
Arsenic	200.8	2.9	29.2	26.9	97.8%	
Cadmium	6010B	0.2 U	56.7	54.9	103%	
Chromium	6010B	10.9	67.6	54.9	103%	
Copper	6010B	41.4	90.7	54.9	89.8%	
Lead	6010B	14	228	220	97.3%	
Mercury	7471A	0.27	0.49	0.217	101%	
Nickel	6010B	9	62	54.9	96.5%	
Selenium	6010B	5 U	212	220	96.4%	
Thallium	6010B	5 U	209	220	95.0%	
Vanadium	6010B	35.0	86.0	54.9	92.9%	
Zinc	6010B	29	80	54.9	92.9%	

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-011
DUPLICATE

Lab Sample ID: TL08A
LIMS ID: 11-19393
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Aluminum	6010B	8,540	9,070	6.0%	+/- 20%	
Arsenic	200.8	2.9	2.2	27.5%	+/- 20%	*
Cadmium	6010B	0.2 U	0.2 U	0.0%	+/- 0.2	L
Chromium	6010B	10.9	11.1	1.8%	+/- 20%	
Copper	6010B	41.4	36.8	11.8%	+/- 20%	
Lead	6010B	14	12	15.4%	+/- 20%	
Mercury	7471A	0.27	0.26	3.8%	+/- 20%	
Nickel	6010B	9	10	10.5%	+/- 20%	
Selenium	6010B	5 U	6 U	0.0%	+/- 5	L
Thallium	6010B	5 U	6 U	0.0%	+/- 5	L
Vanadium	6010B	35.0	35.3	0.9%	+/- 20%	
Zinc	6010B	29	30	3.4%	+/- 20%	

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: TL08LCS
LIMS ID: 11-19394
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Aluminum	6010B	208	200	104%	
Arsenic	200.8	26.0	25.0	104%	
Cadmium	6010B	51.1	50.0	102%	
Chromium	6010B	51.7	50.0	103%	
Copper	6010B	49.5	50.0	99.0%	
Lead	6010B	196	200	98.0%	
Mercury	7471A	0.50	0.50	100%	
Nickel	6010B	49	50	98.0%	
Selenium	6010B	199	200	99.5%	
Thallium	6010B	198	200	99.0%	
Vanadium	6010B	51.5	50.0	103%	
Zinc	6010B	48	50	96.0%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: TL08MB
LIMS ID: 11-19394
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/08/11	6010B	09/09/11	7429-90-5	Aluminum	3.6	5	5	U
3050B	09/08/11	200.8	09/09/11	7440-38-2	Arsenic	0.087	0.2	0.2	U
3050B	09/08/11	6010B	09/09/11	7440-43-9	Cadmium	0.11	0.2	0.2	U
3050B	09/08/11	6010B	09/09/11	7440-47-3	Chromium	0.27	0.5	0.5	U
3050B	09/08/11	6010B	09/09/11	7440-50-8	Copper	0.050	0.2	0.2	U
3050B	09/08/11	6010B	09/09/11	7439-92-1	Lead	0.13	2	2	U
CLP	09/08/11	7471A	09/08/11	7439-97-6	Mercury	0.0013	0.02	0.02	U
3050B	09/08/11	6010B	09/09/11	7440-02-0	Nickel	0.30	1	1	U
3050B	09/08/11	6010B	09/09/11	7782-49-2	Selenium	0.65	5	5	U
3050B	09/08/11	6010B	09/09/11	7440-28-0	Thallium	0.53	5	5	U
3050B	09/08/11	6010B	09/09/11	7440-62-2	Vanadium	0.060	0.3	0.3	U
3050B	09/08/11	6010B	09/09/11	7440-66-6	Zinc	0.12	1	1	U

Reported in mg/kg (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS:ug/L

SDG: TL08

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Aluminum	AL	ICP	IP090971	2000.0	2007.81	100.4	2000.0	2015.29	100.8	1996.94	99.8	2020.43	101.0	2019.28	101.0	1997.36	99.9
Arsenic	AS	PMS	MS090981	50.0	50.04	100.1	50.0	50.17	100.3	49.18	98.4	49.43	98.9	48.90	97.8	48.44	96.9
Cadmium	CD	ICP	IP090971	1000.0	1030.32	103.0	1000.0	1032.67	103.3	1039.90	104.0	1024.08	102.4	1008.55	100.9	1037.03	103.7
Chromium	CR	ICP	IP090971	1000.0	1023.75	102.4	1000.0	1026.56	102.7	1015.21	101.5	1020.30	102.0	1012.73	101.3	1005.99	100.6
Copper	CU	ICP	IP090971	1000.0	1024.91	102.5	1000.0	1019.67	102.0	1033.22	103.3	1022.44	102.2	1013.27	101.3	1033.20	103.3
Lead	PB	ICP	IP090971	2000.0	1925.77	96.3	2000.0	1912.92	95.6	1923.06	96.2	1878.60	93.9	1856.82	92.8	1906.01	95.3
Mercury	HG	CVA	HG090801	8.0	7.91	98.9	4.0	4.04	101.0	3.99	99.8	4.08	102.0	4.08	102.0	4.10	102.5
Nickel	NI	ICP	IP090971	1000.0	991.91	99.2	1000.0	990.89	99.1	972.17	97.2	964.71	96.5	958.60	95.9	954.13	95.4
Selenium	SE	ICP	IP090971	2000.0	2001.29	100.1	2000.0	1983.58	99.2	1989.01	99.5	1935.29	96.8	1918.84	95.9	1952.94	97.6
Thallium	TL	ICP	IP090971	2000.0	1968.98	98.4	2000.0	1945.90	97.3	1950.82	97.5	1903.29	95.2	1885.73	94.3	1920.41	96.0
Vanadium	V	ICP	IP090971	1000.0	1003.84	100.4	1000.0	994.79	99.5	1005.07	100.5	991.49	99.1	985.98	98.6	1006.89	100.7
Zinc	ZN	ICP	IP090971	1000.0	981.31	98.1	1000.0	981.82	98.2	971.24	97.1	965.96	96.6	961.40	96.1	961.04	96.1

Control Limits: Mercury 80-120; Other Metals 90-110

TL08:00134

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS:ug/L

SDG: TL08

ANALYTE	EL	M	RUN	CCVTV	CCV6	%R	CCV7	%R	CCV8	%R	CCV9	%R	CCV10	%R	CCV11	%R
Aluminum	AL	ICP	IP090971	2000.0	2017.84	100.9	2016.07	100.8	1997.17	99.9	1999.71	100.0	2011.60	100.6		
Arsenic	AS	PMS	MS090981	50.0	48.62	97.2	49.29	98.6	49.49	99.0	49.17	98.3	49.31	98.6		
Cadmium	CD	ICP	IP090971	1000.0	1019.61	102.0	1013.67	101.4	1026.03	102.6	1035.40	103.5	1024.28	102.4		
Chromium	CR	ICP	IP090971	1000.0	1020.01	102.0	1023.77	102.4	1013.19	101.3	1014.34	101.4	1022.19	102.2		
Copper	CU	ICP	IP090971	1000.0	1024.82	102.5	1014.44	101.4	1028.92	102.9	1036.73	103.7	1018.84	101.9		
Lead	PB	ICP	IP090971	2000.0	1884.39	94.2	1922.93	96.1	1895.24	94.8	1916.06	95.8	1919.22	96.0		
Mercury	HG	CVA	HG090801	4.0	4.16	104.0	4.07	101.8	4.17	104.3	4.18	104.5	4.21	105.3	4.22	105.5
Nickel	NI	ICP	IP090971	1000.0	971.12	97.1	976.60	97.7	963.48	96.3	970.58	97.1	985.18	98.5		
Selenium	SE	ICP	IP090971	2000.0	1944.99	97.2	1951.31	97.6	1959.81	98.0	1965.10	98.3	1981.37	99.1		
Thallium	TL	ICP	IP090971	2000.0	1908.13	95.4	1922.56	96.1	1927.22	96.4	1937.70	96.9	1955.12	97.8		
Vanadium	V	ICP	IP090971	1000.0	997.17	99.7	990.94	99.1	998.08	99.8	1007.50	100.8	997.60	99.8		
Zinc	ZN	ICP	IP090971	1000.0	971.54	97.2	974.85	97.5	960.72	96.1	961.14	96.1	975.12	97.5		

Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (1)

TL08-004135

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TL08

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Arsenic	AS	PMS	MS091381	50.0	49.64	99.3	50.0	50.58	101.2	50.48	101.0	51.04	102.1				
Mercury	HG	CVA	HG090902	8.0	8.03	100.4	4.0	4.10	102.5	4.05	101.3						

Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (1)

TL08.00136

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TL08

ANALYTE	EL	M	RUN	CRA/I TV	CR-1	%R	CR-2	%R	CR-3	%R	CR-4	%R	CR-5	%R	CR-6	%R
Aluminum	AL	ICP	IP090971	50.0	57.79	**115.6**	70.77	**141.5**	64.75	**129.5**						
Arsenic	AS	PMS	MS090981	0.2	0.20	**100.0**										
Cadmium	CD	ICP	IP090971	2.0	2.05	**102.5**	2.10	**105.0**	2.00	**100.0**						
Chromium	CR	ICP	IP090971	5.0	6.23	**124.6**	6.22	**124.4**	6.46	**129.2**						
Copper	CU	ICP	IP090971	2.0	2.32	**116.0**	2.76	**138.0**	2.37	**118.5**						
Lead	PB	ICP	IP090971	20.0	20.13	**100.7**	19.31	**96.6**	19.88	**99.4**						
Mercury	HG	CVA	HG090801	0.1	0.11	**110.0**										
Nickel	NI	ICP	IP090971	10.0	8.97	**89.7**	9.79	**97.9**	9.72	**97.2**						
Selenium	SE	ICP	IP090971	50.0	60.45	**120.9**	57.18	**114.4**	52.62	**105.2**						
Thallium	TL	ICP	IP090971	50.0	48.95	**97.9**	49.55	**99.1**	50.93	**101.9**						
Vanadium	V	ICP	IP090971	3.0	3.18	**106.0**	3.05	**101.7**	3.13	**104.3**						
Zinc	ZN	ICP	IP090971	10.0	9.54	**95.4**	9.68	**96.8**	9.38	**93.8**						
Arsenic	AS	PMS	MS091381	0.2	0.23	**115.0**										
Mercury	HG	CVA	HG090902	0.1	0.10	**100.0**										

Control Limits: no control limits have been established by the EPA at this time.

TL08 : 00131

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS:ug/L

SDG: TL08

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Aluminum	AL	ICP	IP090971	200.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Arsenic	AS	PMS	MS090981	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Cadmium	CD	ICP	IP090971	5.0	2.0	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chromium	CR	ICP	IP090971	10.0	5.0	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Copper	CU	ICP	IP090971	25.0	2.0	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Lead	PB	ICP	IP090971	3.0	20.0	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U
Mercury	HG	CVA	HG090801	0.2	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	NI	ICP	IP090971	40.0	10.0	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U
Selenium	SE	ICP	IP090971	5.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Thallium	TL	ICP	IP090971	10.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Vanadium	V	ICP	IP090971	50.0	3.0	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
Zinc	ZN	ICP	IP090971	20.0	10.0	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U

TL08:00138

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

SDG: TL08

UNITS: ug/L

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB6	C	CCB7	C	CCB8	C	CCB9	C	CCB10	C	CCB11	C
Aluminum	AL	ICP	IP090971	200.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U		
Arsenic	AS	PMS	MS090981	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U		
Cadmium	CD	ICP	IP090971	5.0	2.0	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U		
Chromium	CR	ICP	IP090971	10.0	5.0	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U		
Copper	CU	ICP	IP090971	25.0	2.0	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U		
Lead	PB	ICP	IP090971	3.0	20.0	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U		
Mercury	HG	CVA	HG090801	0.2	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	NI	ICP	IP090971	40.0	10.0	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U		
Selenium	SE	ICP	IP090971	5.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U		
Thallium	TL	ICP	IP090971	10.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U		
Vanadium	V	ICP	IP090971	50.0	3.0	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U		
Zinc	ZN	ICP	IP090971	20.0	10.0	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U		

TL08-00139

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

SDG: TL08

UNITS:ug/L

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Arsenic	AS	PMS	MS091381	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U				
Mercury	HG	CVA	HG090902	0.2	0.1	0.1	U	0.1	U	0.1	U						

TL08.00146

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ICS SOURCE: I.V.

PROJECT: FRP 2011 Shoreline I

RUNID: IP090971

SDG: TL08

INSTRUMENT ID: OPTIMA ICP 2

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Aluminum	200000	200000	199814.8	198810.5	**99.4**	196672.3	197970.5	**99.0**	199642.3	198776.0	**99.4**
Antimony		1000	0.2	953.3	**95.3**	-5.3	947.4	**94.7**	-1.5	941.7	**94.2**
Arsenic		1000	6.2	1001.2	**100.1**	14.2	992.4	**99.2**	12.1	994.2	**99.4**
Barium		1000	0.1	999.0	**99.9**	0.2	973.1	**97.3**	0.7	989.7	**99.0**
Beryllium		1000	0.1	981.8	**98.2**	0.0	968.0	**96.8**	0.1	986.7	**98.7**
Boron			-5.3	-6.3		-7.9	-7.5		-7.9	-8.3	
Cadmium		1000	1.5	1011.5	**101.2**	1.6	1007.6	**100.8**	1.7	996.2	**99.6**
Calcium	100000	100000	102127.1	100541.8	**100.5**	100518.4	100817.1	**100.8**	101629.5	100253.5	**100.3**
Chromium		1000	0.0	1019.0	**101.9**	-0.1	1006.1	**100.6**	1.4	1014.1	**101.4**
Cobalt		1000	0.7	978.5	**97.9**	0.6	948.5	**94.9**	0.6	963.2	**96.3**
Copper		1000	-1.6	1031.5	**103.2**	-1.1	1042.8	**104.3**	-1.7	1024.8	**102.5**
Iron	200000	200000	198144.3	193647.8	**96.8**	192748.8	190473.8	**95.2**	196657.0	192351.1	**96.2**
Lead		1000	-2.8	964.7	**96.5**	-3.6	953.8	**95.4**	-3.5	953.4	**95.3**
Magnesium	100000	100000	102378.4	97837.0	**97.8**	101153.9	97411.8	**97.4**	101674.3	97113.1	**97.1**
Manganese		1000	0.4	948.1	**94.8**	0.2	930.3	**93.0**	0.2	943.8	**94.4**
Molybdenum			1.3	1.2		0.8	1.3		0.8	1.2	
Nickel		1000	0.2	950.5	**95.1**	0.4	925.4	**92.5**	-0.7	940.1	**94.0**
Potassium			45.5	291.1		82.1	292.6		52.7	299.3	
Selenium		1000	11.9	1008.1	**100.8**	10.2	991.2	**99.1**	10.5	994.1	**99.4**
Silicon			-3.8	-5.9		-5.1	-5.7		-1.2	-3.8	
Silver		1000	-0.9	1010.4	**101.0**	-0.7	997.8	**99.8**	-0.8	999.0	**99.9**
Sodium			15.0	16.7		42.5	36.5		5.5	10.0	
Strontium			10.5	10.3		10.4	10.3		10.7	10.5	
Thallium		1000	16.1	958.0	**95.8**	15.7	946.4	**94.6**	14.4	952.0	**95.2**
Tin			-4.1	-5.1		-4.7	-5.0		-4.6	-4.4	
Titanium			5.3	6.8		6.0	6.0		5.7	6.8	
Vanadium		1000	4.8	976.6	**97.7**	3.6	983.6	**98.4**	4.1	968.9	**96.9**
Zinc		1000	0.8	944.8	**94.5**	-0.3	926.4	**92.6**	-0.4	930.9	**93.1**

TL08.0611

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ICS SOURCE: I.V.

