Analytical Resources, Incorporated
Analytical Chemists and Consultants

September 20, 2011

AMEC E&E
Received
SEP 22 2011
SEATTLE ORG. 5009

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

RE: Client Project: Former Rhone Poulenc- 8769 Shoreline Investigation
ARI Job Number: TL13

Dear John:

Please find enclosed the final data package for samples for the project referenced above. ARI received ten soil samples 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 TL13

KFB/bc

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

Chain of Custody Documentation

ARI Job ID: TL13

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: TL13 ~~[illegible]~~	Turn-around Requested: STANDARD	Page: 1 of 3	
ARI Client Company: AMEC	Phone: (206) 342-1773	Date: 9/6/11	Ice Present? Y
Client Contact: JOHN LONG / NIK BACHER		No. of Coolers: 1	Cooler Temps: 0.8
Client Project Name: FRP 2011 SHORELINE INVESTIGATION			
Client Project #: 8769	Samplers: TREVOR LOUVIERE, DEVIN O'REILLY, NIK BACHER		

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 EPA 150.1			Notes/Comments
FRP-090611-001	9/6/11	0930	SOIL	4	X	X	X	X					
FRP-090611-002	↓	0935	↓	↓	X	X	X	X					
FRP-090611-003	↓	0940	↓	↓	X	X	X	X					
FRP-090611-004	↓	0945	↓	↓	X	X	X	X					
FRP-090611-005	↓	0950	↓	↓	X	X	X	X					
FRP-090611-006	↓	0955	↓	↓	X	X	X	X					
FRP-090611-007	↓	1000	↓	↓	X	X	X	X					
FRP-090611-008	↓	1005	↓	↓	X	X	X	X					
FRP-090611-009	↓	1110	↓	↓	X	X	X	X					
FRP-090611-010	↓	1115	↓	↓	X	X	X	X					

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
METALS INCLUDE: Al, As, Cd, Cr, Cu, Pb, Ni, Se, Th, V, Zn	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Trevor Louviere	Printed Name: Jennifer Millsap	Printed Name:	Printed Name:
	Company: AMEC GMX	Company: ARI	Company:	Company:
H2O VOAS NOT PRESERVED	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: TL13

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: Box			
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	(NA)	_____	

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

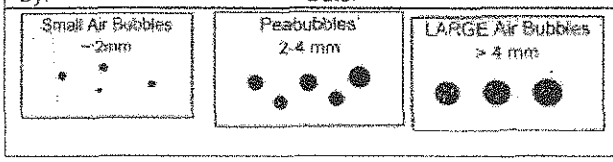
Samples Logged by: AV Date: 9/7/11 Time: 1030

*** 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:

By: Date:



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

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: TL13

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: TL13
Client: Amec Geomatrix Inc.
Project Event: 8769
Project Name: FRP 2011 Shoreline Investigation

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	FRP-090611-001	TL13A	11-19345	Soil	09/06/11 09:30	09/06/11 15:45
2.	FRP-090611-002	TL13B	11-19346	Soil	09/06/11 09:35	09/06/11 15:45
3.	FRP-090611-003	TL13C	11-19347	Soil	09/06/11 09:40	09/06/11 15:45
4.	FRP-090611-004	TL13D	11-19348	Soil	09/06/11 09:45	09/06/11 15:45
5.	FRP-090611-005	TL13E	11-19349	Soil	09/06/11 09:50	09/06/11 15:45
6.	FRP-090611-006	TL13F	11-19350	Soil	09/06/11 09:55	09/06/11 15:45
7.	FRP-090611-007	TL13G	11-19351	Soil	09/06/11 10:00	09/06/11 15:45
8.	FRP-090611-008	TL13H	11-19352	Soil	09/06/11 10:05	09/06/11 15:45
9.	FRP-090611-009	TL13I	11-19353	Soil	09/06/11 11:10	09/06/11 15:45
10.	FRP-090611-010	TL13J	11-19354	Soil	09/06/11 11:15	09/06/11 15:45

Printed 09/07/11

Case Narrative

AMEC/Geomatrix
Client Project: Former Rhone Poulenc- 8769 Shoreline Investigation
ARI Job Number: TL13
September 19, 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 ten soil samples in good condition on 9/06/11. Please see the enclosed Cooler Receipt Form for further details.

Volatiles by 8260C

The samples were analyzed on 9/12/11 - within the method recommended holding time.

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

Continuing calibration: The 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 9/12/11 LCS and LCSD are out of control high for 2-chloroethylvinylether.

Surrogates: All surrogate recoveries were within control limits.

Method Blank (s): The method blank on 9/12/11 contained acetone and 1,2-dichlorobenzene. All associated samples that contain these analytes have been flagged with a "B" qualifier.

Samples: There were no anomalies associated with these samples.

Metals Analysis (6010, 200.8 and 7000 series)

The samples were digested on 9/12/11 - within the method recommended holding time and analyzed on 9/13/11, 9/15/11, and 9/16/11.

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

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

Internal Standards: Internal standard areas were in control.

LCS/LCSD/RPDs: The percent recoveries and 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 percent recovery for chromium was out of control high.

pH by method 9045:

The samples were analyzed on 9/07/11 within method recommended holding time.

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

LCS/LCSD/RPDs: The percent recovery is in control.

Sample duplicate/ RPD(s): The RPDs are in control.

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).

TL13 : 00009

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)**

TL13:00010

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

TL13:00011

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

TL13:00012

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

TL13:00013

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				

TL13:00014

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

TL13:00015

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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

TL13:00016

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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.

TL13:00017

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%

TL13:00018

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%

TL13:00015

Volatile Analysis
Report and Summary QC Forms

ARI Job ID: TL13

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-001**
 SAMPLE

Lab Sample ID: TL13A
LIMS ID: 11-19345
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL13-Amec Geomatrix Inc.
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 13:59

Sample Amount: 5.19 g-dry-wt
Percent Moisture: 5.2%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.25	1.0	< 1.0 U
74-83-9	Bromomethane	0.18	1.0	< 1.0 UJ
75-01-4	Vinyl Chloride	0.23	1.0	< 1.0 U
75-00-3	Chloroethane	0.45	1.0	< 1.0 U
75-09-2	**Methylene Chloride**	**0.61**	**1.9**	**0.8 J**
67-64-1	**Acetone**	**0.46**	**4.8**	**36 B**
75-15-0	**Carbon Disulfide**	**0.54**	**1.0**	**4.6**
75-35-4	1,1-Dichloroethene	0.32	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	0.26	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	0.23	1.0	< 1.0 U
67-66-3	Chloroform	0.23	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	0.18	1.0	< 1.0 U
78-93-3	**2-Butanone**	**0.49**	**4.8**	**4.9**
71-55-6	1,1,1-Trichloroethane	0.22	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	0.21	1.0	< 1.0 U
108-05-4	Vinyl Acetate	0.37	4.8	< 4.8 U
75-27-4	Bromodichloromethane	0.24	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	0.22	1.0	< 1.0 U
79-01-6	Trichloroethene	0.20	1.0	< 1.0 U
124-48-1	Dibromochloromethane	0.26	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	0.28	1.0	< 1.0 U
71-43-2	**Benzene**	**0.29**	**1.0**	**0.9 J**
10061-02-6	trans-1,3-Dichloropropene	0.21	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	0.27	4.8	< 4.8 U
75-25-2	Bromoform	0.29	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.40	4.8	< 4.8 U
591-78-6	2-Hexanone	0.42	4.8	< 4.8 U
127-18-4	Tetrachloroethene	0.25	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	0.24	1.0	< 1.0 U
108-88-3	**Toluene**	**0.15**	**1.0**	**2.0**
108-90-7	Chlorobenzene	0.21	1.0	< 1.0 U
100-41-4	Ethylbenzene	0.19	1.0	< 1.0 U
100-42-5	Styrene	0.13	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	0.26	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.28	1.9	< 1.9 U
179601-23-1	m,p-Xylene	0.38	1.0	< 1.0 U
95-47-6	o-Xylene	0.22	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	0.28	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.22	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.22	1.0	< 1.0 U
107-02-8	Acrolein	3.7	48	< 48 U
74-88-4	Methyl Iodide	0.21	1.0	< 1.0 U
74-96-4	Bromoethane	0.42	1.9	< 1.9 U
107-13-1	Acrylonitrile	0.99	4.8	< 4.8 U
563-58-6	1,1-Dichloropropene	0.30	1.0	< 1.0 U
74-95-3	Dibromomethane	0.14	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	0.22	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	0.56	4.8	< 4.8 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-001**
 SAMPLE

Lab Sample ID: TL13A
LIMS ID: 11-19345
Matrix: Soil
Date Analyzed: 09/12/11 13:59

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.50	1.9	< 1.9 U
110-57-6	trans-1,4-Dichloro-2-butene	0.42	4.8	< 4.8 U
108-67-8	1,3,5-Trimethylbenzene	0.24	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	0.22	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	0.39	4.8	< 4.8 U
106-93-4	Ethylene Dibromide	0.17	1.0	< 1.0 U
74-97-5	Bromochloromethane	0.31	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	0.28	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	0.20	1.0	< 1.0 U
98-82-8	Isopropylbenzene	0.22	1.0	< 1.0 U
103-65-1	n-Propylbenzene	0.26	1.0	< 1.0 U
108-86-1	Bromobenzene	0.15	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	0.29	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	0.27	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	0.29	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	0.23	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	0.23	1.0	< 1.0 U
104-51-8	n-Butylbenzene	0.25	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	0.32	4.8	< 4.8 U
91-20-3	Naphthalene	0.41	4.8	< 4.8 U
87-61-6	1,2,3-Trichlorobenzene	0.29	4.8	< 4.8 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	115%
d8-Toluene	102%
Bromofluorobenzene	89.1%
d4-1,2-Dichlorobenzene	99.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-003**
 SAMPLE

Lab Sample ID: TL13C
LIMS ID: 11-19347
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL13-Amec Geomatrix Inc.
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 14:54

Sample Amount: 4.38 g-dry-wt
Percent Moisture: 9.1%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.30	1.1	< 1.1 U
74-83-9	Bromomethane	0.21	1.1	< 1.1 U J
75-01-4	Vinyl Chloride	0.27	1.1	< 1.1 U
75-00-3	Chloroethane	0.53	1.1	< 1.1 U
75-09-2	**Methylene Chloride**	**0.72**	**2.3**	**0.9 J**
67-64-1	**Acetone**	**0.55**	**5.7**	**66 ~~B~~**
75-15-0	**Carbon Disulfide**	**0.64**	**1.1**	**2.9**
75-35-4	1,1-Dichloroethene	0.38	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	0.27	1.1	< 1.1 U
107-06-2	1,2-Dichloroethane	0.22	1.1	< 1.1 U
78-93-3	**2-Butanone**	**0.59**	**5.7**	**4.8 J**
71-55-6	1,1,1-Trichloroethane	0.26	1.1	< 1.1 U
56-23-5	Carbon Tetrachloride	0.24	1.1	< 1.1 U
108-05-4	Vinyl Acetate	0.43	5.7	< 5.7 U
75-27-4	Bromodichloromethane	0.29	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	0.26	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	0.33	1.1	< 1.1 U
71-43-2	Benzene	0.34	1.1	< 1.1 U
10061-02-6	trans-1,3-Dichloropropene	0.25	1.1	< 1.1 U
110-75-8	2-Chloroethylvinylether	0.32	5.7	< 5.7 U
75-25-2	Bromoform	0.34	1.1	< 1.1 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.48	5.7	< 5.7 U
591-78-6	2-Hexanone	0.50	5.7	< 5.7 U
127-18-4	Tetrachloroethene	0.29	1.1	< 1.1 U
79-34-5	1,1,2,2-Tetrachloroethane	0.29	1.1	< 1.1 U
108-88-3	**Toluene**	**0.17**	**1.1**	**6.9**
108-90-7	Chlorobenzene	0.25	1.1	< 1.1 U
100-41-4	Ethylbenzene	0.23	1.1	< 1.1 U
100-42-5	Styrene	0.16	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	0.33	2.3	< 2.3 U
179601-23-1	m,p-Xylene	0.45	1.1	< 1.1 U
95-47-6	o-Xylene	0.26	1.1	< 1.1 U
95-50-1	1,2-Dichlorobenzene	0.33	1.1	< 1.1 U
541-73-1	1,3-Dichlorobenzene	0.26	1.1	< 1.1 U
106-46-7	1,4-Dichlorobenzene	0.26	1.1	< 1.1 U
107-02-8	Acrolein	4.3	57	< 57 U
74-88-4	Methyl Iodide	0.25	1.1	< 1.1 U
74-96-4	Bromoethane	0.50	2.3	< 2.3 U
107-13-1	Acrylonitrile	1.2	5.7	< 5.7 U
563-58-6	1,1-Dichloropropene	0.36	1.1	< 1.1 U
74-95-3	Dibromomethane	0.17	1.1	< 1.1 U
630-20-6	1,1,1,2-Tetrachloroethane	0.27	1.1	< 1.1 U
96-12-8	1,2-Dibromo-3-chloropropane	0.67	5.7	< 5.7 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-003**
 SAMPLE

Lab Sample ID: TL13C
LIMS ID: 11-19347
Matrix: Soil
Date Analyzed: 09/12/11 14:54

