Analytical Resources, Incorporated
Analytical Chemists and Consultants

SEP 14 2011
SEATTLE ORG. 5039

September 12, 2011

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

RE: Client Project: Former Rhone Poulenc- 8769 Shoreline Investigation
ARI Job Number: TK51

Dear John:

Please find enclosed the final data package for samples for the project referenced above. ARI received ten soil samples, one water sample and a trip blank on August 30, 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 TK51

KFB/kfb

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

Chain of Custody Documentation

ARI Job ID: TK51

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: TK51	Turn-around Requested: Standard
ARI Client Company: AMEC GMX	Phone: 206-342-1773
Client Contact: Nik Bacher / John Long	
Client Project Name: FRP Shoreline Investigation 2011	
Client Project #: 8709	Samplers: Nik Bacher

Page: 3 of 4

Date: 8/30/11 | Ice Present? Y

No. of Coolers: 2 | Cooler Temps: 3.8, 2.4

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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 6010B	Mercury H2O 7470A	Mercury Soil 7471A	VOCs 8260C	pH H2O 150.1	pH soil 9045D	Astm D421/422	Astm D2216	Astm D4318	Astm D2937 ARI RP40 EPA 7100	Notes/Comments
FRP-083011-021	8/30/11	1320	Soil	4	X		X	X		X					
FRP-083011-022		1325		4	X		X	X		X					
FRP-083011-023		1330		4	X		X	X		X					
FRP-083011-024		1335		4	X		X	X		X					
FRP-083011-025		1340		4	X		X	X		X					
FRP-083011-026		1345		4	X		X	X		X					
FRP-083011-027		1350		4	X		X	X		X					
FRP-083011-028		1355		4	X		X	X		X					
FRP-083011-029		1400		4	X		X	X		X					
FRP-083011-030		1405		2							X	X	X	X	

Comments/Special Instructions: Metals include: Al, As, Cd, Cr, Cu, Pb, Ni, Se, Th, V, Zn

Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
Nik Bacher	[signature]		
Printed Name: Nik Bacher	Printed Name: C OREIRO	Printed Name:	Printed Name:
Company: AGMX	Company: ARI	Company:	Company:
Date & Time: 8/30/11 1615	Date & Time: 8/30/11 1615	Date & Time:	Date & Time:

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

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

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: TK51	Turn-around Requested: Standard	Page: 4 of 4	
ARI Client Company: AMEC GMX	Phone: 206-342-1773	Date: 8/30/11	Ice Present? Y
Client Contact: Nik Bacher / John Long		No. of Coolers: 2	Cooler Temps: 3.8, 2.4
Client Project Name: FRP Shoreline Investigation 2011			
Client Project #: 8769	Samplers: Nik Bacher		

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Sample ID	Date	Time	Matrix	No. Containers	Metals 6010B	Mercury H2O 7470A	VOCs 8260C	pH - H2O 150.1					Notes/Comments
TRIP BLANK	8/30/11		H_2O	2			X						
FRP-083011-031	↓	1505	H_2O	5	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: Nik Bacher	Printed Name: C. OREIRO	Printed Name:	Printed Name:
	Company: AGMX	Company: ARI	Company:	Company:
	Date & Time: 8/30/11 1615	Date & Time: 8/30/11 1615	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.*

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TK51:00004

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: AMEC GeoMatrix

Project Name: FRP Shoreline Investigation 2011

COC No(s): NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: TK51

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)..... 3.8 2.4

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

Temp Gun ID#: 90941619

Cooler Accepted by: [signature] Date: 8/30/11 Time: 1615

Complete custody forms and attach all shipping documents

Log-In Phase:

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

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

Samples Logged by: JM Date: 8/31/11 Time: 731

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

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

Additional Notes, Discrepancies, & Resolutions:
Trip Blank not labeled. Bottle order was prepared 8/25/11.
Trip Blank = sm in 2 of 2

By: JM Date: 8/31/11

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

PRESERVATION VERIFICATION 08/31/11
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **TK51**

PC: Kelly
VTSR: 08/30/11

Inquiry Number: NONE
Analysis Requested: 08/31/11
Contact: Long, John
Client: AMEC Geomatrix
Logged by: JM
Sample Set Used: Yes-490
Validatable Package: Yes
Deliverables:

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

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	AK102 <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
11-18899 **TK51K**	FRP-083011-031						TOT pass															

Checked By JM Date 8/31/11

TK51 : 00006

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: TK51

Case Narrative

AMEC/Geomatrix
Client Project: Former Rhone Poulenc- 8769 Shoreline Investigation
ARI Job Number: TK51
September 12, 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, one water sample and a trip blank in good condition on 8/30/11. Please see the enclosed Cooler Receipt Form for further details.