PROJECT: FRP 2011 Shoreline I

RUNID: MS090981

SDG: TL08

INSTRUMENT ID: PE ELAN 6000

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Arsenic		20	0.0	19.0	**95.0**						
Cadmium		20	0.0	19.5	**97.5**						
Chromium		20	0.7	20.1	**100.5**						
Cobalt		20	0.0	19.1	**95.5**						
Copper		20	0.4	19.6	**98.0**						
Manganese		20	0.5	20.1	**100.5**						
Molybdenum	400	400	400.8	392.6	**98.2**						
Nickel		20	0.5	18.9	**94.5**						
Silver		20	0.0	19.1	**95.5**						
Vanadium			0.0	-0.4							
Zinc		20	0.9	19.9	**99.5**						

TL08.00142

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ICS SOURCE: I.V.

PROJECT: FRP 2011 Shoreline I

RUNID: MS091381

SDG: TL08

INSTRUMENT ID: PE ELAN 6000

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Antimony			0.1	0.1							
Arsenic		20	0.1	20.2	**101.0**						
Cadmium		20	0.1	20.1	**100.5**						
Chromium		20	0.8	20.7	**103.5**						
Cobalt		20	0.0	19.6	**98.0**						
Copper		20	0.4	21.1	**105.5**						
Manganese		20	0.5	21.4	**107.0**						
Molybdenum	400	400	385.5	399.8	**100.0**						
Nickel		20	0.5	20.2	**101.0**						
Silver		20	0.0	19.8	**99.0**						
Vanadium			0.0	-0.5							
Zinc		20	1.0	20.8	**104.0**						

TL08-00113

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

ANALYSIS METHOD: ICP

SDG: TL08

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	MATRIX	RUNID	INITIAL SAMPLE RESULT (I)	C	SERIAL DILUTION RESULT (S)	C	% DIFFER-ENCE	Q
Aluminum	FRP-090611-011L	TL08A-L	Soil	IP090971	77672.64		76816.15		1.1	
Cadmium	FRP-090611-011L	TL08A-L	Soil	IP090971	1.64	U	10.00	U		
Chromium	FRP-090611-011L	TL08A-L	Soil	IP090971	99.15		109.35		10.3	
Copper	FRP-090611-011L	TL08A-L	Soil	IP090971	376.06		374.05		0.5	
Lead	FRP-090611-011L	TL08A-L	Soil	IP090971	128.08		123.55		3.5	
Nickel	FRP-090611-011L	TL08A-L	Soil	IP090971	84.07		87.45	B	4.0	
Selenium	FRP-090611-011L	TL08A-L	Soil	IP090971	3.00	U	250.00	U		
Thallium	FRP-090611-011L	TL08A-L	Soil	IP090971	12.08	U	250.00	U		
Vanadium	FRP-090611-011L	TL08A-L	Soil	IP090971	318.47		322.60		1.3	
Zinc	FRP-090611-011L	TL08A-L	Soil	IP090971	264.49		276.25		4.4	

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

ANALYSIS METHOD: ICP

SDG: TL08

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	MATRIX	RUNID	INITIAL SAMPLE RESULT (I)	C	SERIAL DILUTION RESULT (S)	C	% DIFFER-ENCE	Q
Aluminum	FRP-090611-023L	TL08M-L	Water	IP090971	26.59	U	250.00	U		
Cadmium	FRP-090611-023L	TL08M-L	Water	IP090971	-0.06	U	10.00	U		
Chromium	FRP-090611-023L	TL08M-L	Water	IP090971	1.00	U	25.00	U		
Copper	FRP-090611-023L	TL08M-L	Water	IP090971	0.70	U	10.00	U		
Lead	FRP-090611-023L	TL08M-L	Water	IP090971	-0.88	U	100.00	U		
Nickel	FRP-090611-023L	TL08M-L	Water	IP090971	-1.71	U	50.00	U		
Selenium	FRP-090611-023L	TL08M-L	Water	IP090971	1.63	U	250.00	U		
Thallium	FRP-090611-023L	TL08M-L	Water	IP090971	1.67	U	250.00	U		
Vanadium	FRP-090611-023L	TL08M-L	Water	IP090971	0.08	U	15.00	U		
Zinc	FRP-090611-023L	TL08M-L	Water	IP090971	1.25	U	50.00	U		

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

ANALYSIS METHOD: PMS

SDG: TL08

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	MATRIX	RUNID	INITIAL SAMPLE RESULT (I)	C	SERIAL DILUTION RESULT (S)	C	% DIFFER-ENCE	Q
Arsenic	FRP-090611-011L	TL08A-L	Soil	MS090981	2.69	B	2.85	B	5.9	

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

ANALYSIS METHOD: PMS

SDG: TL08

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	MATRIX	RUNID	INITIAL SAMPLE RESULT (I)	C	SERIAL DILUTION RESULT (S)	C	% DIFFERENCE	Q
Arsenic	FRP-090611-023L	TL08M-L	Water	MS091381	0.05	U	0.30	B		

IDLs and ICP Linear Ranges

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

SDG: TL08 UNITS: ug/L

ANALYTE	EL	METH	INSTRUMENT	WAVELENTH (nm)	GFA BACK-GROUND	CLP CRDL	RL	RL DATE	ICP LINEAR RANGE (ug/L)	ICP LR DATE
Aluminum	AL	ICP	OPTIMA ICP 2	308.22		200	50.0	4/1/2011	250000.0	8/3/2011
Arsenic	AS	PMS	PE ELAN 6000 MS	0.00		10	0.2	4/1/2011		
Cadmium	CD	ICP	OPTIMA ICP 2	228.80		5	2.0	4/1/2011	20000.0	8/3/2011
Chromium	CR	ICP	OPTIMA ICP 2	267.72		10	5.0	4/1/2011	100000.0	8/3/2011
Copper	CU	ICP	OPTIMA ICP 2	324.75		25	2.0	4/1/2011	40000.0	8/3/2011
Lead	PB	ICP	OPTIMA ICP 2	220.35		3	20.0	4/1/2011	300000.0	8/3/2011
Mercury	HG	CVA	CETAC MERCURY	253.70		0.2	0.1	4/1/2011		
Nickel	NI	ICP	OPTIMA ICP 2	231.60		40	10.0	4/1/2011	100000.0	8/3/2011
Selenium	SE	ICP	OPTIMA ICP 2	196.02		5	50.0	4/1/2011	20000.0	8/3/2011
Thallium	TL	ICP	OPTIMA ICP 2	190.86		10	50.0	4/1/2011	30000.0	8/3/2011
Vanadium	V	ICP	OPTIMA ICP 2	292.40		50	3.0	4/1/2011	50000.0	8/3/2011
Zinc	ZN	ICP	OPTIMA ICP 2	213.86		20	10.0	4/1/2011	100000.0	8/3/2011