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.59	2.3	< 2.3 U
110-57-6	trans-1,4-Dichloro-2-butene	0.50	5.7	< 5.7 U
108-67-8	1,3,5-Trimethylbenzene	0.29	1.1	< 1.1 U
95-63-6	1,2,4-Trimethylbenzene	0.26	1.1	< 1.1 U
87-68-3	Hexachlorobutadiene	0.47	5.7	< 5.7 U
106-93-4	Ethylene Dibromide	0.20	1.1	< 1.1 U
74-97-5	Bromochloromethane	0.37	1.1	< 1.1 U
594-20-7	2,2-Dichloropropane	0.33	1.1	< 1.1 U
142-28-9	1,3-Dichloropropane	0.24	1.1	< 1.1 U
98-82-8	Isopropylbenzene	0.27	1.1	< 1.1 U
103-65-1	n-Propylbenzene	0.31	1.1	< 1.1 U
108-86-1	Bromobenzene	0.17	1.1	< 1.1 U
95-49-8	2-Chlorotoluene	0.34	1.1	< 1.1 U
106-43-4	4-Chlorotoluene	0.32	1.1	< 1.1 U
98-06-6	tert-Butylbenzene	0.35	1.1	< 1.1 U
135-98-8	sec-Butylbenzene	0.27	1.1	< 1.1 U
99-87-6	4-Isopropyltoluene	0.27	1.1	< 1.1 U
104-51-8	n-Butylbenzene	0.30	1.1	< 1.1 U
120-82-1	1,2,4-Trichlorobenzene	0.38	5.7	< 5.7 U
91-20-3	Naphthalene	0.49	5.7	< 5.7 U
87-61-6	1,2,3-Trichlorobenzene	0.35	5.7	< 5.7 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	111%
d8-Toluene	103%
Bromofluorobenzene	91.2%
d4-1,2-Dichlorobenzene	98.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-002**
 SAMPLE

Lab Sample ID: TL13B
LIMS ID: 11-19346
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL13-Amec Geomatrix Inc.
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 14:27

Sample Amount: 4.21 g-dry-wt
Percent Moisture: 6.5%

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 UJ
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	0.75	2.4	< 2.4 U
67-64-1	**Acetone**	**0.57**	**5.9**	**37 B**
75-15-0	**Carbon Disulfide**	**0.66**	**1.2**	**1.4**
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**	**5.9**	**3.5 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	0.32	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	5.9	< 5.9 U
75-25-2	Bromoform	0.35	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.50	5.9	< 5.9 U
591-78-6	2-Hexanone	0.52	5.9	< 5.9 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**	**0.9 J**
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	59	< 59 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	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	0.28	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.70	5.9	< 5.9 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-002**
 SAMPLE

Lab Sample ID: TL13B
LIMS ID: 11-19346
Matrix: Soil
Date Analyzed: 09/12/11 14:27

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.61	2.4	< 2.4 U
110-57-6	trans-1,4-Dichloro-2-butene	0.52	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	0.49	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	0.35	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	0.39	5.9	< 5.9 U
91-20-3	Naphthalene	0.51	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	113%
d8-Toluene	104%
Bromofluorobenzene	93.2%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-004**
 SAMPLE

Lab Sample ID: TL13D
LIMS ID: 11-19348
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL13-Amec Geomatrix Inc.
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 15:22

Sample Amount: 3.93 g-dry-wt
Percent Moisture: 25.8%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.33	1.3	< 1.3 U
74-83-9	Bromomethane	0.24	1.3	< 1.3 UJ
75-01-4	Vinyl Chloride	0.30	1.3	< 1.3 U
75-00-3	Chloroethane	0.59	1.3	< 1.3 U
75-09-2	Methylene Chloride	0.81	2.5	< 2.5 U
67-64-1	**Acetone**	**0.61**	**6.4**	**56 B**
75-15-0	**Carbon Disulfide**	**0.71**	**1.3**	**4.3**
75-35-4	1,1-Dichloroethene	0.43	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	0.34	1.3	< 1.3 U
156-59-2	cis-1,2-Dichloroethene	0.31	1.3	< 1.3 U
67-66-3	Chloroform	0.30	1.3	< 1.3 U
107-06-2	1,2-Dichloroethane	0.24	1.3	< 1.3 U
78-93-3	**2-Butanone**	**0.65**	**6.4**	**5.0 J**
71-55-6	1,1,1-Trichloroethane	0.29	1.3	< 1.3 U
56-23-5	Carbon Tetrachloride	0.27	1.3	< 1.3 U
108-05-4	Vinyl Acetate	0.48	6.4	< 6.4 U
75-27-4	Bromodichloromethane	0.32	1.3	< 1.3 U
78-87-5	1,2-Dichloropropane	0.21	1.3	< 1.3 U
10061-01-5	cis-1,3-Dichloropropene	0.29	1.3	< 1.3 U
79-01-6	Trichloroethene	0.27	1.3	< 1.3 U
124-48-1	Dibromochloromethane	0.34	1.3	< 1.3 U
79-00-5	1,1,2-Trichloroethane	0.36	1.3	< 1.3 U
71-43-2	Benzene	0.38	1.3	< 1.3 U
10061-02-6	trans-1,3-Dichloropropene	0.27	1.3	< 1.3 U
110-75-8	2-Chloroethylvinylether	0.35	6.4	< 6.4 U
75-25-2	Bromoform	0.38	1.3	< 1.3 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.53	6.4	< 6.4 U
591-78-6	2-Hexanone	0.56	6.4	< 6.4 U
127-18-4	Tetrachloroethene	0.33	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	< 1.3 U
108-90-7	Chlorobenzene	0.28	1.3	< 1.3 U
100-41-4	Ethylbenzene	0.26	1.3	< 1.3 U
100-42-5	Styrene	0.18	1.3	< 1.3 U
75-69-4	Trichlorofluoromethane	0.34	1.3	< 1.3 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.37	2.5	< 2.5 U
179601-23-1	m,p-Xylene	0.50	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	0.30	1.3	< 1.3 U
107-02-8	Acrolein	4.8	64	< 64 U
74-88-4	Methyl Iodide	0.27	1.3	< 1.3 U
74-96-4	Bromoethane	0.56	2.5	< 2.5 U
107-13-1	Acrylonitrile	1.3	6.4	< 6.4 U
563-58-6	1,1-Dichloropropene	0.40	1.3	< 1.3 U
74-95-3	Dibromomethane	0.19	1.3	< 1.3 U
630-20-6	1,1,1,2-Tetrachloroethane	0.30	1.3	< 1.3 U
96-12-8	1,2-Dibromo-3-chloropropane	0.75	6.4	< 6.4 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-004**
 SAMPLE

Lab Sample ID: TL13D
LIMS ID: 11-19348
Matrix: Soil
Date Analyzed: 09/12/11 15:22

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.66	2.5	< 2.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.56	6.4	< 6.4 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	6.4	< 6.4 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	0.27	1.3	< 1.3 U
98-82-8	Isopropylbenzene	0.30	1.3	< 1.3 U
103-65-1	n-Propylbenzene	0.35	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	0.39	1.3	< 1.3 U
135-98-8	sec-Butylbenzene	0.31	1.3	< 1.3 U
99-87-6	**4-Isopropyltoluene**	**0.30**	**1.3**	**0.9 J**
104-51-8	n-Butylbenzene	0.33	1.3	< 1.3 U
120-82-1	1,2,4-Trichlorobenzene	0.42	6.4	< 6.4 U
91-20-3	Naphthalene	0.55	6.4	< 6.4 U
87-61-6	1,2,3-Trichlorobenzene	0.39	6.4	< 6.4 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	113%
d8-Toluene	95.1%
Bromofluorobenzene	82.8%
d4-1,2-Dichlorobenzene	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-005**
 SAMPLE

Lab Sample ID: TL13E
LIMS ID: 11-19349
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL13-Amec Geomatrix Inc.
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 15:49

Sample Amount: 2.99 g-dry-wt
Percent Moisture: 30.7%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.44	1.7	< 1.7 U
74-83-9	Bromomethane	0.31	1.7	< 1.7 UJ
75-01-4	Vinyl Chloride	0.39	1.7	< 1.7 U
75-00-3	Chloroethane	0.77	1.7	< 1.7 U
75-09-2	Methylene Chloride	1.1	3.3	< 3.3 U
67-64-1	**Acetone**	**0.81**	**8.4**	**45 B**
75-15-0	**Carbon Disulfide**	**0.93**	**1.7**	**6.6**
75-35-4	1,1-Dichloroethene	0.56	1.7	< 1.7 U
75-34-3	1,1-Dichloroethane	0.34	1.7	< 1.7 U
156-60-5	trans-1,2-Dichloroethene	0.44	1.7	< 1.7 U
156-59-2	cis-1,2-Dichloroethene	0.40	1.7	< 1.7 U
67-66-3	Chloroform	0.39	1.7	< 1.7 U
107-06-2	1,2-Dichloroethane	0.32	1.7	< 1.7 U
78-93-3	**2-Butanone**	**0.86**	**8.4**	**7.3 J**
71-55-6	1,1,1-Trichloroethane	0.38	1.7	< 1.7 U
56-23-5	Carbon Tetrachloride	0.36	1.7	< 1.7 U
108-05-4	Vinyl Acetate	0.64	8.4	< 8.4 U
75-27-4	Bromodichloromethane	0.42	1.7	< 1.7 U
78-87-5	1,2-Dichloropropane	0.27	1.7	< 1.7 U
10061-01-5	cis-1,3-Dichloropropene	0.38	1.7	< 1.7 U
79-01-6	Trichloroethene	0.35	1.7	< 1.7 U
124-48-1	Dibromochloromethane	0.44	1.7	< 1.7 U
79-00-5	1,1,2-Trichloroethane	0.48	1.7	< 1.7 U
71-43-2	**Benzene**	**0.49**	**1.7**	**1.1 J**
10061-02-6	trans-1,3-Dichloropropene	0.36	1.7	< 1.7 U
110-75-8	2-Chloroethylvinylether	0.46	8.4	< 8.4 U
75-25-2	Bromoform	0.50	1.7	< 1.7 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.70	8.4	< 8.4 U
591-78-6	2-Hexanone	0.73	8.4	< 8.4 U
127-18-4	Tetrachloroethene	0.43	1.7	< 1.7 U
79-34-5	1,1,2,2-Tetrachloroethane	0.42	1.7	< 1.7 U
108-88-3	Toluene	0.25	1.7	< 1.7 U
108-90-7	Chlorobenzene	0.37	1.7	< 1.7 U
100-41-4	Ethylbenzene	0.34	1.7	< 1.7 U
100-42-5	Styrene	0.23	1.7	< 1.7 U
75-69-4	Trichlorofluoromethane	0.44	1.7	< 1.7 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.48	3.3	< 3.3 U
179601-23-1	m,p-Xylene	0.66	1.7	< 1.7 U
95-47-6	o-Xylene	0.37	1.7	< 1.7 U
95-50-1	1,2-Dichlorobenzene	0.49	1.7	< 1.7 U
541-73-1	1,3-Dichlorobenzene	0.38	1.7	< 1.7 U
106-46-7	1,4-Dichlorobenzene	0.39	1.7	< 1.7 U
107-02-8	Acrolein	6.4	84	< 84 U
74-88-4	Methyl Iodide	0.36	1.7	< 1.7 U
74-96-4	Bromoethane	0.74	3.3	< 3.3 U
107-13-1	Acrylonitrile	1.7	8.4	< 8.4 U
563-58-6	1,1-Dichloropropene	0.52	1.7	< 1.7 U
74-95-3	Dibromomethane	0.25	1.7	< 1.7 U
630-20-6	1,1,1,2-Tetrachloroethane	0.39	1.7	< 1.7 U
96-12-8	1,2-Dibromo-3-chloropropane	0.98	8.4	< 8.4 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-005**
 SAMPLE

Lab Sample ID: TL13E
LIMS ID: 11-19349
Matrix: Soil
Date Analyzed: 09/12/11 15:49

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.86	3.3	< 3.3 U
110-57-6	trans-1,4-Dichloro-2-butene	0.73	8.4	< 8.4 U
108-67-8	1,3,5-Trimethylbenzene	0.42	1.7	< 1.7 U
95-63-6	1,2,4-Trimethylbenzene	0.38	1.7	< 1.7 U
87-68-3	Hexachlorobutadiene	0.69	8.4	< 8.4 U
106-93-4	Ethylene Dibromide	0.29	1.7	< 1.7 U
74-97-5	Bromochloromethane	0.54	1.7	< 1.7 U
594-20-7	2,2-Dichloropropane	0.49	1.7	< 1.7 U
142-28-9	1,3-Dichloropropane	0.35	1.7	< 1.7 U
98-82-8	Isopropylbenzene	0.39	1.7	< 1.7 U
103-65-1	n-Propylbenzene	0.45	1.7	< 1.7 U
108-86-1	Bromobenzene	0.26	1.7	< 1.7 U
95-49-8	2-Chlorotoluene	0.50	1.7	< 1.7 U
106-43-4	4-Chlorotoluene	0.46	1.7	< 1.7 U
98-06-6	tert-Butylbenzene	0.51	1.7	< 1.7 U
135-98-8	sec-Butylbenzene	0.40	1.7	< 1.7 U
99-87-6	4-Isopropyltoluene	0.39	1.7	< 1.7 U
104-51-8	n-Butylbenzene	0.44	1.7	< 1.7 U
120-82-1	1,2,4-Trichlorobenzene	0.56	8.4	< 8.4 U
91-20-3	Naphthalene	0.72	8.4	< 8.4 U
87-61-6	1,2,3-Trichlorobenzene	0.51	8.4	< 8.4 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	102%
Bromofluorobenzene	87.0%
d4-1,2-Dichlorobenzene	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-006**
 SAMPLE

Lab Sample ID: TL13F
LIMS ID: 11-19350
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL13-Amec Geomatrix Inc.
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 16:17

Sample Amount: 4.28 g-dry-wt
Percent Moisture: 22.4%

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 UJ
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**	**1.4 J**
67-64-1	**Acetone**	**0.56**	**5.8**	**16 B**
75-15-0	**Carbon Disulfide**	**0.65**	**1.2**	**4.0**
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	< 5.8 U
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-090611-006**
 SAMPLE

Lab Sample ID: TL13F
LIMS ID: 11-19350
Matrix: Soil
Date Analyzed: 09/12/11 16:17