Volatiles by 8260C

The water samples were analyzed on 9/1/11 - within the method recommended holding time and the soil samples were analyzed on 9/5/11 and 9/6/11 - within the method recommended holding time.

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

Continuing calibration (s): The soil 9/5/11 VOCs CCAL is out of control high for 2-Chloroethylvinylether. All associated samples that contain analyte have been flagged with a "Q" qualifier.

The 9/6/11 soil CCAL is out of control high for all associated FORM III "Q" flagged analytes. All associated samples that contain analyte have been flagged with a "Q" qualifier.

LCS/LCSD/RPDs: The soil 9/5/11 LCS is out of control low for 1,2-Dichloroethane.

The 9/6/11 soil LCS and LCSD are out of control high for 2-Chloroethylvinylether.

Surrogates: All surrogate recoveries were within control limits.

Method Blank (s): The soil method blank on 9/5/11 contained methylene chloride, acetone and n-Butylbenzene. All associated samples that contain analyte have been flagged with a "B" qualifier.

The water method blank on 9/1/11 contained methylene chloride. All associated samples that contain analyte 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 9/2/11 - within the method recommended holding time and analyzed on 9/6/11.

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

AMEC/Geomatrix
Client Project: Former Rhone Poulenc- 8769 Shoreline Investigation
ARI Job Number: TK51
September 12, 2011

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

Internal Standards: Internal standard areas were in control.

LCS/LCSD/RPDs: Are in control.

Surrogates: All surrogate recoveries were within control limits.

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

Samples: There were no anomalies associated with these samples.

Matrix spike/ Sample duplicate/ RPD(s): The RPD for mercury is outside of the +/-20% control limit for sample FRP-083011-021 with the percent recovery for copper out of control high.

pH by method 9045:

The samples were analyzed on 8/31/11 within method recommended holding time.

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

LCS/LCSD/RPDs: Are in control.

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

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: AMEC Geomatrix	**ARI Job No.:** TK51
Client Project: FRP Shoreline Investigation 2011	**Client Project No.:** 8769

Case Narrative

1. One sample was submitted on August 31, 2011 for grain size analysis, Atterberg limits, bulk density and moisture content determination. The sample was in good condition.
2. The Atterberg limits determination was run according to ASTM D4318.
3. Grain size distribution was run according to ASTM D422, sieve and hydrometer analysis. The sample was set up according to ASTM D421. A standard milkshake-type mixer was used to disperse the hydrometer sample. A specific gravity of 2.65 was used in the hydrometer calculations. The sample was run in a single batch, and one sample from another job on this project, FRP-082911-005, was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
4. The moisture content was run according to ASTM D2216.
5. Bulk (wet/dry) density was run according to ASTM D7263. The sample was batch with another job, and triplicate analysis was run on sample FRP-082911-005.
6. The data is provided in summary tables and plots.
7. There were no noted anomalies in the sample or methods on this project.

Released by: [signature] Date: 9/8/11
Title: *Geotechnical Division Manager*

Reviewed by: [signature] Date: 9-8-2011
Title: *Lead Technician*

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: TK51
Client: AMEC Geomatrix
Project Event: 8769
Project Name: FRP Shoreline Investigation 2011

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	FRP-083011-021	TK51A	11-18889	Soil	08/30/11 13:20	08/30/11 16:15
2.	FRP-083011-022	TK51B	11-18890	Soil	08/30/11 13:25	08/30/11 16:15
3.	FRP-083011-023	TK51C	11-18891	Soil	08/30/11 13:30	08/30/11 16:15
4.	FRP-083011-024	TK51D	11-18892	Soil	08/30/11 13:35	08/30/11 16:15
5.	FRP-083011-025	TK51E	11-18893	Soil	08/30/11 13:40	08/30/11 16:15
6.	FRP-083011-026	TK51F	11-18894	Soil	08/30/11 13:45	08/30/11 16:15
7.	FRP-083011-027	TK51G	11-18895	Soil	08/30/11 13:50	08/30/11 16:15
8.	FRP-083011-028	TK51H	11-18896	Soil	08/30/11 13:55	08/30/11 16:15
9.	FRP-083011-029	TK51I	11-18897	Soil	08/30/11 14:00	08/30/11 16:15
10.	FRP-083011-030	TK51J	11-18898	Soil	08/30/11 14:05	08/30/11 16:15
11.	FRP-083011-031	TK51K	11-18899	Water	08/30/11 15:05	08/30/11 16:15
12.	TRIP BLANK	TK51L	11-18900	Water	08/30/11	08/30/11 16:15