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

IEC DATE: 9/7/2011

SDG: TL08

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	AL	AS	BA	BE	CA	CD	CO	CR	CU	FE
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	10.6149000	0.0000000	0.0000000
Arsenic	188.98	0.0000000	0.0000000	0.0000000	0.0000000	0.0773398	0.0000000	-0.8345790	1.1215100	0.0000000	0.0000000
Barium	233.53	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.1892080	0.0000000	0.0000000	0.0622379
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	5.2418600	0.0000000	0.0000000	0.0000000	0.0000000	0.1195910	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.5252460	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0187178	0.0000000	0.0000000	0.0000000	0.0000000	-0.0439811
Cobalt	228.62	0.0000000	0.0000000	0.1238430	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.2279050	-0.0318969	0.0000000	-0.0695283
Iron	273.96	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-1.6163900	0.0000000	0.0000000
Lead	220.35	-0.1778670	0.0000000	0.0000000	0.0000000	-0.0252598	0.0000000	0.0000000	-2.3072100	1.2452600	0.0570036
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.1525560	0.0000000	-1.6380600	-1.2519300	0.0000000	0.6727000
Manganese	257.61	0.0051426	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.0048944
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0228298	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0634207	0.0000000	0.3514040	0.0000000	0.0000000	0.0000000
Silicon	288.16	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-3.4885200	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	6.5805300	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0678735	0.0000000	1.7836600	0.3510820	0.0000000	-0.1294840
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	-0.1147000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	0.0000000	0.0000000	0.1641450	0.0000000	0.0000000	0.1632010	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-3.9361800	0.0000000	0.1100040
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.1475900	0.0000000	0.0000000

TL08-00119

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

IEC DATE: 9/7/2011

SDG: TL08

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	MG	MN	MO	NI	PB	SB	TI	TL	V	ZN
Aluminum	308.22	0.0000000	0.0000000	15.3131000	0.0000000	0.0000000	0.0000000	1.5167500	0.0000000	17.6996000	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	-0.4730780	0.0000000	0.0000000	-0.8897510	0.0000000	-3.3546800	0.0000000
Arsenic	188.98	0.0000000	0.0000000	2.3330800	0.0000000	0.0000000	0.0000000	-5.4412000	0.0000000	0.0000000	0.0000000
Barium	233.53	0.0000000	0.0000000	0.0000000	0.0766262	0.0000000	0.0000000	0.0000000	0.0000000	0.6419380	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.2960780	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000000	-0.7324130	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0581570	0.0000000	0.1395070	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.2773470	0.0000000
Cobalt	228.62	0.0000000	0.0000000	-0.1579570	0.1588330	0.0000000	0.0000000	1.8115900	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0080384	0.0000000	0.2688440	0.0000000	0.0000000	0.0000000	0.2461180	0.0000000	0.0000000	0.0000000
Iron	273.96	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	8.4403600	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	-4.6256200	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0048376	0.0000000	0.0000000	0.0000000	-0.2175850	0.0000000	0.0000000	0.0000000	-0.0271775	0.0000000
Molybdenum	202.03	0.0148620	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.7744280	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0735290	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	288.16	-0.1460000	0.0000000	-2.7358100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.2442620	0.2419260	0.0000000	0.0000000	0.0000000	-0.0470302	0.0000000	-0.2758080	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	342.4230000	0.0000000	0.0000000	318.1570000
Thallium	190.80	0.0000000	-1.4179000	1.9562000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	1.2892100	0.0000000
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.5848020	-0.3044710	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	0.9873960	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	-0.1398510	-0.6804250	0.0000000	0.0000000	0.0000000	0.6004670	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.2377960	0.0000000	-0.0708227	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

TL08 : 00150

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ANALYSIS METHOD: ICP

PROJECT: FRP 2011 Shoreline I

ARI PREP CODE: SWC

SDG: TL08

PREPDATE: 9/8/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-090611-011	TL08A	1.037	0.0	50.0
FRP-090611-011D	TL08ADUP	1.034	0.0	50.0
FRP-090611-011S	TL08ASPK	1.038	0.0	50.0
FRP-090611-012	TL08B	1.073	0.0	50.0
FRP-090611-013	TL08C	1.075	0.0	50.0
FRP-090611-014	TL08D	1.059	0.0	50.0
FRP-090611-015	TL08E	1.081	0.0	50.0
FRP-090611-016	TL08F	1.029	0.0	50.0
FRP-090611-017	TL08G	1.072	0.0	50.0
FRP-090611-018	TL08H	1.013	0.0	50.0
FRP-090611-019	TL08I	1.055	0.0	50.0
FRP-090611-020	TL08J	1.051	0.0	50.0
FRP-090611-021	TL08K	1.067	0.0	50.0
FRP-090611-022	TL08L	1.023	0.0	50.0
PBS	TL08MB1	1.000	0.0	50.0
LCSS	TL08MB1SPK	1.000	0.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ANALYSIS METHOD: ICP

PROJECT: FRP 2011 Shoreline I

ARI PREP CODE: TWC

SDG: TL08

PREPDATE: 9/8/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-090611-023	TL08M	0.000	50.0	50.0
PBW	TL08MB2	0.000	50.0	50.0
LCSW	TL08MB2SPK	0.000	50.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ANALYSIS METHOD: PMS

PROJECT: FRP 2011 Shoreline I

ARI PREP CODE: REN

SDG: TL08

PREPDATE: 9/8/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-090611-023	TL08M	0.000	50.0	25.0
PBW	TL08MB2	0.000	50.0	25.0
LCSW	TL08MB2SPK	0.000	50.0	25.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

SDG: TL08

ANALYSIS METHOD: PMS

ARI PREP CODE: SWN

PREPDATE: 9/8/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-090611-011	TL08A	1.063	0.0	50.0
FRP-090611-011D	TL08ADUP	1.066	0.0	50.0
FRP-090611-011S	TL08ASPK	1.059	0.0	50.0
FRP-090611-012	TL08B	1.029	0.0	50.0
FRP-090611-013	TL08C	1.018	0.0	50.0
FRP-090611-014	TL08D	1.069	0.0	50.0
FRP-090611-015	TL08E	1.080	0.0	50.0
FRP-090611-016	TL08F	1.067	0.0	50.0
FRP-090611-017	TL08G	1.052	0.0	50.0
FRP-090611-018	TL08H	1.073	0.0	50.0
FRP-090611-019	TL08I	1.066	0.0	50.0
FRP-090611-020	TL08J	1.050	0.0	50.0
FRP-090611-021	TL08K	1.084	0.0	50.0
FRP-090611-022	TL08L	1.075	0.0	50.0
PBS	TL08MB1	1.000	0.0	50.0
LCSS	TL08MB1SPK	1.000	0.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ANALYSIS METHOD: CVA

PROJECT: FRP 2011 Shoreline I

ARI PREP CODE: SMM

SDG: TL08

PREPDATE: 9/8/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-090611-011	TL08A	0.265	0.0	50.0
FRP-090611-011D	TL08ADUP	0.263	0.0	50.0
FRP-090611-011S	TL08ASPK	0.263	0.0	50.0
FRP-090611-012	TL08B	0.229	0.0	50.0
FRP-090611-013	TL08C	0.261	0.0	50.0
FRP-090611-014	TL08D	0.235	0.0	50.0
FRP-090611-015	TL08E	0.222	0.0	50.0
FRP-090611-016	TL08F	0.236	0.0	50.0
FRP-090611-017	TL08G	0.234	0.0	50.0
FRP-090611-018	TL08H	0.282	0.0	50.0
FRP-090611-019	TL08I	0.243	0.0	50.0
FRP-090611-020	TL08J	0.278	0.0	50.0
FRP-090611-021	TL08K	0.210	0.0	50.0
FRP-090611-022	TL08L	0.261	0.0	50.0
PBS	TL08MB1	0.200	0.0	50.0
LCSW	TL08MB1SPK	0.200	0.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ANALYSIS METHOD: CVA