QC Report No: TL13-Amec Geomatrix Inc.
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	111%
d8-Toluene	99.9%
Bromofluorobenzene	93.3%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-007**
 SAMPLE

Lab Sample ID: TL13G
LIMS ID: 11-19351
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL13-Amec Geomatrix Inc.
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 16:44

Sample Amount: 4.07 g-dry-wt
Percent Moisture: 22.4%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.32	1.2	< 1.2 U
74-83-9	Bromomethane	0.23	1.2	< 1.2 UJ
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**	**0.78**	**2.5**	**1.0 J**
67-64-1	**Acetone**	**0.59**	**6.2**	**19**
75-15-0	**Carbon Disulfide**	**0.69**	**1.2**	**7.6**
75-35-4	1,1-Dichloroethene	0.41	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	0.29	1.2	< 1.2 U
67-66-3	Chloroform	0.29	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.23	1.2	< 1.2 U
78-93-3	2-Butanone	0.63	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	0.31	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	0.35	1.2	< 1.2 U
71-43-2	Benzene	0.36	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	0.36	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	0.54	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	0.35	2.5	< 2.5 U
179601-23-1	m,p-Xylene	0.48	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	0.26	1.2	< 1.2 U
74-96-4	Bromoethane	0.54	2.5	< 2.5 U
107-13-1	Acrylonitrile	1.3	6.2	< 6.2 U
563-58-6	1,1-Dichloropropene	0.38	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	0.72	6.2	< 6.2 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-007**
 SAMPLE

Lab Sample ID: TL13G
LIMS ID: 11-19351
Matrix: Soil
Date Analyzed: 09/12/11 16:44

QC Report No: TL13-Amec Geomatrix Inc.
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	0.31	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.28	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.50	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	0.33	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	0.29	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.29	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.32	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	0.37	6.2	< 6.2 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	102%
Bromofluorobenzene	95.9%
d4-1,2-Dichlorobenzene	98.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-008**
 SAMPLE

Lab Sample ID: TL13H
LIMS ID: 11-19352
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL13-Amec Geomatrix Inc.
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 17:12

Sample Amount: 3.94 g-dry-wt
Percent Moisture: 26.7%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.33	1.3	< 1.3 U
74-83-9	Bromomethane	0.24	1.3	< 1.3 U
75-01-4	Vinyl Chloride	0.30	1.3	< 1.3 U
75-00-3	Chloroethane	0.59	1.3	< 1.3 U
75-09-2	Methylene Chloride	0.81	2.5	< 2.5 U
67-64-1	**Acetone**	**0.61**	**6.4**	**19 B**
75-15-0	**Carbon Disulfide**	**0.71**	**1.3**	**2.5**
75-35-4	1,1-Dichloroethene	0.43	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	0.34	1.3	< 1.3 U
156-59-2	cis-1,2-Dichloroethene	0.30	1.3	< 1.3 U
67-66-3	Chloroform	0.30	1.3	< 1.3 U
107-06-2	1,2-Dichloroethane	0.24	1.3	< 1.3 U
78-93-3	2-Butanone	0.65	6.4	< 6.4 U
71-55-6	1,1,1-Trichloroethane	0.29	1.3	< 1.3 U
56-23-5	Carbon Tetrachloride	0.27	1.3	< 1.3 U
108-05-4	Vinyl Acetate	0.48	6.4	< 6.4 U
75-27-4	Bromodichloromethane	0.32	1.3	< 1.3 U
78-87-5	1,2-Dichloropropane	0.21	1.3	< 1.3 U
10061-01-5	cis-1,3-Dichloropropene	0.29	1.3	< 1.3 U
79-01-6	Trichloroethene	0.27	1.3	< 1.3 U
124-48-1	Dibromochloromethane	0.34	1.3	< 1.3 U
79-00-5	1,1,2-Trichloroethane	0.36	1.3	< 1.3 U
71-43-2	Benzene	0.38	1.3	< 1.3 U
10061-02-6	trans-1,3-Dichloropropene	0.27	1.3	< 1.3 U
110-75-8	2-Chloroethylvinylether	0.35	6.4	< 6.4 U
75-25-2	Bromoform	0.38	1.3	< 1.3 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.53	6.4	< 6.4 U
591-78-6	2-Hexanone	0.56	6.4	< 6.4 U
127-18-4	Tetrachloroethene	0.33	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	< 1.3 U
108-90-7	Chlorobenzene	0.28	1.3	< 1.3 U
100-41-4	Ethylbenzene	0.26	1.3	< 1.3 U
100-42-5	Styrene	0.18	1.3	< 1.3 U
75-69-4	Trichlorofluoromethane	0.34	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	0.50	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	64	< 64 U
74-88-4	Methyl Iodide	0.27	1.3	< 1.3 U
74-96-4	Bromoethane	0.56	2.5	< 2.5 U
107-13-1	Acrylonitrile	1.3	6.4	< 6.4 U
563-58-6	1,1-Dichloropropene	0.40	1.3	< 1.3 U
74-95-3	Dibromomethane	0.19	1.3	< 1.3 U
630-20-6	1,1,1,2-Tetrachloroethane	0.30	1.3	< 1.3 U
96-12-8	1,2-Dibromo-3-chloropropane	0.74	6.4	< 6.4 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-008**
 SAMPLE

Lab Sample ID: TL13H
LIMS ID: 11-19352
Matrix: Soil
Date Analyzed: 09/12/11 17:12

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.66	2.5	< 2.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.55	6.4	< 6.4 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	6.4	< 6.4 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	0.27	1.3	< 1.3 U
98-82-8	Isopropylbenzene	0.30	1.3	< 1.3 U
103-65-1	n-Propylbenzene	0.35	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	0.39	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	6.4	< 6.4 U
91-20-3	Naphthalene	0.54	6.4	< 6.4 U
87-61-6	1,2,3-Trichlorobenzene	0.39	6.4	< 6.4 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	99.1%
Bromofluorobenzene	97.7%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-009**
 SAMPLE

Lab Sample ID: TL13I
LIMS ID: 11-19353
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL13-Amec Geomatrix Inc.
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 17:39

Sample Amount: 4.91 g-dry-wt
Percent Moisture: 8.0%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.27	1.0	< 1.0 U
74-83-9	Bromomethane	0.19	1.0	< 1.0 U J
75-01-4	Vinyl Chloride	0.24	1.0	< 1.0 U
75-00-3	Chloroethane	0.47	1.0	< 1.0 U
75-09-2	**Methylene Chloride**	**0.65**	**2.0**	**0.9 J**
67-64-1	**Acetone**	**0.49**	**5.1**	**38 B**
75-15-0	**Carbon Disulfide**	**0.57**	**1.0**	**1.5**
75-35-4	1,1-Dichloroethene	0.34	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	0.27	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	0.24	1.0	< 1.0 U
67-66-3	Chloroform	0.24	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	0.19	1.0	< 1.0 U
78-93-3	**2-Butanone**	**0.52**	**5.1**	**4.7 J**
71-55-6	1,1,1-Trichloroethane	0.23	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	0.22	1.0	< 1.0 U
108-05-4	Vinyl Acetate	0.39	5.1	< 5.1 U
75-27-4	Bromodichloromethane	0.26	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	0.22	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**	**0.9 J**
10061-02-6	trans-1,3-Dichloropropene	0.22	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	0.28	5.1	< 5.1 U
75-25-2	Bromoform	0.30	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.43	5.1	< 5.1 U
591-78-6	2-Hexanone	0.45	5.1	< 5.1 U
127-18-4	Tetrachloroethene	0.26	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	0.26	1.0	< 1.0 U
108-88-3	**Toluene**	**0.15**	**1.0**	**1.9**
108-90-7	Chlorobenzene	0.22	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	0.27	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	0.40	1.0	< 1.0 U
95-47-6	o-Xylene	0.23	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	0.30	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.23	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.24	1.0	< 1.0 U
107-02-8	Acrolein	3.9	51	< 51 U
74-88-4	Methyl Iodide	0.22	1.0	< 1.0 U
74-96-4	Bromoethane	0.45	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	5.1	< 5.1 U
563-58-6	1,1-Dichloropropene	0.32	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	0.60	5.1	< 5.1 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-009**
 SAMPLE

Lab Sample ID: TL13I
LIMS ID: 11-19353
Matrix: Soil
Date Analyzed: 09/12/11 17:39

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.53	2.0	< 2.0 U
110-57-6	trans-1,4-Dichloro-2-butene	0.45	5.1	< 5.1 U
108-67-8	1,3,5-Trimethylbenzene	0.26	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	0.23	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	0.42	5.1	< 5.1 U
106-93-4	Ethylene Dibromide	0.18	1.0	< 1.0 U
74-97-5	Bromochloromethane	0.33	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	0.30	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	0.21	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	0.28	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	0.27	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	0.34	5.1	< 5.1 U
91-20-3	Naphthalene	0.44	5.1	< 5.1 U
87-61-6	1,2,3-Trichlorobenzene	0.31	5.1	< 5.1 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	99.3%
Bromofluorobenzene	91.3%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-010**
 SAMPLE

Lab Sample ID: TL13J
LIMS ID: 11-19354
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL13-Amec Geomatrix Inc.
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 18:07

Sample Amount: 3.81 g-dry-wt
Percent Moisture: 7.9%

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 UJ
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**	**0.83**	**2.6**	**2.1 J**
67-64-1	**Acetone**	**0.63**	**6.6**	**14 B**
75-15-0	Carbon Disulfide	0.73	1.3	< 1.3 U
75-35-4	1,1-Dichloroethene	0.44	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	0.31	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	0.67	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	0.50	6.6	< 6.6 U
75-27-4	Bromodichloromethane	0.33	1.3	< 1.3 U
78-87-5	1,2-Dichloropropane	0.21	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	0.28	1.3	< 1.3 U
110-75-8	2-Chloroethylvinylether	0.36	6.6	< 6.6 U
75-25-2	Bromoform	0.39	1.3	< 1.3 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.55	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	0.33	1.3	< 1.3 U
108-88-3	**Toluene**	**0.20**	**1.3**	**0.8 J**
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	2.6	< 2.6 U
179601-23-1	m,p-Xylene	0.51	1.3	< 1.3 U
95-47-6	o-Xylene	0.29	1.3	< 1.3 U
95-50-1	1,2-Dichlorobenzene	0.38	1.3	< 1.3 U
541-73-1	1,3-Dichlorobenzene	0.30	1.3	< 1.3 U
106-46-7	1,4-Dichlorobenzene	0.30	1.3	< 1.3 U
107-02-8	Acrolein	5.0	66	< 66 U
74-88-4	Methyl Iodide	0.28	1.3	< 1.3 U
74-96-4	Bromoethane	0.58	2.6	< 2.6 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	0.19	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	0.77	6.6	< 6.6 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-090611-010**
 SAMPLE

Lab Sample ID: TL13J
LIMS ID: 11-19354
Matrix: Soil
Date Analyzed: 09/12/11 18:07

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.68	2.6	< 2.6 U
110-57-6	trans-1,4-Dichloro-2-butene	0.57	6.6	< 6.6 U
108-67-8	1,3,5-Trimethylbenzene	0.33	1.3	< 1.3 U
95-63-6	1,2,4-Trimethylbenzene	0.30	1.3	< 1.3 U
87-68-3	Hexachlorobutadiene	0.54	6.6	< 6.6 U
106-93-4	Ethylene Dibromide	0.23	1.3	< 1.3 U
74-97-5	Bromochloromethane	0.42	1.3	< 1.3 U
594-20-7	2,2-Dichloropropane	0.38	1.3	< 1.3 U
142-28-9	1,3-Dichloropropane	0.27	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	0.39	1.3	< 1.3 U
106-43-4	4-Chlorotoluene	0.36	1.3	< 1.3 U
98-06-6	tert-Butylbenzene	0.40	1.3	< 1.3 U
135-98-8	sec-Butylbenzene	0.31	1.3	< 1.3 U
99-87-6	4-Isopropyltoluene	0.31	1.3	< 1.3 U
104-51-8	n-Butylbenzene	0.34	1.3	< 1.3 U
120-82-1	1,2,4-Trichlorobenzene	0.44	6.6	< 6.6 U
91-20-3	Naphthalene	0.56	6.6	< 6.6 U
87-61-6	1,2,3-Trichlorobenzene	0.40	6.6	< 6.6 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	114%
d8-Toluene	101%
Bromofluorobenzene	94.8%
d4-1,2-Dichlorobenzene	100%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation
8769

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
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
TL13A	FRP-090611-001	Low	115%	102%	89.1%	99.6%	0
TL13B	FRP-090611-002	Low	113%	104%	93.2%	102%	0
TL13C	FRP-090611-003	Low	111%	103%	91.2%	98.5%	0
TL13D	FRP-090611-004	Low	113%	95.1%	82.8%	100%	0
TL13E	FRP-090611-005	Low	112%	102%	87.0%	100%	0
TL13F	FRP-090611-006	Low	111%	99.9%	93.3%	101%	0
TL13G	FRP-090611-007	Low	108%	102%	95.9%	98.9%	0
TL13H	FRP-090611-008	Low	112%	99.1%	97.7%	102%	0
TL13I	FRP-090611-009	Low	110%	99.3%	91.3%	102%	0
TL13J	FRP-090611-010	Low	114%	101%	94.8%	100%	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: 11-19345 to 11-19354

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: 11-19345
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL13-Amec Geomatrix Inc.
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: 11-19345
Matrix: Soil

QC Report No: TL13-Amec Geomatrix Inc.
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.