Printed 08/31/11

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

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

* Duplicate RPD is not within established control limits

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

N Matrix Spike recovery not within established control limits

NA Not Applicable, analyte not spiked

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

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

Organic Data

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

* Flagged value is not within established control limits

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

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

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

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

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

TK51 : 00012

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)**

TK51 : 00013

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

TK51 : 00014

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

TK51 : 00015

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

TK51 : 00016

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					

TK51 : 00017

Analytical Resources, Incorporated
Analytical Chemists and Consultants

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

Effective: 8/30/2010

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

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

TK51 : 00018

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

TK51 : 00015

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

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

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

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

TK51 : 00026

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%

TK51 : 00021

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%

TK51 : 00022

Volatile Analysis
Report and Summary QC Forms

ARI Job ID: TK51

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-031**
 SAMPLE

Lab Sample ID: TK51K
LIMS ID: 11-18899
Matrix: Water
Data Release Authorized:
Reported: 09/06/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011 8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/01/11 23:33

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.10	0.5	< 0.5 U
74-83-9	Bromomethane	0.04	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.08	0.2	< 0.2 U
75-00-3	Chloroethane	0.15	0.2	< 0.2 U
75-09-2	**Methylene Chloride**	**0.39**	**0.5**	**1.2 B**
67-64-1	Acetone	0.72	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.09	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.09	0.2	< 0.2 U
75-34-3	1,1-Dichloroethane	0.05	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.08	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.10	0.2	< 0.2 U
67-66-3	**Chloroform**	**0.08**	**0.2**	**3.1**
107-06-2	1,2-Dichloroethane	0.08	0.2	< 0.2 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.09	0.2	< 0.2 U
56-23-5	Carbon Tetrachloride	0.08	0.2	< 0.2 U
108-05-4	Vinyl Acetate	0.07	1.0	< 1.0 U
75-27-4	Bromodichloromethane	0.05	0.2	< 0.2 U
78-87-5	1,2-Dichloropropane	0.09	0.2	< 0.2 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.2	< 0.2 U
79-01-6	Trichloroethene	0.08	0.2	< 0.2 U
124-48-1	Dibromochloromethane	0.09	0.2	< 0.2 U
79-00-5	1,1,2-Trichloroethane	0.04	0.2	< 0.2 U
71-43-2	Benzene	0.06	0.2	< 0.2 U
10061-02-6	trans-1,3-Dichloropropene	0.06	0.2	< 0.2 U
110-75-8	2-Chloroethylvinylether	0.09	1.0	< 1.0 U
75-25-2	Bromoform	0.07	0.2	< 0.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.38	5.0	< 5.0 U
591-78-6	2-Hexanone	0.31	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.09	0.2	< 0.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.07	0.2	< 0.2 UR
108-88-3	Toluene	0.06	0.2	< 0.2 U
108-90-7	Chlorobenzene	0.04	0.2	< 0.2 U
100-41-4	Ethylbenzene	0.09	0.2	< 0.2 U
100-42-5	Styrene	0.07	0.2	< 0.2 U
75-69-4	Trichlorofluoromethane	0.09	0.2	< 0.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.11	0.2	< 0.2 U
179601-23-1	m,p-Xylene	0.14	0.4	< 0.4 U
95-47-6	o-Xylene	0.06	0.2	< 0.2 U
95-50-1	1,2-Dichlorobenzene	0.06	0.2	< 0.2 U
541-73-1	1,3-Dichlorobenzene	0.04	0.2	< 0.2 U
106-46-7	1,4-Dichlorobenzene	0.06	0.2	< 0.2 U
107-02-8	Acrolein	0.29	5.0	< 5.0 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-031**
 SAMPLE

Lab Sample ID: TK51K
LIMS ID: 11-18899
Matrix: Water
Date Analyzed: 09/01/11 23:33