PROJECT: FRP 2011 Shoreline I

ARI PREP CODE: TWM

SDG: TL08

PREPDATE: 9/8/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-090611-023	TL08M	0.000	20.0	20.0
PBW	TL08MB2	0.000	20.0	20.0
LCSW	TL08MB2SPK	0.000	20.0	20.0

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/9/2011

SDG: TL08 RUNID: IP090971 METHOD: ICP END DATE: 9/9/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	09553			X						X		X	X								X	X		X				X		X	X
S2	S2	1.00	09594									X		X	X																	X	
S3	S3	1.00	10012																				X	X		X				X			X
S4	S4	1.00	10035																														
S5	S5	1.00	10060			X																											
ICV	ICV	1.00	10210			X						X		X	X								X	X		X				X		X	X
ICB	ICB	1.00	10250			X						X		X	X								X	X		X				X		X	X
CRI	CRII	1.00	10291			X						X		X	X								X	X		X				X		X	X
ICSA	ICSAI	1.00	10332			X						X		X	X								X	X		X				X		X	X
ICSAB	ICSABI	1.00	10373			X						X		X	X								X	X		X				X		X	X
CCV	CCV1	1.00	10412			X						X		X	X								X	X		X				X		X	X
CCB	CCB1	1.00	10451			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TL11MB	2.00	10493																														
ZZZZZZ	TK88MB1	1.00	10534																														
ZZZZZZ	TK88A-L	5.00	10575																														
ZZZZZZ	TK88A	1.00	11020																														
ZZZZZZ	TK88ADUP	1.00	11061																														
ZZZZZZ	TK88ASPK	1.00	11104																														
ZZZZZZ	ZZZZZZ	1.00	11150																														
ZZZZZZ	TK88B	1.00	11192																														
ZZZZZZ	TK88C	1.00	11233																														
ZZZZZZ	TK88MB1SPK	1.00	11274																														
CCV	CCV2	1.00	11314			X						X		X	X								X	X		X				X		X	X
CCB	CCB2	1.00	11354			X						X		X	X								X	X		X				X		X	X
CRI	CRIF	1.00	11395			X						X		X	X								X	X		X				X		X	X
ICSA	ICSAF	1.00	11440			X						X		X	X								X	X		X				X		X	X
ICSAB	ICSABF	1.00	11481			X						X		X	X								X	X		X				X		X	X
CCV	CCV3	1.00	11520			X						X		X	X								X	X		X				X		X	X
CCB	CCB3	1.00	11560			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TL17MB1	2.00	12001																														
ZZZZZZ	TL17B	2.00	12042																														
ZZZZZZ	TL17C	2.00	12083																														
ZZZZZZ	TL17D	2.00	12124																														
ZZZZZZ	TL17E	2.00	12170																														
ZZZZZZ	TL17ADUP	2.00	12211																														

FORM XIV

TL08 00157

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/9/2011

SDG: TL08 RUNID: IP090971 METHOD: ICP END DATE: 9/9/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	TL17A	2.00	12252																														
ZZZZZZ	TL17ASPK	2.00	12292																														
ZZZZZZ	TL17APOST	2.00	12332																														
ZZZZZZ	TL17MB1SPK	2.00	12372																														
CCV	CCV4	1.00	12411			X						X		X	X								X	X		X				X		X	X
CCB	CCB4	1.00	12451			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TL05MB	1.00	12492																														
ZZZZZZ	TL05A	1.00	12533																														
ZZZZZZ	TL05B	1.00	12574																														
ZZZZZZ	TL05C	1.00	13015																														
ZZZZZZ	TL05D	1.00	13060																														
ZZZZZZ	TL05E	1.00	13101																														
ZZZZZZ	TL11F	2.00	13143																														
ZZZZZZ	TL11G	2.00	13182																														
ZZZZZZ	TL11H	2.00	13222																														
ZZZZZZ	TL11MBSPK	2.00	13262																														
CCV	CCV5	1.00	13301			X						X		X	X								X	X		X				X		X	X
CCB	CCB5	1.00	13341			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TK88MB1	1.00	13382																														
ZZZZZZ	TL05F	1.00	13424																														
FRP-090611-012	TL08B	2.00	13465			X						X		X	X								X	X		X				X		X	X
FRP-090611-013	TL08C	2.00	13504			X						X		X	X								X	X		X				X		X	X
FRP-090611-014	TL08D	2.00	13544			X						X		X	X								X	X		X				X		X	X
FRP-090611-015	TL08E	2.00	13584			X						X		X	X								X	X		X				X		X	X
FRP-090611-016	TL08F	2.00	14023			X						X		X	X								X	X		X				X		X	X
FRP-090611-017	TL08G	2.00	14063			X						X		X	X								X	X		X				X		X	X
FRP-090611-018	TL08H	2.00	14102			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TL05MBSPK	1.00	14144																														
CCV	CCV6	1.00	14183			X						X		X	X								X	X		X				X		X	X
CCB	CCB6	1.00	14223			X						X		X	X								X	X		X				X		X	X
PBS	TL08MB1	2.00	14264			X						X		X	X								X	X		X				X		X	X
FRP-090611-011L	TL08A-L	10.00	14305			X						X		X	X								X	X		X				X		X	X
FRP-090611-011	TL08A	2.00	14345			X						X		X	X								X	X		X				X		X	X
FRP-090611-011D	TL08ADUP	2.00	14385			X						X		X	X								X	X		X				X		X	X
FRP-090611-011S	TL08ASPK	2.00	14424			X						X		X	X								X	X		X				X		X	X

FORM XIV

TL08.09158

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/9/2011

SDG: TL08 RUNID: IP090971 METHOD: ICP END DATE: 9/9/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	ZZZZZZ	2.00	14463																														
FRP-090611-019	TL08I	2.00	14501			X						X		X	X								X	X		X				X		X	X
FRP-090611-020	TL08J	2.00	14541			X						X		X	X								X	X		X				X		X	X
FRP-090611-021	TL08K	2.00	14581			X						X		X	X								X	X		X				X		X	X
LCSS	TL08MB1SPK	2.00	15020			X						X		X	X								X	X		X				X		X	X
CCV	CCV7	1.00	15060			X						X		X	X								X	X		X				X		X	X
CCB	CCB7	1.00	15100			X						X		X	X								X	X		X				X		X	X
PBW	TL08MB2	1.00	15141			X						X		X	X								X	X		X				X		X	X
FRP-090611-023L	TL08M-L	5.00	15182			X						X		X	X								X	X		X				X		X	X
FRP-090611-023	TL08M	1.00	15223			X						X		X	X								X	X		X				X		X	X
FRP-090611-022	TL08L	2.00	15265																														
ZZZZZZ	TL17ADUP	2.00	15304																														
ZZZZZZ	TL17A	2.00	15345																														
ZZZZZZ	TL17ASPK	2.00	15391																														
LCSW	TL08MB2SPK	1.00	15431			X						X		X	X								X	X		X				X		X	X
CCV	CCV8	1.00	15540			X						X		X	X								X	X		X				X		X	X
CCB	CCB8	1.00	15580			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TL48MB	2.00	16020																														
ZZZZZZ	TL38MB1	2.00	16062																														
ZZZZZZ	ZZZZZZ	10.00	16103																														
ZZZZZZ	TL38A	2.00	16142																														
ZZZZZZ	TL48A	2.00	16182																														
FRP-090611-022	TL08L	2.00	16221			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TL38MB1SPK	2.00	16260																														
ZZZZZZ	TL48MBSPK	2.00	16300																														
ZZZZZZ	ZZZZZZ	2.00	16341																														
CCV	CCV9	1.00	16402			X						X		X	X								X	X		X				X		X	X
CCB	CCB9	1.00	16441			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TL38A-L	25.00	16483																														
ZZZZZZ	TL38A	5.00	16522																														
ZZZZZZ	ZZZZZZ	1.00	16581																														
CRI	CRIF1	1.00	17024			X						X		X	X								X	X		X				X		X	X
ICSA	ICSAF1	1.00	17065			X						X		X	X								X	X		X				X		X	X
ICSAB	ICSABF1	1.00	17110			X						X		X	X								X	X		X				X		X	X
CCV	CCV10	1.00	17144			X						X		X	X								X	X		X				X		X	X