MB0912

Lab Name: ANALYTICAL RESOURCES INC

Client: AMEC GEOMATRIX

ARI Job No: TL13

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	TL13A	TL13A	1359
04	FRP-090611-0	TL13B	TL13B	1427
05	FRP-090611-0	TL13C	TL13C	1454
06	FRP-090611-0	TL13D	TL13D	1522
07	FRP-090611-0	TL13E	TL13E	1549
08	FRP-090611-0	TL13F	TL13F	1617
09	FRP-090611-0	TL13G	TL13G	1644
10	FRP-090611-0	TL13H	TL13H	1712
11	FRP-090611-0	TL13I	TL13I	1739
12	FRP-090611-0	TL13J	TL13J	1807
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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: 11-19345
Matrix: Soil
Data Release Authorized:
Reported: 09/14/11

QC Report No: TL13-Amec Geomatrix Inc.
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**	**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-091211**
 METHOD BLANK

Lab Sample ID: MB-091211
LIMS ID: 11-19345
Matrix: Soil
Date Analyzed: 09/12/11 09:41

QC Report No: TL13-Amec Geomatrix Inc.
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.: TL13

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
09					
10					
11					
12					
13					
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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 SHORELINE INVESTIGATION SDG No.: TL13

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-090611-001	TL13A	TL13A	09/12/11	1359
06	FRP-090611-002	TL13B	TL13B	09/12/11	1427
07	FRP-090611-003	TL13C	TL13C	09/12/11	1454
08	FRP-090611-004	TL13D	TL13D	09/12/11	1522
09	FRP-090611-005	TL13E	TL13E	09/12/11	1549
10	FRP-090611-006	TL13F	TL13F	09/12/11	1617
11	FRP-090611-007	TL13G	TL13G	09/12/11	1644
12	FRP-090611-008	TL13H	TL13H	09/12/11	1712
13	FRP-090611-009	TL13I	TL13I	09/12/11	1739
14	FRP-090611-010	TL13J	TL13J	09/12/11	1807
15					
16					
17					
18					
19					
20					
21					
22					

FORM V VOA OLM3.2M

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TL13 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: TL13 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: TL13 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: TL13 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: TL13 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: TL13 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: TL13 — 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: TL13 — 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: TL13 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: TL13 — 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: TL13 — 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

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL13 — 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

TL13:00060

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TL13 — 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	115975	6.43	171528	7.44	149825	10.58
05	FRP-090611-0	115015	6.44	171789	7.45	158260	10.58
06	FRP-090611-0	115437	6.43	170059	7.44	154362	10.57
07	FRP-090611-0	104885	6.43	158452	7.44	119489	10.58
08	FRP-090611-0	113728	6.44	167887	7.45	143619	10.58
09	FRP-090611-0	115087	6.43	170741	7.44	156024	10.58
10	FRP-090611-0	112834	6.43	169222	7.44	152823	10.58
11	FRP-090611-0	110636	6.42	165838	7.43	148265	10.57
12	FRP-090611-0	121544	6.44	177093	7.44	151216	10.58
13	FRP-090611-0	107388	6.44	161851	7.45	148763	10.59
14							
15							
16							
17							
18							
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: TL13 — 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	61487	13.26				
05	FRP-090611-0	75376	13.27				
06	FRP-090611-0	66094	13.26				
07	FRP-090611-0	39046	13.26				
08	FRP-090611-0	57309	13.27				
09	FRP-090611-0	75698	13.26				
10	FRP-090611-0	77976	13.27				
11	FRP-090611-0	76649	13.25				
12	FRP-090611-0	64538	13.27				
13	FRP-090611-0	73427	13.27				
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.

Metals Analysis
Report and Summary QC Forms

ARI Job ID: TL13

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

SDG: TL13

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
FRP-090611-001	TL13A	11-19345	
FRP-090611-001D	TL13ADUP	11-19345	
FRP-090611-001S	TL13ASPK	11-19345	
FRP-090611-002	TL13B	11-19346	
PBS	TL13MB1	11-19346	
LCSS	TL13MB1SPK	11-19346	
FRP-090611-003	TL13C	11-19347	
FRP-090611-004	TL13D	11-19348	
FRP-090611-005	TL13E	11-19349	
FRP-090611-006	TL13F	11-19350	
FRP-090611-007	TL13G	11-19351	
FRP-090611-008	TL13H	11-19352	
FRP-090611-009	TL13I	11-19353	
FRP-090611-010	TL13J	11-19354	

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: 9/19/11 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-001
SAMPLE

Lab Sample ID: TL13A
LIMS ID: 11-19345
Matrix: Soil
Data Release Authorized:
Reported: 09/19/11

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 94.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/12/11	6010B	09/13/11	**7429-90-5**	**Aluminum**	3.6	5	**15,900**	
3050B	09/12/11	200.8	09/15/11	**7440-38-2**	**Arsenic**	0.087	0.2	**5.4**	
3050B	09/12/11	6010B	09/13/11	**7440-43-9**	**Cadmium**	0.11	0.2	**0.2**	
3050B	09/12/11	6010B	09/13/11	**7440-47-3**	**Chromium**	0.28	0.5	**25.5** J	
3050B	09/12/11	6010B	09/13/11	**7440-50-8**	**Copper**	0.051	0.2	**99.4**	
3050B	09/12/11	6010B	09/13/11	**7439-92-1**	**Lead**	0.13	2	**10**	
CLP	09/12/11	7471A	09/16/11	**7439-97-6**	**Mercury**	0.0011	0.02	**0.10**	
3050B	09/12/11	6010B	09/13/11	**7440-02-0**	**Nickel**	0.31	1	**21**	
3050B	09/12/11	6010B	09/13/11	7782-49-2	Selenium	0.66	5	5	U
3050B	09/12/11	6010B	09/13/11	7440-28-0	Thallium	0.54	5	5	U
3050B	09/12/11	6010B	09/13/11	**7440-62-2**	**Vanadium**	0.061	0.3	**49.7**	
3050B	09/12/11	6010B	09/13/11	**7440-66-6**	**Zinc**	0.12	1	**46**	

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-090611-002
SAMPLE

Lab Sample ID: TL13B
LIMS ID: 11-19346
Matrix: Soil
Data Release Authorized:
Reported: 09/19/11

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 93.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/12/11	6010B	09/13/11	**7429-90-5**	**Aluminum**	3.5	5	**9,360**	
3050B	09/12/11	200.8	09/15/11	**7440-38-2**	**Arsenic**	0.087	0.2	**2.4**	
3050B	09/12/11	6010B	09/13/11	7440-43-9	Cadmium	0.11	0.2	0.2	U
3050B	09/12/11	6010B	09/13/11	**7440-47-3**	**Chromium**	0.27	0.5	**11.9**	J
3050B	09/12/11	6010B	09/13/11	**7440-50-8**	**Copper**	0.050	0.2	**31.6**	
3050B	09/12/11	6010B	09/13/11	**7439-92-1**	**Lead**	0.13	2	**5**	
CLP	09/12/11	7471A	09/16/11	**7439-97-6**	**Mercury**	0.0013	0.03	**0.04**	
3050B	09/12/11	6010B	09/13/11	**7440-02-0**	**Nickel**	0.30	1	**9**	
3050B	09/12/11	6010B	09/13/11	7782-49-2	Selenium	0.65	5	5	U
3050B	09/12/11	6010B	09/13/11	7440-28-0	Thallium	0.53	5	5	U
3050B	09/12/11	6010B	09/13/11	**7440-62-2**	**Vanadium**	0.060	0.3	**40.0**	
3050B	09/12/11	6010B	09/13/11	**7440-66-6**	**Zinc**	0.12	1	**34**	

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

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-003
SAMPLE

Lab Sample ID: TL13C
LIMS ID: 11-19347
Matrix: Soil
Data Release Authorized:
Reported: 09/19/11

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 91.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/12/11	6010B	09/13/11	**7429-90-5**	**Aluminum**	3.7	5	**8,920**	
3050B	09/12/11	200.8	09/15/11	**7440-38-2**	**Arsenic**	0.090	0.2	**3.4**	
3050B	09/12/11	6010B	09/13/11	**7440-43-9**	**Cadmium**	0.11	0.2	**0.2**	
3050B	09/12/11	6010B	09/13/11	**7440-47-3**	**Chromium**	0.28	0.5	**13.2**	J
3050B	09/12/11	6010B	09/13/11	**7440-50-8**	**Copper**	0.052	0.2	**59.4**	
3050B	09/12/11	6010B	09/13/11	**7439-92-1**	**Lead**	0.13	2	**7**	
CLP	09/12/11	7471A	09/16/11	**7439-97-6**	**Mercury**	0.0012	0.02	**0.13**	
3050B	09/12/11	6010B	09/13/11	**7440-02-0**	**Nickel**	0.31	1	**13**	
3050B	09/12/11	6010B	09/13/11	7782-49-2	Selenium	0.67	5	5	U
3050B	09/12/11	6010B	09/13/11	7440-28-0	Thallium	0.55	5	5	U
3050B	09/12/11	6010B	09/13/11	**7440-62-2**	**Vanadium**	0.062	0.3	**32.7**	
3050B	09/12/11	6010B	09/13/11	**7440-66-6**	**Zinc**	0.12	1	**43**	

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-090611-004
SAMPLE

Lab Sample ID: TL13D
LIMS ID: 11-19348
Matrix: Soil
Data Release Authorized:
Reported: 09/19/11

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 74.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/12/11	6010B	09/13/11	**7429-90-5**	**Aluminum**	4.5	6	**11,000**	
3050B	09/12/11	200.8	09/15/11	**7440-38-2**	**Arsenic**	0.11	0.3	**9.0**	
3050B	09/12/11	6010B	09/13/11	**7440-43-9**	**Cadmium**	0.14	0.3	**0.3**	
3050B	09/12/11	6010B	09/13/11	**7440-47-3**	**Chromium**	0.34	0.6	**15.5** J	
3050B	09/12/11	6010B	09/13/11	**7440-50-8**	**Copper**	0.063	0.3	**26.6**	
3050B	09/12/11	6010B	09/13/11	**7439-92-1**	**Lead**	0.16	3	**10**	
CLP	09/12/11	7471A	09/16/11	**7439-97-6**	**Mercury**	0.0012	0.02	**0.11**	
3050B	09/12/11	6010B	09/13/11	**7440-02-0**	**Nickel**	0.38	1	**12**	
3050B	09/12/11	6010B	09/13/11	7782-49-2	Selenium	0.82	6	6	U
3050B	09/12/11	6010B	09/13/11	7440-28-0	Thallium	0.67	6	6	U
3050B	09/12/11	6010B	09/13/11	**7440-62-2**	**Vanadium**	0.076	0.4	**42.0**	
3050B	09/12/11	6010B	09/13/11	**7440-66-6**	**Zinc**	0.15	1	**44**	

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-090611-005
SAMPLE

Lab Sample ID: TL13E
LIMS ID: 11-19349
Matrix: Soil
Data Release Authorized:
Reported: 09/19/11

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 69.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/12/11	6010B	09/13/11	**7429-90-5**	**Aluminum**	4.9	7	**17,800**	
3050B	09/12/11	200.8	09/15/11	**7440-38-2**	**Arsenic**	0.12	0.3	**5.3**	
3050B	09/12/11	6010B	09/13/11	**7440-43-9**	**Cadmium**	0.15	0.3	**0.3**	
3050B	09/12/11	6010B	09/13/11	**7440-47-3**	**Chromium**	0.37	0.7	**22.3**	J
3050B	09/12/11	6010B	09/13/11	**7440-50-8**	**Copper**	0.069	0.3	**63.1**	
3050B	09/12/11	6010B	09/13/11	**7439-92-1**	**Lead**	0.18	3	**5**	
CLP	09/12/11	7471A	09/16/11	**7439-97-6**	**Mercury**	0.0016	0.03	**0.09**	
3050B	09/12/11	6010B	09/13/11	**7440-02-0**	**Nickel**	0.41	1	**18**	
3050B	09/12/11	6010B	09/13/11	7782-49-2	Selenium	0.90	7	7	U
3050B	09/12/11	6010B	09/13/11	7440-28-0	Thallium	0.73	7	7	U
3050B	09/12/11	6010B	09/13/11	**7440-62-2**	**Vanadium**	0.083	0.4	**66.3**	
3050B	09/12/11	6010B	09/13/11	**7440-66-6**	**Zinc**	0.17	1	**49**	

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

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-006
SAMPLE

Lab Sample ID: TL13F
LIMS ID: 11-19350
Matrix: Soil
Data Release Authorized:
Reported: 09/19/11

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 77.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/12/11	6010B	09/13/11	**7429-90-5**	**Aluminum**	4.6	6	**8,770**	
3050B	09/12/11	200.8	09/15/11	**7440-38-2**	**Arsenic**	0.11	0.3	**3.5**	
3050B	09/12/11	6010B	09/13/11	7440-43-9	Cadmium	0.14	0.3	0.3	U
3050B	09/12/11	6010B	09/13/11	**7440-47-3**	**Chromium**	0.35	0.6	**18.0**	J
3050B	09/12/11	6010B	09/13/11	**7440-50-8**	**Copper**	0.064	0.3	**26.5**	
3050B	09/12/11	6010B	09/13/11	**7439-92-1**	**Lead**	0.17	3	**54**	
CLP	09/12/11	7471A	09/16/11	7439-97-6	Mercury	0.0015	0.03	0.03	U
3050B	09/12/11	6010B	09/13/11	**7440-02-0**	**Nickel**	0.39	1	**13**	
3050B	09/12/11	6010B	09/13/11	7782-49-2	Selenium	0.84	6	6	U
3050B	09/12/11	6010B	09/13/11	7440-28-0	Thallium	0.68	6	6	U
3050B	09/12/11	6010B	09/13/11	**7440-62-2**	**Vanadium**	0.077	0.4	**43.8**	
3050B	09/12/11	6010B	09/13/11	**7440-66-6**	**Zinc**	0.15	1	**53**	

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-090611-007
SAMPLE

Lab Sample ID: TL13G
LIMS ID: 11-19351
Matrix: Soil
Data Release Authorized:
Reported: 09/19/11