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.04	1.0	< 1.0 U
74-96-4	Bromoethane	0.09	0.2	< 0.2 U
107-13-1	Acrylonitrile	0.18	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.09	0.2	< 0.2 U
74-95-3	Dibromomethane	0.08	0.2	< 0.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.07	0.2	< 0.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.21	0.5	< 0.5 U
96-18-4	1,2,3-Trichloropropane	0.23	0.5	< 0.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.24	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.06	0.2	< 0.2 U
95-63-6	1,2,4-Trimethylbenzene	0.06	0.2	< 0.2 U
87-68-3	Hexachlorobutadiene	0.11	0.5	< 0.5 U
106-93-4	Ethylene Dibromide	0.08	0.2	< 0.2 U
74-97-5	Bromochloromethane	0.07	0.2	< 0.2 U
594-20-7	2,2-Dichloropropane	0.08	0.2	< 0.2 U
142-28-9	1,3-Dichloropropane	0.02	0.2	< 0.2 U
98-82-8	Isopropylbenzene	0.06	0.2	< 0.2 U
103-65-1	n-Propylbenzene	0.08	0.2	< 0.2 U
108-86-1	Bromobenzene	0.05	0.2	< 0.2 U
95-49-8	2-Chlorotoluene	0.04	0.2	< 0.2 U
106-43-4	4-Chlorotoluene	0.07	0.2	< 0.2 U
98-06-6	tert-Butylbenzene	0.06	0.2	< 0.2 U
135-98-8	sec-Butylbenzene	0.08	0.2	< 0.2 U
99-87-6	4-Isopropyltoluene	0.08	0.2	< 0.2 U
104-51-8	n-Butylbenzene	0.11	0.2	< 0.2 U
120-82-1	1,2,4-Trichlorobenzene	0.10	0.5	< 0.5 U
91-20-3	Naphthalene	0.07	0.5	< 0.5 U
87-61-6	1,2,3-Trichlorobenzene	0.09	0.5	< 0.5 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.5%
d8-Toluene	100%
Bromofluorobenzene	99.2%
d4-1,2-Dichlorobenzene	101%

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

FORM I

ANALYTICAL RESOURCES INCORPORATED

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

Lab Sample ID: TK51L
LIMS ID: 11-18900
Matrix: Water
Data Release Authorized:
Reported: 09/06/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011 8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/01/11 19:32

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.10	0.5	< 0.5 U
74-83-9	Bromomethane	0.04	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.08	0.2	< 0.2 U
75-00-3	Chloroethane	0.15	0.2	< 0.2 U
75-09-2	**Methylene Chloride**	**0.39**	**0.5**	**0.7 ~~B~~ U**
67-64-1	Acetone	0.72	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.09	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.09	0.2	< 0.2 U
75-34-3	1,1-Dichloroethane	0.05	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.08	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.10	0.2	< 0.2 U
67-66-3	Chloroform	0.08	0.2	< 0.2 U
107-06-2	1,2-Dichloroethane	0.08	0.2	< 0.2 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.09	0.2	< 0.2 U
56-23-5	Carbon Tetrachloride	0.08	0.2	< 0.2 U
108-05-4	Vinyl Acetate	0.07	1.0	< 1.0 U
75-27-4	Bromodichloromethane	0.05	0.2	< 0.2 U
78-87-5	1,2-Dichloropropane	0.09	0.2	< 0.2 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.2	< 0.2 U
79-01-6	Trichloroethene	0.08	0.2	< 0.2 U
124-48-1	Dibromochloromethane	0.09	0.2	< 0.2 U
79-00-5	1,1,2-Trichloroethane	0.04	0.2	< 0.2 U
71-43-2	Benzene	0.06	0.2	< 0.2 U
10061-02-6	trans-1,3-Dichloropropene	0.06	0.2	< 0.2 U
110-75-8	2-Chloroethylvinylether	0.09	1.0	< 1.0 U
75-25-2	Bromoform	0.07	0.2	< 0.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.38	5.0	< 5.0 U
591-78-6	2-Hexanone	0.31	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.09	0.2	< 0.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.07	0.2	< 0.2 U R
108-88-3	Toluene	0.06	0.2	< 0.2 U
108-90-7	Chlorobenzene	0.04	0.2	< 0.2 U
100-41-4	Ethylbenzene	0.09	0.2	< 0.2 U
100-42-5	Styrene	0.07	0.2	< 0.2 U
75-69-4	Trichlorofluoromethane	0.09	0.2	< 0.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.11	0.2	< 0.2 U
179601-23-1	m,p-Xylene	0.14	0.4	< 0.4 U
95-47-6	o-Xylene	0.06	0.2	< 0.2 U
95-50-1	1,2-Dichlorobenzene	0.06	0.2	< 0.2 U
541-73-1	1,3-Dichlorobenzene	0.04	0.2	< 0.2 U
106-46-7	1,4-Dichlorobenzene	0.06	0.2	< 0.2 U
107-02-8	Acrolein	0.29	5.0	< 5.0 U