FORM XIV

TL08-0063

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/9/2011

SDG: TL08 RUNID: IP090971 METHOD: ICP END DATE: 9/9/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
CCB	CCB10	1.00	17184			X						X		X	X								X	X		X				X		X	X

TL08:00160

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/9/2011

SDG: TL08 RUNID: MS090981 METHOD: PMS END DATE: 9/9/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	09330				X																										
S1	S1	1.00	09410				X																										
S2	S2	1.00	09490				X																										
S3	S3	1.00	09560				X																										
S4	S4	1.00	10040				X																										
ZZZZZZ	Rinse Sampl	1.00	10120																														
ICV	MICV	1.00	10190				X																										
ICB	ICB	1.00	10270				X																										
CCV	MCCV1	1.00	10340				X																										
CCB	CCB1	1.00	10410				X																										
ZZZZZZ	ZZZZZZ	1.00	10480																														
ZZZZZZ	ZZZZZZ	1.00	10560																														
ZZZZZZ	ZZZZZZ	1.00	11030																														
ZZZZZZ	LR200	1.00	11110																														
ZZZZZZ	LR300	1.00	11180																														
CCV	MCCV2	1.00	11260				X																										
CCB	CCB2	1.00	11330				X																										
S0	S0	1.00	11540				X																										
CCV	MCCV3	1.00	12010				X																										
CCB	CCB3	1.00	12090				X																										
CRI	MCRI	1.00	12170				X																										
ICSA	ICSAI	1.00	12240				X																										
ICSAB	ICSABI	1.00	12320				X																										
CCV	MCCV4	1.00	12410				X																										
CCB	CCB4	1.00	12480				X																										
ZZZZZZ	TL12MB1	2.00	12550																														
ZZZZZZ	TL12MB2	2.00	13010																														
ZZZZZZ	TL12MB1SPK	2.00	13080																														
ZZZZZZ	TL12MB2SPK	2.00	13150																														
ZZZZZZ	TL12A	2.00	13210																														
ZZZZZZ	TL12B	2.00	13280																														
ZZZZZZ	TK57D	2.00	13340																														
ZZZZZZ	TK50E	20.00	13410																														
FRP-090611-012	TL08B	20.00	13480				X																										
FRP-090611-013	TL08C	20.00	13540				X																										

FORM XIV

TL08-090151

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/9/2011

SDG: TL08 RUNID: MS090981 METHOD: PMS END DATE: 9/9/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
CCV	MCCV5	1.00	14010				X																										
CCB	CCB5	1.00	14080				X																										
S0	S0	1.00	14150				X																										
CCV	MCCV6	1.00	14230				X																										
CCB	CCB6	1.00	14300				X																										
PBW	TL08MB2	2.00	14370																														
LCSW	TL08MB2SPK	2.00	14440																														
ZZZZZZ	ZZZZZZ	10.00	14510																														
ZZZZZZ	TK88A	2.00	14570																														
ZZZZZZ	TK88ADUP	2.00	15040																														
ZZZZZZ	TK88ASPK	2.00	15100																														
ZZZZZZ	ZZZZZZ	10.00	15170																														
FRP-090611-023	TL08M	2.00	15230																														
FRP-090611-014	TL08D	20.00	15300																														
FRP-090611-015	TL08E	20.00	15360																														
CCV	MCCV7	1.00	15430				X																										
CCB	CCB7	1.00	15500				X																										
S0	S0	1.00	15570				X																										
CCV	MCCV8	1.00	16070				X																										
CCB	CCB8	1.00	16150				X																										
ZZZZZZ	TL38MB1	20.00	16220																														
ZZZZZZ	TL38MB1SPK	20.00	16290																														
ZZZZZZ	ZZZZZZ	100.00	16360																														
ZZZZZZ	TL38A	20.00	16420																														
FRP-090611-016	TL08F	20.00	16490				X																										
FRP-090611-017	TL08G	20.00	16550				X																										
FRP-090611-018	TL08H	20.00	17020				X																										
FRP-090611-019	TL08I	20.00	17090				X																										
FRP-090611-020	TL08J	20.00	17150				X																										
FRP-090611-021	TL08K	20.00	17220				X																										
CCV	MCCV9	1.00	17280				X																										
CCB	CCB9	1.00	17350				X																										
PBS	TL08MB1	20.00	17430				X																										
LCSS	TL08MB1SPK	20.00	17490				X																										
FRP-090611-011L	TL08A-L	100.00	17560				X																										

FORM XIV

TL08 : 00152

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/9/2011

SDG: TL08 RUNID: MS090981 METHOD: PMS END DATE: 9/9/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
FRP-090611-011	TL08A	20.00	18020				X																										
FRP-090611-011D	TL08ADUP	20.00	18090				X																										
FRP-090611-011S	TL08ASPK	20.00	18150				X																										
ZZZZZZ	ZZZZZZ	20.00	18220																														
FRP-090611-022	TL08L	20.00	18280				X																										
ZZZZZZ	TK85A	20.00	18350																														
ZZZZZZ	TK85B	20.00	18420																														
CCV	MCCV10	1.00	18480				X																										
CCB	CCB10	1.00	18550				X																										

TL08.001SS

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/13/2011

SDG: TL08 RUNID: MS091381 METHOD: PMS END DATE: 9/13/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	11310				X																										
S1	S1	1.00	11390				X																										
S2	S2	1.00	11470				X																										
S3	S3	1.00	11550				X																										
S4	S4	1.00	12030				X																										
ZZZZZZ	Rinse Sampl	1.00	12100																														
ICV	MICV	1.00	12170				X																										
ICB	ICB	1.00	12250				X																										
CCV	MCCV1	1.00	12320				X																										
CCB	CCB1	1.00	12390				X																										
CRI	MCRI	1.00	12460				X																										
ICSA	ICSAI	1.00	12530				X																										
ICSAB	ICSABI	1.00	13010				X																										
ZZZZZZ	LR200	1.00	13080																														
ZZZZZZ	LR300	1.00	13160																														
CCV	MCCV2	1.00	13230				X																										
CCB	CCB2	1.00	13310				X																										
ZZZZZZ	TL38MB1	20.00	13380																														
PBW	TL08MB2	2.00	13440				X																										
LCSW	TL08MB2SPK	2.00	13510				X																										
ZZZZZZ	TL38MB1SPK	20.00	13570																														
ZZZZZZ	TL38A-L	100.00	14040																														
ZZZZZZ	TL38A	20.00	14110																														
FRP-090611-023L	TL08M-L	10.00	14170				X																										
FRP-090611-023	TL08M	2.00	14240				X																										
FRP-090611-014	TL08D	20.00	14300				X																										
FRP-090611-015	TL08E	20.00	14370				X																										
CCV	MCCV3	1.00	14440				X																										
CCB	CCB3	1.00	14510				X																										