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 77.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/12/11	6010B	09/13/11	**7429-90-5**	**Aluminum**	4.4	6	**8,060**	
3050B	09/12/11	200.8	09/15/11	**7440-38-2**	**Arsenic**	0.10	0.2	**1.0**	
3050B	09/12/11	6010B	09/13/11	7440-43-9	Cadmium	0.14	0.2	0.2	U
3050B	09/12/11	6010B	09/13/11	**7440-47-3**	**Chromium**	0.33	0.6	**11.2**	J
3050B	09/12/11	6010B	09/13/11	**7440-50-8**	**Copper**	0.062	0.2	**10.5**	
3050B	09/12/11	6010B	09/13/11	7439-92-1	Lead	0.16	2	2	U
CLP	09/12/11	7471A	09/16/11	7439-97-6	Mercury	0.0016	0.03	0.03	U
3050B	09/12/11	6010B	09/13/11	**7440-02-0**	**Nickel**	0.37	1	**8**	
3050B	09/12/11	6010B	09/13/11	7782-49-2	Selenium	0.80	6	6	U
3050B	09/12/11	6010B	09/13/11	7440-28-0	Thallium	0.65	6	6	U
3050B	09/12/11	6010B	09/13/11	**7440-62-2**	**Vanadium**	0.074	0.4	**43.2**	
3050B	09/12/11	6010B	09/13/11	**7440-66-6**	**Zinc**	0.15	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-090611-008
SAMPLE

Lab Sample ID: TL13H
LIMS ID: 11-19352
Matrix: Soil
Data Release Authorized:
Reported: 09/19/11

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 73.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/12/11	6010B	09/13/11	**7429-90-5**	**Aluminum**	4.6	6	**8,090**	
3050B	09/12/11	200.8	09/15/11	**7440-38-2**	**Arsenic**	0.11	0.3	**1.6**	
3050B	09/12/11	6010B	09/13/11	7440-43-9	Cadmium	0.14	0.3	0.3	U
3050B	09/12/11	6010B	09/13/11	**7440-47-3**	**Chromium**	0.35	0.6	**10.2**	J
3050B	09/12/11	6010B	09/13/11	**7440-50-8**	**Copper**	0.064	0.3	**10.6**	
3050B	09/12/11	6010B	09/13/11	7439-92-1	Lead	0.17	3	3	U
CLP	09/12/11	7471A	09/16/11	7439-97-6	Mercury	0.0014	0.03	0.03	U
3050B	09/12/11	6010B	09/13/11	**7440-02-0**	**Nickel**	0.39	1	**7**	
3050B	09/12/11	6010B	09/13/11	7782-49-2	Selenium	0.84	6	6	U
3050B	09/12/11	6010B	09/13/11	7440-28-0	Thallium	0.68	6	6	U
3050B	09/12/11	6010B	09/13/11	**7440-62-2**	**Vanadium**	0.077	0.4	**38.5**	
3050B	09/12/11	6010B	09/13/11	**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-090611-009
SAMPLE

Lab Sample ID: TL13I
LIMS ID: 11-19353
Matrix: Soil
Data Release Authorized:
Reported: 09/19/11

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 92.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/12/11	6010B	09/13/11	**7429-90-5**	**Aluminum**	3.8	5	**11,500**	
3050B	09/12/11	200.8	09/15/11	**7440-38-2**	**Arsenic**	0.092	0.2	**4.2**	
3050B	09/12/11	6010B	09/13/11	**7440-43-9**	**Cadmium**	0.12	0.2	**0.3**	
3050B	09/12/11	6010B	09/13/11	**7440-47-3**	**Chromium**	0.29	0.5	**17.3**	J
3050B	09/12/11	6010B	09/13/11	**7440-50-8**	**Copper**	0.053	0.2	**93.9**	
3050B	09/12/11	6010B	09/13/11	**7439-92-1**	**Lead**	0.14	2	**14**	
CLP	09/12/11	7471A	09/16/11	**7439-97-6**	**Mercury**	0.0013	0.03	**1.96**	
3050B	09/12/11	6010B	09/13/11	**7440-02-0**	**Nickel**	0.32	1	**17**	
3050B	09/12/11	6010B	09/13/11	7782-49-2	Selenium	0.69	5	5	U
3050B	09/12/11	6010B	09/13/11	7440-28-0	Thallium	0.56	5	5	U
3050B	09/12/11	6010B	09/13/11	**7440-62-2**	**Vanadium**	0.064	0.3	**44.8**	
3050B	09/12/11	6010B	09/13/11	**7440-66-6**	**Zinc**	0.13	1	**68**	

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

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-090611-010
SAMPLE

Lab Sample ID: TL13J
LIMS ID: 11-19354
Matrix: Soil
Data Release Authorized:
Reported: 09/19/11

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/06/11
Date Received: 09/06/11

Percent Total Solids: 92.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/12/11	6010B	09/13/11	**7429-90-5**	**Aluminum**	3.5	5	**8,960**	
3050B	09/12/11	200.8	09/15/11	**7440-38-2**	**Arsenic**	0.092	0.2	**2.0**	
3050B	09/12/11	6010B	09/13/11	7440-43-9	Cadmium	0.11	0.2	0.2	U
3050B	09/12/11	6010B	09/13/11	**7440-47-3**	**Chromium**	0.27	0.5	**11.9**	J
3050B	09/12/11	6010B	09/13/11	**7440-50-8**	**Copper**	0.050	0.2	**107**	
3050B	09/12/11	6010B	09/13/11	**7439-92-1**	**Lead**	0.13	2	**9**	
CLP	09/12/11	7471A	09/16/11	**7439-97-6**	**Mercury**	0.0011	0.02	**0.48**	
3050B	09/12/11	6010B	09/13/11	**7440-02-0**	**Nickel**	0.30	1	**10**	
3050B	09/12/11	6010B	09/13/11	7782-49-2	Selenium	0.64	5	5	U
3050B	09/12/11	6010B	09/13/11	7440-28-0	Thallium	0.52	5	5	U
3050B	09/12/11	6010B	09/13/11	**7440-62-2**	**Vanadium**	0.059	0.3	**35.6**	
3050B	09/12/11	6010B	09/13/11	**7440-66-6**	**Zinc**	0.12	1	**37**	

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-090611-001
MATRIX SPIKE

Lab Sample ID: TL13A
LIMS ID: 11-19345
Matrix: Soil
Data Release Authorized:
Reported: 09/19/11

QC Report No: TL13-Amec Geomatrix Inc.
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	15,900	15,100	203	-394%	H
Arsenic	200.8	5.4	30.4	25.0	100%	
Cadmium	6010B	0.2	52.5	50.7	103%	
Chromium	6010B	25.5	93.7	50.7	135%	N
Copper	6010B	99.4	141	50.7	82.1%	
Lead	6010B	10	204	203	95.6%	
Mercury	7471A	0.10	0.30	0.215	93.0%	
Nickel	6010B	21	73	50.7	103%	
Selenium	6010B	5 U	197	203	97.0%	
Thallium	6010B	5 U	191	203	94.1%	
Vanadium	6010B	49.7	96.2	50.7	91.7%	
Zinc	6010B	46	96	50.7	98.6%	

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-090611-001
DUPLICATE

Lab Sample ID: TL13A
LIMS ID: 11-19345
Matrix: Soil
Data Release Authorized:
Reported: 09/19/11

QC Report No: TL13-Amec Geomatrix Inc.
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	15,900	14,500	9.2%	+/- 20%	
Arsenic	200.8	5.4	5.4	0.0%	+/- 20%	
Cadmium	6010B	0.2	0.2	0.0%	+/- 0.2	L
Chromium	6010B	25.5	29.0	12.8%	+/- 20%	
Copper	6010B	99.4	91.9	7.8%	+/- 20%	
Lead	6010B	10	9	10.5%	+/- 2	L
Mercury	7471A	0.10	0.10	0.0%	+/- 0.02	L
Nickel	6010B	21	20	4.9%	+/- 20%	
Selenium	6010B	5 U	5 U	0.0%	+/- 5	L
Thallium	6010B	5 U	5 U	0.0%	+/- 5	L
Vanadium	6010B	49.7	45.4	9.0%	+/- 20%	
Zinc	6010B	46	44	4.4%	+/- 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: TL13LCS
LIMS ID: 11-19346
Matrix: Soil
Data Release Authorized:
Reported: 09/19/11

QC Report No: TL13-Amec Geomatrix Inc.
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	203	200	102%	
Arsenic	200.8	26.3	25.0	105%	
Cadmium	6010B	51.0	50.0	102%	
Chromium	6010B	51.4	50.0	103%	
Copper	6010B	47.7	50.0	95.4%	
Lead	6010B	198	200	99.0%	
Mercury	7471A	0.49	0.50	98.0%	
Nickel	6010B	50	50	100%	
Selenium	6010B	198	200	99.0%	
Thallium	6010B	200	200	100%	
Vanadium	6010B	50.7	50.0	101%	
Zinc	6010B	50	50	100%	

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: TL13MB
LIMS ID: 11-19346
Matrix: Soil
Data Release Authorized:
Reported: 09/19/11

QC Report No: TL13-Amec Geomatrix Inc.
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	09/12/11	6010B	09/13/11	7429-90-5	Aluminum	3.6	5	5	U
3050B	09/12/11	200.8	09/15/11	7440-38-2	Arsenic	0.087	0.2	0.2	U
3050B	09/12/11	6010B	09/13/11	7440-43-9	Cadmium	0.11	0.2	0.2	U
3050B	09/12/11	6010B	09/13/11	7440-47-3	Chromium	0.27	0.5	0.5	U
3050B	09/12/11	6010B	09/13/11	7440-50-8	Copper	0.050	0.2	0.2	U
3050B	09/12/11	6010B	09/13/11	7439-92-1	Lead	0.13	2	2	U
CLP	09/12/11	7471A	09/16/11	7439-97-6	Mercury	0.0013	0.02	0.02	U
3050B	09/12/11	6010B	09/13/11	7440-02-0	Nickel	0.30	1	1	U
3050B	09/12/11	6010B	09/13/11	7782-49-2	Selenium	0.65	5	5	U
3050B	09/12/11	6010B	09/13/11	7440-28-0	Thallium	0.53	5	5	U
3050B	09/12/11	6010B	09/13/11	7440-62-2	Vanadium	0.060	0.3	0.3	U
3050B	09/12/11	6010B	09/13/11	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 Inc.

PROJECT: FRP 2011 Shoreline I

SDG: TL13

UNITS: ug/L

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Aluminum	AL	ICP	IP091371	2000.0	2010.08	100.5	2000.0	1995.08	99.8	1981.87	99.1	2021.61	101.1	1996.91	99.8	1979.43	99.0
Arsenic	AS	PMS	MS091581	50.0	50.65	101.3	50.0	48.05	96.1	47.92	95.8	48.94	97.9	49.28	98.6	49.01	98.0
Cadmium	CD	ICP	IP091371	1000.0	1059.33	105.9	1000.0	1053.48	105.3	1029.39	102.9	1054.10	105.4	1039.94	104.0	1042.63	104.3
Chromium	CR	ICP	IP091371	1000.0	1030.75	103.1	1000.0	1027.56	102.8	1014.33	101.4	1040.51	104.1	1022.86	102.3	1011.98	101.2
Copper	CU	ICP	IP091371	1000.0	1012.33	101.2	1000.0	1006.13	100.6	990.11	99.0	1021.35	102.1	1010.53	101.1	1004.83	100.5
Lead	PB	ICP	IP091371	2000.0	2013.75	100.7	2000.0	1994.50	99.7	1980.63	99.0	2006.57	100.3	1985.80	99.3	1995.48	99.8
Mercury	HG	CVA	HG091601	8.0	8.13	101.6	4.0	4.10	102.5	4.16	104.0	4.11	102.8	4.08	102.0	4.03	100.8
Nickel	NI	ICP	IP091371	1000.0	1028.43	102.8	1000.0	1026.49	102.6	1008.36	100.8	1025.15	102.5	1017.81	101.8	1003.83	100.4
Selenium	SE	ICP	IP091371	2000.0	2037.96	101.9	2000.0	2017.67	100.9	2012.80	100.6	2032.49	101.6	2000.53	100.0	2014.62	100.7
Thallium	TL	ICP	IP091371	2000.0	2002.74	100.1	2000.0	1982.91	99.1	1957.46	97.9	1992.32	99.6	1968.11	98.4	1978.87	98.9
Vanadium	V	ICP	IP091371	1000.0	1002.02	100.2	1000.0	998.74	99.9	988.24	98.8	1012.07	101.2	999.03	99.9	997.50	99.8
Zinc	ZN	ICP	IP091371	1000.0	1012.55	101.3	1000.0	1011.04	101.1	1002.83	100.3	1021.90	102.2	1009.03	100.9	996.22	99.6

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

FORM II (1)