FORM I

2/21/12

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: TRIP BLANK SAMPLE

Lab Sample ID: TK51L
LIMS ID: 11-18900
Matrix: Water
Date Analyzed: 09/01/11 19:32

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.04	1.0	< 1.0 U
74-96-4	Bromoethane	0.09	0.2	< 0.2 U
107-13-1	Acrylonitrile	0.18	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.09	0.2	< 0.2 U
74-95-3	Dibromomethane	0.08	0.2	< 0.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.07	0.2	< 0.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.21	0.5	< 0.5 U
96-18-4	1,2,3-Trichloropropane	0.23	0.5	< 0.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.24	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.06	0.2	< 0.2 U
95-63-6	1,2,4-Trimethylbenzene	0.06	0.2	< 0.2 U
87-68-3	Hexachlorobutadiene	0.11	0.5	< 0.5 U
106-93-4	Ethylene Dibromide	0.08	0.2	< 0.2 U
74-97-5	Bromochloromethane	0.07	0.2	< 0.2 U
594-20-7	2,2-Dichloropropane	0.08	0.2	< 0.2 U
142-28-9	1,3-Dichloropropane	0.02	0.2	< 0.2 U
98-82-8	Isopropylbenzene	0.06	0.2	< 0.2 U
103-65-1	n-Propylbenzene	0.08	0.2	< 0.2 U
108-86-1	Bromobenzene	0.05	0.2	< 0.2 U
95-49-8	2-Chlorotoluene	0.04	0.2	< 0.2 U
106-43-4	4-Chlorotoluene	0.07	0.2	< 0.2 U
98-06-6	tert-Butylbenzene	0.06	0.2	< 0.2 U
135-98-8	sec-Butylbenzene	0.08	0.2	< 0.2 U
99-87-6	4-Isopropyltoluene	0.08	0.2	< 0.2 U
104-51-8	n-Butylbenzene	0.11	0.2	< 0.2 U
120-82-1	1,2,4-Trichlorobenzene	0.10	0.5	< 0.5 U
91-20-3	Naphthalene	0.07	0.5	< 0.5 U
87-61-6	1,2,3-Trichlorobenzene	0.09	0.5	< 0.5 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.6%
d8-Toluene	97.4%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	104%

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

FORM I

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-090111	Method Blank	10	99.9%	97.3%	103%	101%	0
LCS-090111	Lab Control	10	102%	98.8%	102%	100%	0
LCSD-090111	Lab Control Dup	10	102%	98.7%	102%	99.2%	0
TK51K	FRP-083011-031	10	99.5%	100%	99.2%	101%	0
TK51L	TRIP BLANK	10	99.6%	97.4%	101%	104%	0

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

Prep Method: SW5030B
Log Number Range: 11-18899 to 11-18900

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-090111**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-090111
LIMS ID: 11-18899
Matrix: Water
Data Release Authorized:
Reported: 09/06/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/PKC
LCSD: NT3/PKC
Date Analyzed LCS: 09/01/11 17:40
LCSD: 09/01/11 18:06