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: CETAC MERCURY START DATE: 9/8/2011

SDG: TL08 RUNID: HG090801 METHOD: CVA END DATE: 9/8/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	11354														X																
S0.1	S0.1	1.00	11371														X																
S0.5	S0.5	1.00	11385														X																
S1	S1	1.00	11403														X																
S2	S2	1.00	11420														X																
S5	S5	1.00	11434														X																
S10	S10	1.00	11452														X																
ICV	AICV	1.00	11481														X																
ICB	ICB	1.00	11495														X																
CCV	ACCV1	1.00	11513														X																
CCB	CCB1	1.00	11531														X																
CRA	CRA	1.00	11544														X																
ZZZZZZ	TK50MB1	1.00	11562																														
ZZZZZZ	TK50MB1SPK	1.00	11580																														
ZZZZZZ	TK50A	1.00	11593																														
ZZZZZZ	TK50ADUP	1.00	12011																														
ZZZZZZ	TK50ASPK	1.00	12024																														
ZZZZZZ	TK50B	1.00	12042																														
ZZZZZZ	TK50C	1.00	12060																														
ZZZZZZ	TK50D	1.00	12074																														
ZZZZZZ	TK50E	1.00	12091																														
CCV	ACCV2	1.00	12105														X																
CCB	CCB2	1.00	12123														X																
ZZZZZZ	TK50F	1.00	12141																														
ZZZZZZ	TK50G	1.00	12155																														
ZZZZZZ	TK50H	1.00	12172																														
ZZZZZZ	TK50I	1.00	12190																														
ZZZZZZ	TK50J	1.00	12242																														
ZZZZZZ	TK50K	1.00	12305																														
ZZZZZZ	TK50L	1.00	12323																														
ZZZZZZ	TK50M	1.00	12341																														
ZZZZZZ	TK50N	1.00	12354																														
ZZZZZZ	TK50O	1.00	12372																														
CCV	ACCV3	1.00	12390														X																
CCB	CCB3	1.00	12404														X																

FORM XIV

TL08.00155

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I | INSTRUMENT ID: CETAC MERCURY | START DATE: 9/8/2011

SDG: TL08 | RUNID: HG090801 METHOD: CVA | END DATE: 9/8/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	TK50P	1.00	12422																														
ZZZZZZ	TK50Q	1.00	12440																														
ZZZZZZ	TK50R	1.00	12454																														
ZZZZZZ	TL17MB1	1.00	12471																														
ZZZZZZ	TL17MB1SPK	1.00	12485																														
ZZZZZZ	TL17A	1.00	12502																														
ZZZZZZ	TL17ADUP	1.00	12520																														
ZZZZZZ	TL17ASPK	1.00	12534																														
ZZZZZZ	TL17B	1.00	12551																														
ZZZZZZ	TL17C	1.00	12565																														
CCV	ACCV4	1.00	12583														X																
CCB	CCB4	1.00	13001														X																
ZZZZZZ	TL17D	1.00	13015																														
ZZZZZZ	TL17E	1.00	13033																														
CCV	ACCV5	1.00	13051														X																
CCB	CCB5	1.00	13065														X																
ZZZZZZ	TL27MB	1.00	13083																														
ZZZZZZ	TL27MBSPK	1.00	13101																														
ZZZZZZ	TL27A	1.00	13114																														
ZZZZZZ	TL25MB1	1.00	13132																														
ZZZZZZ	TL25MB1SPK	1.00	13145																														
ZZZZZZ	TL25A	1.00	13163																														
ZZZZZZ	TL25B	1.00	13181																														
ZZZZZZ	TL25C	1.00	13195																														
ZZZZZZ	TL25D	1.00	13212																														
ZZZZZZ	TL25E	1.00	13230																														
CCV	ACCV6	1.00	13244														X																
CCB	CCB6	1.00	13262														X																
ZZZZZZ	TL25F	1.00	13280																														
ZZZZZZ	TL11MB	1.00	13294																														
ZZZZZZ	TL11MBSPK	1.00	13312																														
ZZZZZZ	TL11F	1.00	13330																														
ZZZZZZ	TL11G	1.00	13343																														
ZZZZZZ	TL11H	1.00	13361																														
ZZZZZZ	TL09MB	1.00	13375																														

FORM XIV

TL08.00156

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: CETAC MERCURY START DATE: 9/8/2011

SDG: TL08 RUNID: HG090801 METHOD: CVA END DATE: 9/8/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	TL09MBSPK	1.00	13392																														
ZZZZZZ	TL09A	1.00	13410																														
CCV	ACCV7	1.00	13424														X																
CCB	CCB7	1.00	13442														X																
ZZZZZZ	TK54MB	1.00	13461																														
ZZZZZZ	TK54MBSPK	1.00	13475																														
ZZZZZZ	TK54A	1.00	13492																														
ZZZZZZ	TK74MB	1.00	13510																														
ZZZZZZ	TK74MBSPK	1.00	13523																														
ZZZZZZ	TK74A	1.00	13541																														
ZZZZZZ	TK74B	1.00	13555																														
ZZZZZZ	TK74C	1.00	13572																														
ZZZZZZ	TK74D	1.00	13590																														
ZZZZZZ	TK74E	1.00	14004																														
CCV	ACCV8	1.00	14022														X																
CCB	CCB8	1.00	14040														X																
ZZZZZZ	TK74F	1.00	14054																														
ZZZZZZ	TK74G	1.00	14071																														
ZZZZZZ	TK74H	1.00	14085																														
ZZZZZZ	TK74I	1.00	14103																														
ZZZZZZ	TK74IDUP	1.00	14120																														
ZZZZZZ	TK74ISPK	1.00	14134																														
ZZZZZZ	TK50I	100.00	14151																														
ZZZZZZ	TK50J	100.00	14165																														
ZZZZZZ	TK50M	2.00	14183																														
PBW	TL08MB1	1.00	14200														X																
CCV	ACCV9	1.00	14214														X																
CCB	CCB9	1.00	14232														X																
LCSW	TL08MB1SPK	1.00	14250														X																
FRP-090611-011	TL08A	1.00	14264														X																
FRP-090611-011D	TL08ADUP	1.00	14282														X																
FRP-090611-011S	TL08ASPK	1.00	14300														X																
FRP-090611-012	TL08B	1.00	14313														X																
FRP-090611-013	TL08C	1.00	14331														X																
FRP-090611-014	TL08D	1.00	14344														X																

FORM XIV

TL08.00157

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: CETAC MERCURY START DATE: 9/8/2011

SDG: TL08 RUNID: HG090801 METHOD: CVA END DATE: 9/8/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
FRP-090611-015	TL08E	1.00	14362														X																
FRP-090611-016	TL08F	1.00	14380														X																
FRP-090611-017	TL08G	1.00	14393														X																
CCV	ACCV10	1.00	14411														X																
CCB	CCB10	1.00	14425														X																
FRP-090611-018	TL08H	1.00	14443														X																
FRP-090611-019	TL08I	1.00	14461														X																
FRP-090611-020	TL08J	1.00	14475														X																
FRP-090611-021	TL08K	1.00	14492														X																
FRP-090611-022	TL08L	1.00	14510														X																
CCV	ACCV11	1.00	14524														X																
CCB	CCB11	1.00	14542														X																