TL13.00075

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TL13

ANALYTE	EL	M	RUN	CCVTV	CCV6	%R	CCV7	%R	CCV8	%R	CCV9	%R	CCV10	%R	CCV11	%R
Aluminum	AL	ICP	IP091371	2000.0	1995.40	99.8	2036.86	101.8	1988.47	99.4	2002.87	100.1	1972.03	98.6	1993.52	99.7
Arsenic	AS	PMS	MS091581	50.0												
Cadmium	CD	ICP	IP091371	1000.0	1033.88	103.4	1047.55	104.8	1028.37	102.8	1037.55	103.8	1029.99	103.0	1052.27	105.2
Chromium	CR	ICP	IP091371	1000.0	1017.65	101.8	1037.49	103.7	1011.50	101.2	1025.35	102.5	1005.59	100.6	1020.09	102.0
Copper	CU	ICP	IP091371	1000.0	997.60	99.8	1008.91	100.9	994.37	99.4	1002.23	100.2	992.52	99.3	1005.92	100.6
Lead	PB	ICP	IP091371	2000.0	1975.68	98.8	2003.38	100.2	1966.18	98.3	1969.89	98.5	1964.23	98.2	1988.28	99.4
Mercury	HG	CVA	HG091601	4.0	4.04	101.0	4.02	100.5	4.01	100.3	3.99	99.8	4.08	102.0		
Nickel	NI	ICP	IP091371	1000.0	1006.02	100.6	1025.25	102.5	990.69	99.1	1008.22	100.8	991.28	99.1	1006.66	100.7
Selenium	SE	ICP	IP091371	2000.0	2000.43	100.0	2026.61	101.3	1981.65	99.1	1967.90	98.4	1965.71	98.3	1987.77	99.4
Thallium	TL	ICP	IP091371	2000.0	1957.27	97.9	1989.27	99.5	1941.38	97.1	1949.41	97.5	1942.24	97.1	1966.62	98.3
Vanadium	V	ICP	IP091371	1000.0	988.39	98.8	1001.52	100.2	985.27	98.5	994.54	99.5	983.86	98.4	998.95	99.9
Zinc	ZN	ICP	IP091371	1000.0	999.03	99.9	1020.39	102.0	992.96	99.3	1010.09	101.0	992.98	99.3	1004.95	100.5

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

TL13:00080

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TL13

ANALYTE	EL	M	RUN	CCVTV	CCV12	%R	CCV13	%R	CCV14	%R	CCV15	%R	CCV16	%R	CCV17	%R
Aluminum	AL	ICP	IP091371	2000.0	2003.75	100.2										
Arsenic	AS	PMS	MS091581	50.0												
Cadmium	CD	ICP	IP091371	1000.0	1038.76	103.9										
Chromium	CR	ICP	IP091371	1000.0	1029.26	102.9										
Copper	CU	ICP	IP091371	1000.0	998.53	99.9										
Lead	PB	ICP	IP091371	2000.0	1984.31	99.2										
Mercury	HG	CVA	HG091601	4.0												
Nickel	NI	ICP	IP091371	1000.0	1017.94	101.8										
Selenium	SE	ICP	IP091371	2000.0	1981.12	99.1										
Thallium	TL	ICP	IP091371	2000.0	1961.79	98.1										
Vanadium	V	ICP	IP091371	1000.0	992.44	99.2										
Zinc	ZN	ICP	IP091371	1000.0	1014.51	101.5										

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

TL13:000031

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TL13

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	IP091371	50.0	57.19	**114.4**	51.99	**104.0**	53.35	**106.7**	63.00	**126.0**				
Arsenic	AS	PMS	MS091581	0.2	0.20	**100.0**										
Cadmium	CD	ICP	IP091371	2.0	2.19	**109.5**	1.95	**97.5**	1.97	**98.5**	2.11	**105.5**				
Chromium	CR	ICP	IP091371	5.0	5.88	**117.6**	6.00	**120.0**	7.11	**142.2**	6.77	**135.4**				
Copper	CU	ICP	IP091371	2.0	2.02	**101.0**	2.10	**105.0**	2.13	**106.5**	2.09	**104.5**				
Lead	PB	ICP	IP091371	20.0	20.01	**100.1**	20.34	**101.7**	20.18	**100.9**	21.27	**106.4**				
Mercury	HG	CVA	HG091601	0.1	0.11	**110.0**										
Nickel	NI	ICP	IP091371	10.0	9.87	**98.7**	10.25	**102.5**	10.55	**105.5**	9.50	**95.0**				
Selenium	SE	ICP	IP091371	50.0	52.67	**105.3**	48.87	**97.7**	49.81	**99.6**	50.72	**101.4**				
Thallium	TL	ICP	IP091371	50.0	52.07	**104.1**	51.26	**102.5**	49.29	**98.6**	51.23	**102.5**				
Vanadium	V	ICP	IP091371	3.0	2.72	**90.7**	2.95	**98.3**	2.86	**95.3**	2.95	**98.3**				
Zinc	ZN	ICP	IP091371	10.0	9.28	**92.8**	9.78	**97.8**	9.16	**91.6**	9.05	**90.5**				

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

TL13-00082

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

UNITS:ug/L

SDG: TL13

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Aluminum	AL	ICP	IP091371	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	MS091581	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	IP091371	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	IP091371	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	IP091371	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	IP091371	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	HG091601	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	IP091371	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	IP091371	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	IP091371	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	IP091371	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	IP091371	20.0	10.0	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U

TL13 : 00083

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TL13

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB6	C	CCB7	C	CCB8	C	CCB9	C	CCB10	C	CCB11	C
Aluminum	AL	ICP	IP091371	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	MS091581	10.0	0.2												
Cadmium	CD	ICP	IP091371	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	IP091371	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	IP091371	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	IP091371	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	HG091601	0.2	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U		
Nickel	NI	ICP	IP091371	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	IP091371	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	IP091371	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	IP091371	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	IP091371	20.0	10.0	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U

TL13:00084

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TL13

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB12	C	CCB13	C	CCB14	C	CCB15	C	CCB16	C	CCB17	C
Aluminum	AL	ICP	IP091371	200.0	50.0	50.0	U										
Arsenic	AS	PMS	MS091581	10.0	0.2												
Cadmium	CD	ICP	IP091371	5.0	2.0	2.0	U										
Chromium	CR	ICP	IP091371	10.0	5.0	5.0	U										
Copper	CU	ICP	IP091371	25.0	2.0	2.0	U										
Lead	PB	ICP	IP091371	3.0	20.0	20.0	U										
Mercury	HG	CVA	HG091601	0.2	0.1												
Nickel	NI	ICP	IP091371	40.0	10.0	10.0	U										
Selenium	SE	ICP	IP091371	5.0	50.0	50.0	U										
Thallium	TL	ICP	IP091371	10.0	50.0	50.0	U										
Vanadium	V	ICP	IP091371	50.0	3.0	3.0	U										
Zinc	ZN	ICP	IP091371	20.0	10.0	10.0	U										

TL13 : 000035

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

SDG: TL13

ICS SOURCE: I.V.

RUNID: IP091371

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	201340.4	202095.3	**101.0**	198780.5	196996.1	**98.5**	196872.7	195326.5	**97.7**
Antimony		1000	-4.2	968.4	**96.8**	-6.0	949.3	**94.9**	-3.4	935.7	**93.6**
Arsenic		1000	13.2	1030.4	**103.0**	15.8	1018.4	**101.8**	18.8	1003.7	**100.4**
Barium		1000	2.4	1011.5	**101.2**	2.1	993.6	**99.4**	3.4	974.4	**97.4**
Beryllium		1000	0.2	1017.2	**101.7**	0.1	994.3	**99.4**	0.2	987.1	**98.7**
Boron			-3.3	-4.1		-3.2	-5.2		-3.4	-4.8	
Cadmium		1000	1.6	1034.1	**103.4**	1.4	1011.4	**101.1**	1.5	997.5	**99.8**
Calcium	100000	100000	104025.9	103752.8	**103.8**	102617.7	101977.9	**102.0**	102073.9	100974.5	**101.0**
Chromium		1000	-1.1	1022.5	**102.3**	-0.1	1003.1	**100.3**	-1.9	990.8	**99.1**
Cobalt		1000	0.9	986.5	**98.7**	0.9	974.9	**97.5**	0.8	967.8	**96.8**
Copper		1000	0.3	1020.9	**102.1**	0.3	1000.1	**100.0**	0.4	994.2	**99.4**
Iron	200000	200000	198298.7	194444.4	**97.2**	195969.1	191442.0	**95.7**	192805.5	188236.4	**94.1**
Lead		1000	-2.5	981.0	**98.1**	-1.0	970.3	**97.0**	-1.9	957.6	**95.8**
Magnesium	100000	100000	104378.8	100220.2	**100.2**	103439.9	98648.0	**98.6**	101251.9	97245.3	**97.2**
Manganese		1000	0.4	1005.7	**100.6**	0.4	988.4	**98.8**	0.5	968.6	**96.9**
Molybdenum			0.2	0.1		0.1	0.3		0.3	0.4	
Nickel		1000	0.4	978.6	**97.9**	0.7	962.0	**96.2**	2.8	944.3	**94.4**
Potassium			35.4	251.5		42.8	264.3		33.2	258.2	
Selenium		1000	19.8	1027.3	**102.7**	12.8	1019.7	**102.0**	13.8	993.8	**99.4**
Silicon			-0.9	-0.7		-0.9	-1.0		1.1	-2.3	
Silver		1000	-0.9	1030.8	**103.1**	-0.7	1010.8	**101.1**	-0.7	993.8	**99.4**
Sodium			8.8	5.7		6.1	8.6		5.4	2.8	
Strontium			10.4	10.3		10.4	10.2		10.3	10.2	
Thallium		1000	15.9	967.8	**96.8**	12.0	956.1	**95.6**	12.7	939.2	**93.9**
Tin			-11.3	-11.1		-10.3	-11.2		-11.8	-9.3	
Titanium			7.9	7.9		6.6	7.2		8.1	7.3	
Vanadium		1000	0.6	977.2	**97.7**	0.1	961.1	**96.1**	-0.4	953.6	**95.4**
Zinc		1000	0.0	971.1	**97.1**	-0.9	960.5	**96.1**	-1.8	946.1	**94.6**

TL13:00086

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

ICS SOURCE: I.V.

PROJECT: FRP 2011 Shoreline I

RUNID: IP091371

SDG: TL13

ICP INSTRUMENT ID: OPTIMA ICP

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA4	ICSAB4	%R	ICSA5	ICSAB5	%R	ICSA6	ICSAB6	%R
Aluminum	200000	200000	195819.7	195795.7	**97.9**						
Antimony		1000	-4.2	937.2	**93.7**						
Arsenic		1000	15.5	1002.9	**100.3**						
Barium		1000	2.7	969.0	**96.9**						
Beryllium		1000	0.2	996.9	**99.7**						
Boron			-4.1	-3.2							
Cadmium		1000	1.4	1002.1	**100.2**						
Calcium	100000	100000	101676.6	100874.8	**100.9**						
Chromium		1000	0.1	991.8	**99.2**						
Cobalt		1000	0.9	967.8	**96.8**						
Copper		1000	0.3	996.8	**99.7**						
Iron	200000	200000	191891.5	188338.5	**94.2**						
Lead		1000	-0.8	960.3	**96.0**						
Magnesium	100000	100000	101093.9	97059.9	**97.1**						
Manganese		1000	0.2	969.9	**97.0**						
Molybdenum			0.8	0.5							
Nickel		1000	-1.4	941.7	**94.2**						
Potassium			54.8	257.5							
Selenium		1000	15.2	1000.2	**100.0**						
Silicon			3.1	0.1							
Silver		1000	-0.6	1006.7	**100.7**						
Sodium			3.9	-3.7							
Strontium			10.3	10.3							
Thallium		1000	14.9	944.2	**94.4**						
Tin			-11.2	-10.0							
Titanium			6.5	7.9							
Vanadium		1000	0.1	957.3	**95.7**						
Zinc		1000	-1.1	936.3	**93.6**						

TL13-000067

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

ICS SOURCE: I.V.

PROJECT: FRP 2011 Shoreline I

RUNID: MS091581

SDG: TL13

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	0.0	19.9	**99.5**						
Cadmium		20	0.0	20.2	**101.0**						
Chromium		20	0.9	20.9	**104.5**						
Cobalt		20	0.0	20.0	**100.0**						
Copper		20	0.5	20.5	**102.5**						
Iron	20000	20000	20846.1	20631.4	**103.2**						
Manganese		20	0.8	20.8	**104.0**						
Molybdenum	400	400	420.3	420.6	**105.2**						
Nickel		20	0.5	19.5	**97.5**						
Selenium			0.0	0.1							
Silver		20	0.0	19.7	**98.5**						
Vanadium			0.0	-0.3							
Zinc		20	0.7	19.9	**99.5**						

TL13 : 000089

Post Digest Spike Sample Recovery

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

ANALYSIS METHOD: ICP

SDG: TL13

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	RUNID	SPIKED SAMPLE RESULT C	SAMPLE RESULT C	SPIKE ADDED	MATRIX	%R
Chromium	FRP-090611-001A	TL13APOST	IP091371	1484.27	501.58	1000	Soil	98.3

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

ANALYSIS METHOD: ICP

SDG: TL13

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-090611-001L	TL13A-L	Soil	IP091371	155992.51		152529.95		2.2	
Cadmium	FRP-090611-001L	TL13A-L	Soil	IP091371	2.30	B	10.00	U	100.0	
Chromium	FRP-090611-001L	TL13A-L	Soil	IP091371	250.79		258.00		2.9	
Copper	FRP-090611-001L	TL13A-L	Soil	IP091371	976.07		957.75		1.9	
Lead	FRP-090611-001L	TL13A-L	Soil	IP091371	94.24		100.00	U	100.0	
Nickel	FRP-090611-001L	TL13A-L	Soil	IP091371	205.38		211.10		2.8	
Selenium	FRP-090611-001L	TL13A-L	Soil	IP091371	2.72	U	250.00	U		
Thallium	FRP-090611-001L	TL13A-L	Soil	IP091371	20.85	U	250.00	U		
Vanadium	FRP-090611-001L	TL13A-L	Soil	IP091371	488.24		493.10		1.0	
Zinc	FRP-090611-001L	TL13A-L	Soil	IP091371	454.76		451.95		0.6	

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

ANALYSIS METHOD: PMS

SDG: TL13

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-090611-001L	TL13A-L	Soil	MS091581	5.40	B	5.50	B	1.9	

IDLs and ICP Linear Ranges

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

SDG: TL13 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 Inc.