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

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	10.1	10.0	101%	9.6	10.0	96.0%	5.1%
Bromomethane	10.4	10.0	104%	10.2	10.0	102%	1.9%
Vinyl Chloride	9.9	10.0	99.0%	9.6	10.0	96.0%	3.1%
Chloroethane	9.7	10.0	97.0%	9.5	10.0	95.0%	2.1%
Methylene Chloride	10.6 B	10.0	106%	10.3 B	10.0	103%	2.9%
Acetone	52.0	50.0	104%	46.9	50.0	93.8%	10.3%
Carbon Disulfide	10.0	10.0	100%	9.9	10.0	99.0%	1.0%
1,1-Dichloroethene	10.1	10.0	101%	9.8	10.0	98.0%	3.0%
1,1-Dichloroethane	10.2	10.0	102%	9.8	10.0	98.0%	4.0%
trans-1,2-Dichloroethene	10.0	10.0	100%	9.7	10.0	97.0%	3.0%
cis-1,2-Dichloroethene	9.8	10.0	98.0%	9.8	10.0	98.0%	0.0%
Chloroform	10.2	10.0	102%	10.0	10.0	100%	2.0%
1,2-Dichloroethane	9.9	10.0	99.0%	9.4	10.0	94.0%	5.2%
2-Butanone	51.3	50.0	103%	46.1	50.0	92.2%	10.7%
1,1,1-Trichloroethane	10.3	10.0	103%	10.1	10.0	101%	2.0%
Carbon Tetrachloride	10.3	10.0	103%	10.5	10.0	105%	1.9%
Vinyl Acetate	10.1	10.0	101%	9.7	10.0	97.0%	4.0%
Bromodichloromethane	9.8	10.0	98.0%	9.7	10.0	97.0%	1.0%
1,2-Dichloropropane	10.0	10.0	100%	9.5	10.0	95.0%	5.1%
cis-1,3-Dichloropropene	10.5	10.0	105%	9.7	10.0	97.0%	7.9%
Trichloroethene	9.8	10.0	98.0%	9.7	10.0	97.0%	1.0%
Dibromochloromethane	10.4	10.0	104%	10.4	10.0	104%	0.0%
1,1,2-Trichloroethane	10.0	10.0	100%	9.4	10.0	94.0%	6.2%
Benzene	10.0	10.0	100%	9.9	10.0	99.0%	1.0%
trans-1,3-Dichloropropene	10.2	10.0	102%	9.8	10.0	98.0%	4.0%
2-Chloroethylvinylether	9.7	10.0	97.0%	9.2	10.0	92.0%	5.3%
Bromoform	10.0	10.0	100%	9.8	10.0	98.0%	2.0%
4-Methyl-2-Pentanone (MIBK)	51.1	50.0	102%	49.2	50.0	98.4%	3.8%
2-Hexanone	51.0	50.0	102%	48.8	50.0	97.6%	4.4%
Tetrachloroethene	10.0	10.0	100%	9.6	10.0	96.0%	4.1%
1,1,2,2-Tetrachloroethane	10.0	10.0	100%	9.4	10.0	94.0%	6.2%
Toluene	10.0	10.0	100%	9.7	10.0	97.0%	3.0%
Chlorobenzene	10.1	10.0	101%	9.9	10.0	99.0%	2.0%
Ethylbenzene	10.2	10.0	102%	10.0	10.0	100%	2.0%
Styrene	10.5	10.0	105%	10.3	10.0	103%	1.9%
Trichlorofluoromethane	10.0	10.0	100%	10.1	10.0	101%	1.0%
1,1,2-Trichloro-1,2,2-trifluoroetha	10.0	10.0	100%	9.8	10.0	98.0%	2.0%
m,p-Xylene	20.8	20.0	104%	20.4	20.0	102%	1.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-090111**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-090111
LIMS ID: 11-18899
Matrix: Water