TL08:00168

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: CETAC MERCURY START DATE: 9/9/2011

SDG: TL08 RUNID: HG090902 METHOD: CVA END DATE: 9/9/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	13391														X																
S0.1	S0.1	1.00	13405														X																
S0.5	S0.5	1.00	13423														X																
S1	S1	1.00	13440														X																
S2	S2	1.00	13454														X																
S5	S5	1.00	13472														X																
S10	S10	1.00	13490														X																
ICV	AICV	1.00	13522														X																
ICB	ICB	1.00	13540														X																
CCV	ACCV1	1.00	13553														X																
CCB	CCB1	1.00	13571														X																
CRA	CRA	1.00	13585														X																
PBW	TL08MB2	1.00	14003														X																
LCSW	TL08MB2SPK	1.00	14020														X																
FRP-090611-023	TL08M	1.00	14034														X																
CCV	ACCV2	1.00	14052														X																
CCB	CCB2	1.00	14070														X																

TL08.00155

General Chemistry Analysis
Report and Summary QC Forms

ARI Job ID: TL08

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
pH by Method EPA 150.1

Data Release Authorized:
Reported: 09/15/11
Date Received: 09/06/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
FRP-090611-023 TL08M 11-19405	09/06/11	Water	09/06/11 17:05 090611#1	0.01	5.24

Reported in std units

RL-Analytical reporting limit
U-Undetected at reported detection limit

REPLICATE RESULTS-CONVENTIONALS
TL08-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/15/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: TL08M Client ID: FRP-090611-023					
pH	09/06/11	std units	5.24	5.24	0.00

pH is evaluated as the Absolute Difference between the values rather than Relative Percent Difference

LAB CONTROL RESULTS-CONVENTIONALS
TL08-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/15/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	LCS	Spike Added	Recovery
pH	09/06/11	std units	6.98	7.00	0.02

pH is evaluated as the Absolute Difference between the values rather than Percent Recovery.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
pH by Method SW9045

Data Release Authorized:
Reported: 09/09/11
Date Received: 09/06/11

QC Report No: TL08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	RL	Result
FRP-090611-011 TL08A 11-19393	09/06/11	Soil	09/08/11	0.01	6.24
FRP-090611-012 TL08B 11-19394	09/06/11	Soil	09/08/11	0.01	5.98
FRP-090611-013 TL08C 11-19395	09/06/11	Soil	09/08/11	0.01	9.04
FRP-090611-014 TL08D 11-19396	09/06/11	Soil	09/08/11	0.01	8.69
FRP-090611-015 TL08E 11-19397	09/06/11	Soil	09/08/11	0.01	7.68
FRP-090611-016 TL08F 11-19398	09/06/11	Soil	09/08/11	0.01	7.35
FRP-090611-017 TL08G 11-19399	09/06/11	Soil	09/08/11	0.01	10.71
FRP-090611-018 TL08H 11-19400	09/06/11	Soil	09/08/11	0.01	9.59
FRP-090611-019 TL08I 11-19401	09/06/11	Soil	09/08/11	0.01	10.59
FRP-090611-020 TL08J 11-19402	09/06/11	Soil	09/08/11	0.01	10.59
FRP-090611-021 TL08K 11-19403	09/06/11	Soil	09/08/11	0.01	10.59
FRP-090611-022 TL08L 11-19404	09/06/11	Soil	09/08/11	0.01	8.65

Reported in std units

RL-Analytical reporting limit
U-Undetected at reported detection limit

TL08:00174

REPLICATE RESULTS-CONVENTIONALS
TL08-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 09/09/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: TL08A Client ID: FRP-090611-011					
pH	09/08/11	std units	6.24	6.21	0.03

pH is evaluated as the Absolute Difference between the values rather than Relative Percent Difference

TL08:00175

LAB CONTROL RESULTS-CONVENTIONALS
TL08-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 09/09/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	LCS	Spike Added	Recovery
pH	09/08/11	std units	7.01	7.00	0.01

pH is evaluated as the Absolute Difference between the values rather than Percent Recovery.

Total Solids

ARI Job ID: TL08

Volatiles Total Solids-voats
Data By: Pat Basilio
Created: 9/13/11

Worklist: 5626
Analyst: PAB
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

ARI ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids
1. TL08A 11-19393				% 87.68
2. TL08B 11-19394				% 87.79
3. TL08C 11-19395				% 58.48
4. TL08D 11-19396				% 79.62
5. TL08E 11-19397				% 76.50
6. TL08F 11-19398				% 80.23
7. TL08G 11-19399				% 81.33
8. TL08H 11-19400				% 79.49
9. TL08I 11-19401				% 78.44
10. TL08J 11-19402				% 76.42
11. TL08K 11-19403				% 75.39
12. TL08L 11-19404				% 75.86

* - VOA TS Copied From BETX TS
% - VOA TS Copied From Metals TS
$ - VOA TS Copied From Extraction TS

Solids Data Entry Report Checked by: KM Date: 9/09/11
Date: 09/09/11 Data Analyst: DM

Solids Determination performed on 09/08/11 by MJ

JOB	SAMPLE	CLIENTID	TAREWEIGHT	SAMPDISH	DRYWEIGHT	SOLIDS
TL08	A	FRP-090611-011	1.001	10.257	9.117	87.68
TL08	B	FRP-090611-012	0.999	10.309	9.172	87.79
TL08	C	FRP-090611-013	0.982	10.180	6.361	58.48
TL08	D	FRP-090611-014	1.023	10.341	8.442	79.62
TL08	E	FRP-090611-015	0.988	10.644	8.375	76.50
TL08	F	FRP-090611-016	0.977	10.204	8.380	80.23
TL08	G	FRP-090611-017	0.985	10.753	8.929	81.33
TL08	H	FRP-090611-018	0.957	10.787	8.771	79.49
TL08	I	FRP-090611-019	0.969	10.871	8.736	78.44
TL08	J	FRP-090611-020	1.000	10.354	8.148	76.42
TL08	K	FRP-090611-021	0.971	10.363	8.052	75.39
TL08	L	FRP-090611-022	0.994	10.919	8.523	75.86

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Total Solids Bench Sheet

Laboratory Section Metals

Oven Identification: 07 **Balance ID:** B116132369

Samples in Oven: Date: 09.08.11 Time: 1015 Temp: 105°C Analyst: MJ

Removed from Oven: Date: 9-09-11 Time: 0635 Temp: 100°C Analyst: DM

ARI Sample ID	Tare Weight (g)	Tare + Sample Wet (g)	Tare + Sample Dry (g)	Date & Time Last Weight	Final Weighting >12 hrs[1]
TL08 A	1.001	10.257	9.117	–	✓
" B	0.999	10.309	9.172	–	✓
" C	0.982	10.180	6.361	–	✓
" D	1.023	10.341	8.442	–	✓
" E	0.988	10.644	8.375	–	✓
" F	0.977	10.204	8.380	–	✓
" G	0.985	10.753	8.929	–	✓
" H	0.957	10.787	8.771	–	✓
" I	0.969	10.871	8.736	–	✓
" J	1.000	10.354	8.148	–	✓
" K	0.971	10.363	8.052	–	✓
" L	0.994	10.919	8.523	–	✓

09.08.11 MJ

1) Place a check mark in this column if samples have dried > 12 but < 24 hours. When samples have been at 104°C < 12 hours, constant weight must be verified as described in SOP 10023S. Use a 2nd bench sheet for additional weightings.

TL08 : 00180