PROJECT: FRP 2011 Shoreline I

IEC DATE: 9/7/2011

SDG: TL13

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

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

IEC DATE: 9/7/2011

SDG: TL13

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	242.4230000	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

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

SDG: TL13

ANALYSIS METHOD: ICP

ARI PREP CODE: SWC

PREPDATE: 9/12/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-090611-001	TL13A	1.036	0.0	50.0
FRP-090611-001D	TL13ADUP	1.031	0.0	50.0
FRP-090611-001S	TL13ASPK	1.040	0.0	50.0
FRP-090611-002	TL13B	1.078	0.0	50.0
FRP-090611-003	TL13C	1.061	0.0	50.0
FRP-090611-004	TL13D	1.064	0.0	50.0
FRP-090611-005	TL13E	1.049	0.0	50.0
FRP-090611-006	TL13F	1.002	0.0	50.0
FRP-090611-007	TL13G	1.047	0.0	50.0
FRP-090611-008	TL13H	1.059	0.0	50.0
FRP-090611-009	TL13I	1.025	0.0	50.0
FRP-090611-010	TL13J	1.096	0.0	50.0
PBS	TL13MB1	1.000	0.0	50.0
LCSS	TL13MB1SPK	1.000	0.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

SDG: TL13

ANALYSIS METHOD: PMS

ARI PREP CODE: SWN

PREPDATE: 9/12/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-090611-001	TL13A	1.053	0.0	50.0
FRP-090611-001D	TL13ADUP	1.054	0.0	50.0
FRP-090611-001S	TL13ASPK	1.054	0.0	50.0
FRP-090611-002	TL13B	1.064	0.0	50.0
FRP-090611-003	TL13C	1.061	0.0	50.0
FRP-090611-004	TL13D	1.035	0.0	50.0
FRP-090611-005	TL13E	1.051	0.0	50.0
FRP-090611-006	TL13F	1.018	0.0	50.0
FRP-090611-007	TL13G	1.091	0.0	50.0
FRP-090611-008	TL13H	1.076	0.0	50.0
FRP-090611-009	TL13I	1.032	0.0	50.0
FRP-090611-010	TL13J	1.031	0.0	50.0
PBS	TL13MB1	1.000	0.0	50.0
LCSS	TL13MB1SPK	1.000	0.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I

SDG: TL13

ANALYSIS METHOD: CVA

ARI PREP CODE: SMM

PREPDATE: 9/12/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-090611-001	TL13A	0.244	0.0	50.0
FRP-090611-001D	TL13ADUP	0.243	0.0	50.0
FRP-090611-001S	TL13ASPK	0.246	0.0	50.0
FRP-090611-002	TL13B	0.210	0.0	50.0
FRP-090611-003	TL13C	0.244	0.0	50.0
FRP-090611-004	TL13D	0.286	0.0	50.0
FRP-090611-005	TL13E	0.239	0.0	50.0
FRP-090611-006	TL13F	0.221	0.0	50.0
FRP-090611-007	TL13G	0.216	0.0	50.0
FRP-090611-008	TL13H	0.253	0.0	50.0
FRP-090611-009	TL13I	0.217	0.0	50.0
FRP-090611-010	TL13J	0.254	0.0	50.0
PBS	TL13MB1	0.200	0.0	50.0
LCSW	TL13MB1SPK	0.200	0.0	50.0

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/13/2011

SDG: TL13 RUNID: IP091371 METHOD: ICP 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	09184			X						X		X	X								X	X		X				X		X	X
S2	S2	1.00	09225									X		X	X																	X	
S3	S3	1.00	09245																				X	X		X				X			X
S4	S4	1.00	09272																														
S5	S5	1.00	09294			X																											
ICV	ICV	1.00	09322			X						X		X	X								X	X		X				X		X	X
ICB	ICB	1.00	09362			X						X		X	X								X	X		X				X		X	X
CRI	CRII	1.00	09403			X						X		X	X								X	X		X				X		X	X
ICSA	ICSAI	1.00	09445			X						X		X	X								X	X		X				X		X	X
ICSAB	ICSABI	1.00	09490			X						X		X	X								X	X		X				X		X	X
CCV	CCV1	1.00	09535			X						X		X	X								X	X		X				X		X	X
CCB	CCB1	1.00	09575			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TK92MB5	1.00	10021																														
ZZZZZZ	TK92AA-L	5.00	10062																														
ZZZZZZ	TK92AA	1.00	10104																														
ZZZZZZ	TK92AADUP	1.00	10145																														
ZZZZZZ	TK92AASPK	1.00	10190																														
ZZZZZZ	TK92AB	1.00	10230																														
ZZZZZZ	TK92AC	1.00	10272																														
ZZZZZZ	TK92AD	1.00	10313																														
ZZZZZZ	TK92AE	1.00	10355																														
ZZZZZZ	TK92MB5SPK	1.00	10400																														
CCV	CCV2	1.00	10440			X						X		X	X								X	X		X				X		X	X
CCB	CCB2	1.00	10480			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TK92AF	1.00	10522																														
ZZZZZZ	TK92AG	1.00	10563																														
ZZZZZZ	TK92AH	1.00	11005																														
ZZZZZZ	TK92AI	1.00	11050																														
ZZZZZZ	TK92AJ	1.00	11091																														
ZZZZZZ	TK92AK	1.00	11133																														
ZZZZZZ	TK92P	1.00	11174																														
ZZZZZZ	TK92Q	1.00	11220																														
ZZZZZZ	TK92R	1.00	11260																														
ZZZZZZ	TK92S	1.00	11301																														
CCV	CCV3	1.00	11342			X						X		X	X								X	X		X				X		X	X

FORM XIV

TL13-00098

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/13/2011

SDG: TL13 RUNID: IP091371 METHOD: ICP 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
CCB	CCB3	1.00	11382			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TK92MB3	1.00	11424																														
ZZZZZZ	TK92O-L	5.00	11465																														
ZZZZZZ	TK92O	1.00	11510																														
ZZZZZZ	TK92ODUP	1.00	11552																														
ZZZZZZ	TK92OSPK	1.00	11593																														
ZZZZZZ	TK92T	1.00	12033																														
ZZZZZZ	TK92U	1.00	12074																														
ZZZZZZ	TK92V	1.00	12120																														
ZZZZZZ	TK92X	1.00	12161																														
ZZZZZZ	TK92MB3SPK	1.00	12202																														
CCV	CCV4	1.00	12242			X						X		X	X								X	X		X				X		X	X
CCB	CCB4	1.00	12283			X						X		X	X								X	X		X				X		X	X
CRI	CRIF	1.00	12324			X						X		X	X								X	X		X				X		X	X
ICSA	ICSAF	1.00	12365			X						X		X	X								X	X		X				X		X	X
ICSAB	ICSABF	1.00	12411			X						X		X	X								X	X		X				X		X	X
CCV	CCV5	1.00	12460			X						X		X	X								X	X		X				X		X	X
CCB	CCB5	1.00	12500			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TK92MB4	1.00	12541																														
ZZZZZZ	TK92MB1	1.00	12583																														
ZZZZZZ	TK92W	1.00	13023																														
ZZZZZZ	TK92Y	1.00	13064																														
ZZZZZZ	TK92Z	1.00	13105																														
ZZZZZZ	TK92A-L	5.00	13151																														
ZZZZZZ	TK92A	1.00	13191																														
ZZZZZZ	TK92ADUP	1.00	13231																														
ZZZZZZ	TK92ASPK	1.00	13270																														
ZZZZZZ	TK92MB4SPK	1.00	13310																														
CCV	CCV6	1.00	13350			X						X		X	X								X	X		X				X		X	X
CCB	CCB6	1.00	13391			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TK92C	1.00	13432																														
ZZZZZZ	TK92D	1.00	13474																														
ZZZZZZ	TK92G	1.00	13514																														
ZZZZZZ	TK92I	1.00	13554																														
ZZZZZZ	TK92K	1.00	13594																														

FORM XIV

TL13:00059

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/13/2011

SDG: TL13 RUNID: IP091371 METHOD: ICP 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
ZZZZZZ	TK92M	1.00	14034																														
ZZZZZZ	TK92B	2.00	14074																														
ZZZZZZ	TK92F	2.00	14113																														
ZZZZZZ	TK92H	2.00	14153																														
ZZZZZZ	TK92MB1SPK	1.00	14193																														
CCV	CCV7	1.00	14233			X						X		X	X								X	X		X				X		X	X
CCB	CCB7	1.00	14274			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TK92MB2	2.00	14344																														
ZZZZZZ	ZZZZZZ	10.00	14390																														
ZZZZZZ	TK92E	20.00	14491																														
ZZZZZZ	TK92EDUP	20.00	14531																														
ZZZZZZ	TK92ESPK	20.00	14571																														
ZZZZZZ	TK92E-L	100.00	15062																														
ZZZZZZ	TK92J	2.00	15102																														
ZZZZZZ	TK92L	2.00	15142																														
ZZZZZZ	TK92N	2.00	15183																														
ZZZZZZ	TK92MB2SPK	2.00	15225																														
CCV	CCV8	1.00	15265			X						X		X	X								X	X		X				X		X	X
CCB	CCB8	1.00	15305			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TK92MB1	1.00	15350																														
ZZZZZZ	ZZZZZZ	1.00	15390																														
ZZZZZZ	TK92H	2.00	15432																														
ZZZZZZ	TK92G	1.00	15472																														
ZZZZZZ	TK92C	2.00	15512																														
ZZZZZZ	TK92D	2.00	15553																														
ZZZZZZ	TK92F	10.00	15593																														
ZZZZZZ	D1	1.00	16033																														
CCV	CCV9	1.00	16074			X						X		X	X								X	X		X				X		X	X
CCB	CCB9	1.00	16115			X						X		X	X								X	X		X				X		X	X
CRI	CRIF1	1.00	16160			X						X		X	X								X	X		X				X		X	X
ICSA	ICSAF1	1.00	16202			X						X		X	X								X	X		X				X		X	X
ICSAB	ICSABF1	1.00	16243			X						X		X	X								X	X		X				X		X	X
CCV	CCV10	1.00	16292			X						X		X	X								X	X		X				X		X	X
CCB	CCB10	1.00	16332			X						X		X	X								X	X		X				X		X	X
PBS	TL13MB1	2.00	16373			X						X		X	X								X	X		X				X		X	X

FORM XIV

TL13-000100

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/13/2011

SDG: TL13 RUNID: IP091371 METHOD: ICP 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
FRP-090611-001L	TL13A-L	10.00	16415			X						X		X	X								X	X		X				X		X	X
FRP-090611-001	TL13A	2.00	16455			X						X		X	X								X	X		X				X		X	X
FRP-090611-001D	TL13ADUP	2.00	16495			X						X		X	X								X	X		X				X		X	X
FRP-090611-001S	TL13ASPK	2.00	16535			X						X		X	X								X	X		X				X		X	X
FRP-090611-001A	TL13APOST	2.00	16574											X																			
FRP-090611-002	TL13B	2.00	17012			X						X		X	X								X	X		X				X		X	X
FRP-090611-003	TL13C	2.00	17052			X						X		X	X								X	X		X				X		X	X
FRP-090611-004	TL13D	2.00	17092			X						X		X	X								X	X		X				X		X	X
LCSS	TL13MB1SPK	2.00	17132			X						X		X	X								X	X		X				X		X	X
CCV	CCV11	1.00	17172			X						X		X	X								X	X		X				X		X	X
CCB	CCB11	1.00	17212			X						X		X	X								X	X		X				X		X	X
FRP-090611-005	TL13E	2.00	17254			X						X		X	X								X	X		X				X		X	X
FRP-090611-006	TL13F	2.00	17294			X						X		X	X								X	X		X				X		X	X
FRP-090611-007	TL13G	2.00	17334			X						X		X	X								X	X		X				X		X	X
FRP-090611-008	TL13H	2.00	17374			X						X		X	X								X	X		X				X		X	X
FRP-090611-009	TL13I	2.00	17415			X						X		X	X								X	X		X				X		X	X
FRP-090611-010	TL13J	2.00	17455			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	D2	1.00	17495																														
CRI	CRIF2	1.00	17541			X						X		X	X								X	X		X				X		X	X
ICSA	ICSAF2	1.00	17582			X						X		X	X								X	X		X				X		X	X
ICSAB	ICSABF2	1.00	18024			X						X		X	X								X	X		X				X		X	X
CCV	CCV12	1.00	18073			X						X		X	X								X	X		X				X		X	X
CCB	CCB12	1.00	18113			X						X		X	X								X	X		X				X		X	X

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/15/2011

SDG: TL13 RUNID: MS091581 METHOD: PMS END DATE: 9/15/2011

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	11400				X																										
S1	S1	1.00	11470				X																										
S2	S2	1.00	11550				X																										
S3	S3	1.00	12020				X																										
S4	S4	1.00	12100				X																										
ZZZZZZ	Rinse Sampl	1.00	12180																														
ICV	MICV	1.00	12250				X																										
ICB	ICB	1.00	12320				X																										
CCV	MCCV1	1.00	12400				X																										
CCB	CCB1	1.00	12470				X																										
CRI	MCRI	1.00	12540				X																										
ICSA	ICSAI	1.00	13010				X																										
ICSAB	ICSABI	1.00	13090				X																										
ZZZZZZ	LR200	1.00	13170																														
ZZZZZZ	LR300	1.00	13240																														
CCV	MCCV2	1.00	13320				X																										
CCB	CCB2	1.00	13390				X																										
ZZZZZZ	TL34MB	2.00	13470																														
ZZZZZZ	TL34MBSPK	2.00	13530																														
ZZZZZZ	TL34A	2.00	14000																														
ZZZZZZ	TL34B	2.00	14060																														
ZZZZZZ	TL30B	20.00	14130																														
ZZZZZZ	TL30C	20.00	14200																														
ZZZZZZ	TL30D	20.00	14270																														
ZZZZZZ	TL30E	20.00	14330																														
FRP-090611-002	TL13B	20.00	14400				X																										
FRP-090611-003	TL13C	20.00	14470				X																										
CCV	MCCV3	1.00	14530				X																										
CCB	CCB3	1.00	15010				X																										
PBS	TL13MB1	20.00	15080				X																										
LCSS	TL13MB1SPK	20.00	15150				X																										
FRP-090611-001L	TL13A-L	100.00	15220				X																										
FRP-090611-001	TL13A	20.00	15280				X																										
FRP-090611-001D	TL13ADUP	20.00	15350				X																										
FRP-090611-001S	TL13ASPK	20.00	15420				X																										

FORM XIV

TL13:00102

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/15/2011

SDG: TL13 RUNID: MS091581 METHOD: PMS END DATE: 9/15/2011

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-090611-004	TL13D	20.00	15480				X																										
FRP-090611-005	TL13E	20.00	15550				X																										
FRP-090611-006	TL13F	20.00	16010				X																										
FRP-090611-007	TL13G	20.00	16080				X																										
CCV	MCCV4	1.00	16150				X																										
CCB	CCB4	1.00	16220				X																										
ZZZZZZ	TL23MB2	2.00	16290																														
ZZZZZZ	TL23MB2SPK	2.00	16360																														
ZZZZZZ	TL23K-L	10.00	16430																														
ZZZZZZ	TL23K	2.00	16490																														
ZZZZZZ	TL23KDUP	2.00	16560																														
ZZZZZZ	TL23KSPK	2.00	17030																														
ZZZZZZ	TL23D	20.00	17100																														
FRP-090611-008	TL13H	20.00	17160				X																										
FRP-090611-009	TL13I	20.00	17230				X																										
FRP-090611-010	TL13J	20.00	17300				X																										
CCV	MCCV5	1.00	17360				X																										
CCB	CCB5	1.00	17440				X																										

TL13.001103

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: CETAC MERCURY START DATE: 9/16/2011

SDG: TL13 RUNID: HG091601 METHOD: CVA END DATE: 9/16/2011

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	08343														X																
S0.1	S0.1	1.00	08361														X																
S0.5	S0.5	1.00	08374														X																
S1	S1	1.00	08392														X																
S2	S2	1.00	08410														X																
S5	S5	1.00	08424														X																
S10	S10	1.00	08441														X																
ICV	AICV	1.00	08472														X																
ICB	ICB	1.00	08490														X																
CCV	ACCV1	1.00	08504														X																
CCB	CCB1	1.00	08522														X																
CRA	CRA	1.00	08535														X																
ZZZZZZ	TM02MB1	1.00	08553																														
ZZZZZZ	TM02MB1SPK	1.00	08570																														
ZZZZZZ	TM02A	1.00	08584																														
ZZZZZZ	TM02ADUP	1.00	09002																														
ZZZZZZ	TM02ASPK	1.00	09015																														
ZZZZZZ	TL52MB1	1.00	09033																														
ZZZZZZ	TL52MB1SPK	1.00	09051																														
ZZZZZZ	TL52A	1.00	09065																														
ZZZZZZ	TL52ADUP	1.00	09082																														
CCV	ACCV2	1.00	09100														X																
CCB	CCB2	1.00	09114														X																
ZZZZZZ	TL52ASPK	1.00	09132																														
ZZZZZZ	TL52B	1.00	09150																														
ZZZZZZ	TL23MB1	1.00	09163																														
ZZZZZZ	TL23MB1SPK	1.00	09181																														
ZZZZZZ	TL23A	1.00	09194																														
ZZZZZZ	TL23ADUP	1.00	09212																														
ZZZZZZ	TL23ASPK	1.00	09230																														
ZZZZZZ	TL23B	1.00	09243																														
ZZZZZZ	TL23C	1.00	09261																														
ZZZZZZ	TL23D	1.00	09275																														
CCV	ACCV3	1.00	09293														X																
CCB	CCB3	1.00	09311														X																

FORM XIV

TL13 : 001601

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: CETAC MERCURY START DATE: 9/16/2011

SDG: TL13 RUNID: HG091601 METHOD: CVA END DATE: 9/16/2011

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	TL23E	1.00	09325																														
ZZZZZZ	TL23F	1.00	09343																														
ZZZZZZ	TL23G	1.00	09360																														
ZZZZZZ	TL23H	1.00	09374																														
ZZZZZZ	TL23I	1.00	09391																														
ZZZZZZ	TL23J	1.00	09405																														
ZZZZZZ	TM21MB1	1.00	09423																														
ZZZZZZ	TM21MB1SPK	1.00	09440																														
ZZZZZZ	TM21A	1.00	09454																														
ZZZZZZ	TM21ADUP	1.00	09472																														
CCV	ACCV4	1.00	09490														X																
CCB	CCB4	1.00	09504														X																
ZZZZZZ	TM21ASPK	1.00	09522																														
ZZZZZZ	TM21B	1.00	09540																														
ZZZZZZ	TM21C	1.00	09553																														
ZZZZZZ	TM21D	1.00	09571																														
ZZZZZZ	TM21E	1.00	09585																														
ZZZZZZ	TM21F	1.00	10003																														
ZZZZZZ	TM21G	1.00	10020																														
ZZZZZZ	TM21H	1.00	10034																														
ZZZZZZ	TM21I	1.00	10052																														
ZZZZZZ	TM21J	1.00	10065																														
CCV	ACCV5	1.00	10083														X																
CCB	CCB5	1.00	10101														X																
ZZZZZZ	TM21K	1.00	10115																														
ZZZZZZ	TM21L	1.00	10133																														
CCV	ACCV6	1.00	10151														X																
CCB	CCB6	1.00	10165														X																
ZZZZZZ	TL50MB1	1.00	10184																														
ZZZZZZ	TL50MB1SPK	1.00	10201																														
ZZZZZZ	TL50A	1.00	10215																														
ZZZZZZ	TL50ADUP	1.00	10232																														
ZZZZZZ	TL50ASPK	1.00	10250																														
ZZZZZZ	TL50B	1.00	10264																														
ZZZZZZ	TL50C	1.00	10281																														

FORM XIV

TL13:00105

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: CETAC MERCURY START DATE: 9/16/2011

SDG: TL13 RUNID: HG091601 METHOD: CVA END DATE: 9/16/2011

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	TL50D	1.00	10295																														
ZZZZZZ	TL50E	1.00	10313																														
ZZZZZZ	TL50F	1.00	10330																														
CCV	ACCV7	1.00	10344														X																
CCB	CCB7	1.00	10362														X																
ZZZZZZ	TL50G	1.00	10380																														
ZZZZZZ	TL50H	1.00	10394																														
ZZZZZZ	TL50I	1.00	10412																														
ZZZZZZ	TL50J	1.00	10425																														
ZZZZZZ	TL50K	1.00	10443																														
ZZZZZZ	TL50L	1.00	10460																														
ZZZZZZ	TL50M	1.00	10474																														
PBW	TL13MB1	1.00	10492														X																
LCSW	TL13MB1SPK	1.00	10505														X																
FRP-090611-001	TL13A	1.00	10523														X																
CCV	ACCV8	1.00	10541														X																
CCB	CCB8	1.00	10555														X																
FRP-090611-001D	TL13ADUP	1.00	10573														X																
FRP-090611-001S	TL13ASPK	1.00	10591														X																
FRP-090611-002	TL13B	1.00	11004														X																
FRP-090611-003	TL13C	1.00	11022														X																
FRP-090611-004	TL13D	1.00	11040														X																
FRP-090611-005	TL13E	1.00	11053														X																
FRP-090611-006	TL13F	1.00	11071														X																
FRP-090611-007	TL13G	1.00	11085														X																
FRP-090611-008	TL13H	1.00	11102														X																
FRP-090611-009	TL13I	1.00	11120														X																
CCV	ACCV9	1.00	11134														X																
CCB	CCB9	1.00	11152														X																
FRP-090611-010	TL13J	1.00	11170														X																
ZZZZZZ	TM37MB1	1.00	11184																														
ZZZZZZ	TM37MB1SPK	1.00	11201																														
ZZZZZZ	TM37A	1.00	11215																														
ZZZZZZ	TM37ADUP	1.00	11233																														
ZZZZZZ	TM37ASPK	1.00	11251																														

FORM XIV

TL13.091605

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Amec Geomatrix Inc.

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: CETAC MERCURY START DATE: 9/16/2011

SDG: TL13 RUNID: HG091601 METHOD: CVA END DATE: 9/16/2011

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	TM37B	1.00	11265																														
ZZZZZZ	TM37C	1.00	11282																														
ZZZZZZ	TM37D	1.00	11300																														
ZZZZZZ	TM37E	1.00	11313																														
CCV	ACCV10	1.00	11331														X																
CCB	CCB10	1.00	11345														X																

TL13:00187

General Chemistry Analysis
Report and Summary QC Forms

ARI Job ID: TL13

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
pH by Method SW9045

Data Release Authorized:
Reported: 09/08/11
Date Received: 09/06/11

QC Report No: TL13-Amec Geomatrix Inc.
Project: FRP 2011 Shoreline Investigation
8769

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	RL	Result
FRP-090611-001 TL13A 11-19345	09/06/11	Soil	09/07/11	0.01	5.50
FRP-090611-002 TL13B 11-19346	09/06/11	Soil	09/07/11	0.01	3.47
FRP-090611-003 TL13C 11-19347	09/06/11	Soil	09/07/11	0.01	7.24
FRP-090611-004 TL13D 11-19348	09/06/11	Soil	09/07/11	0.01	9.82
FRP-090611-005 TL13E 11-19349	09/06/11	Soil	09/07/11	0.01	7.66
FRP-090611-006 TL13F 11-19350	09/06/11	Soil	09/07/11	0.01	7.33
FRP-090611-007 TL13G 11-19351	09/06/11	Soil	09/07/11	0.01	7.17
FRP-090611-008 TL13H 11-19352	09/06/11	Soil	09/07/11	0.01	6.27
FRP-090611-009 TL13I 11-19353	09/06/11	Soil	09/07/11	0.01	8.08
FRP-090611-010 TL13J 11-19354	09/06/11	Soil	09/07/11	0.01	8.10

Reported in std units

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

REPLICATE RESULTS-CONVENTIONALS
TL13-Amec Geomatrix Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 09/08/11

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: TL13A Client ID: FRP-090611-001					
pH	09/07/11	std units	5.50	5.41	0.09

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

LAB CONTROL RESULTS-CONVENTIONALS
TL13-Amec Geomatrix Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 09/08/11

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

Analyte	Date	Units	LCS	Spike Added	Recovery
pH	09/07/11	std units	7.03	7.00	0.03

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

Total Solids

ARI Job ID: TL13

Volatiles Total Solids-voats
Data By: Pat Basilio
Created: 9/14/11

Worklist: 5870
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. TL13A 11-19345	1.03	10.21	9.73	94.77
2. TL13B 11-19346	1.05	10.55	9.93	93.47
3. TL13C 11-19347	0.98	10.58	9.71	90.94
4. TL13D 11-19348	1.01	10.47	8.03	74.21
5. TL13E 11-19349	1.00	10.41	7.52	69.29
6. TL13F 11-19350	1.03	10.40	8.30	77.59
7. TL13G 11-19351	0.98	10.48	8.35	77.58
8. TL13H 11-19352	0.98	10.80	8.18	73.32
9. TL13I 11-19353	1.00	10.68	9.91	92.05
10. TL13J 11-19354	1.00	10.34	9.60	92.08

* - 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: 9/13/11
Date: 09/13/11 Data Analyst: DM

Solids Determination performed on 09/12/11 by DM

JOB	SAMPLE	CLIENTID	TAREWEIGHT	SAMPDISH	DRYWEIGHT	SOLIDS
TL13	A	FRP-090611-001	1.027	10.212	9.730	94.75
TL13	B	FRP-090611-002	1.047	10.546	9.927	93.48
TL13	C	FRP-090611-003	0.976	10.579	9.712	90.97
TL13	D	FRP-090611-004	1.013	10.474	8.030	74.17
TL13	E	FRP-090611-005	1.001	10.414	7.518	69.23
TL13	F	FRP-090611-006	1.029	10.400	8.303	77.62
TL13	G	FRP-090611-007	0.984	10.484	8.352	77.56
TL13	H	FRP-090611-008	0.985	10.797	8.178	73.31
TL13	I	FRP-090611-009	0.999	10.680	9.914	92.09
TL13	J	FRP-090611-010	1.002	10.340	9.605	92.13

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Total Solids Bench Sheet

Laboratory Section Metals

Oven Identification: 07 **Balance ID:** 068755

Samples in Oven: Date: 9-12-11 Time: 1000 Temp: 101°c Analyst: DM

Removed from Oven: Date: 9-13-11 Time: 0710 Temp: 101°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]
TL73	A	0.995	10.516	8.818	—	✓
"	B	1.021	10.121	8.649	—	✓
"	C	0.990	10.580	9.250	—	✓
"	D	1.016	10.866	9.654	—	✓
"	E	1.016	10.477	8.642	—	✓
"	F	1.010	10.913	9.619	—	✓
TK92	B	0.984	10.701	2.215	—	✓
"	E	0.950	10.228	4.643	—	✓
"	F	0.984	10.401	2.767	—	✓
"	H	0.977	10.578	6.292	—	✓
"	J	1.020	10.722	5.893	—	✓
"	L	1.007	10.551	6.226	—	✓
"	N	0.987	10.311	6.637	—	✓
TL13	A	1.027	10.212	9.730	—	✓
"	B	1.047	10.546	9.927	—	✓
"	C	0.976	10.579	9.712	—	✓
"	D	1.013	10.474	8.030	—	✓
"	E	1.001	10.414	7.518	—	✓
"	F	1.029	10.400	8.303	—	✓
"	G	0.984	10.484	8.352	—	✓
"	H	0.985	10.797	8.178	—	✓
"	I	0.999	10.680	9.914	—	✓
"	J	1.002	10.340	9.605	—	✓

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.