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	10.3	10.0	103%	10.1	10.0	101%	2.0%
1,2-Dichlorobenzene	10.0	10.0	100%	9.7	10.0	97.0%	3.0%
1,3-Dichlorobenzene	10.0	10.0	100%	9.6	10.0	96.0%	4.1%
1,4-Dichlorobenzene	9.9	10.0	99.0%	9.6	10.0	96.0%	3.1%
Acrolein	48.0	50.0	96.0%	46.0	50.0	92.0%	4.3%
Methyl Iodide	10.3	10.0	103%	10.1	10.0	101%	2.0%
Bromoethane	10.3	10.0	103%	10.0	10.0	100%	3.0%
Acrylonitrile	10.9	10.0	109%	9.3	10.0	93.0%	15.8%
1,1-Dichloropropene	10.1	10.0	101%	10.2	10.0	102%	1.0%
Dibromomethane	9.8	10.0	98.0%	9.8	10.0	98.0%	0.0%
1,1,1,2-Tetrachloroethane	10.4	10.0	104%	10.3	10.0	103%	1.0%
1,2-Dibromo-3-chloropropane	10.1	10.0	101%	9.8	10.0	98.0%	3.0%
1,2,3-Trichloropropane	10.0	10.0	100%	9.6	10.0	96.0%	4.1%
trans-1,4-Dichloro-2-butene	10.1	10.0	101%	10.1	10.0	101%	0.0%
1,3,5-Trimethylbenzene	10.4	10.0	104%	10.1	10.0	101%	2.9%
1,2,4-Trimethylbenzene	10.4	10.0	104%	10.0	10.0	100%	3.9%
Hexachlorobutadiene	10.8	10.0	108%	10.3	10.0	103%	4.7%
Ethylene Dibromide	10.3	10.0	103%	10.0	10.0	100%	3.0%
Bromochloromethane	10.4	10.0	104%	9.8	10.0	98.0%	5.9%
2,2-Dichloropropane	10.3	10.0	103%	10.2	10.0	102%	1.0%
1,3-Dichloropropane	10.2	10.0	102%	9.5	10.0	95.0%	7.1%
Isopropylbenzene	10.3	10.0	103%	9.8	10.0	98.0%	5.0%
n-Propylbenzene	10.4	10.0	104%	10.1	10.0	101%	2.9%
Bromobenzene	10.1	10.0	101%	9.7	10.0	97.0%	4.0%
2-Chlorotoluene	10.1	10.0	101%	9.7	10.0	97.0%	4.0%
4-Chlorotoluene	10.1	10.0	101%	9.9	10.0	99.0%	2.0%
tert-Butylbenzene	10.4	10.0	104%	9.9	10.0	99.0%	4.9%
sec-Butylbenzene	10.4	10.0	104%	10.1	10.0	101%	2.9%
4-Isopropyltoluene	10.4	10.0	104%	10.0	10.0	100%	3.9%
n-Butylbenzene	10.6	10.0	106%	10.2	10.0	102%	3.8%
1,2,4-Trichlorobenzene	10.6	10.0	106%	10.2	10.0	102%	3.8%
Naphthalene	10.6	10.0	106%	10.1	10.0	101%	4.8%
1,2,3-Trichlorobenzene	10.5	10.0	105%	9.9	10.0	99.0%	5.9%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	102%	102%
d8-Toluene	98.8%	98.7%
Bromofluorobenzene	102%	102%
d4-1,2-Dichlorobenzene	100%	99.2%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0901

Lab Name: ANALYTICAL RESOURCES INC

Client: AMEC GEOMATRIX

ARI Job No: TK57

Project: FRP SHORELINE INVESTIGA

Lab File ID: MB0901

Lab Sample ID: MB0901

Date Analyzed: 09/01/11

Time Analyzed: 1833

Instrument ID: NT3

Heated Purge: (Y/N) N

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS0901	LCS0901	LCS0901	1740
02	LCS0901	LCS0901	LCS0901A	1806
03	TRIP BLANKS	TK57G	TK57G	1905
04	TRIP BLANK	TK51L	TK51L	1932
05	FRP-083111-0	TK57A	TK57A	2053
06	FRP-083111-0	TK57B	TK57B	2120
07	FRP-083111-0	TK57C	TK57C	2147
08	FRP-083111-0	TK57D	TK57D	2213
09	FRP-083111-0	TK57E	TK57E	2240
10	FRP-083111-0	TK57F	TK57F	2307
11	FRP-083011-0	TK51K	TK51K	2333
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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-090111**
 METHOD BLANK

Lab Sample ID: MB-090111
LIMS ID: 11-18899
Matrix: Water
Data Release Authorized:
Reported: 09/06/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011 8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/01/11 18:33

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-090111**

METHOD BLANK

Lab Sample ID: MB-090111
LIMS ID: 11-18899
Matrix: Water
Date Analyzed: 09/01/11 18:33

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.04	1.0	< 1.0 U
74-96-4	Bromoethane	0.09	0.2	< 0.2 U
107-13-1	Acrylonitrile	0.18	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.09	0.2	< 0.2 U
74-95-3	Dibromomethane	0.08	0.2	< 0.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.07	0.2	< 0.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.21	0.5	< 0.5 U
96-18-4	1,2,3-Trichloropropane	0.23	0.5	< 0.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.24	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.06	0.2	< 0.2 U
95-63-6	1,2,4-Trimethylbenzene	0.06	0.2	< 0.2 U
87-68-3	Hexachlorobutadiene	0.11	0.5	< 0.5 U
106-93-4	Ethylene Dibromide	0.08	0.2	< 0.2 U
74-97-5	Bromochloromethane	0.07	0.2	< 0.2 U
594-20-7	2,2-Dichloropropane	0.08	0.2	< 0.2 U
142-28-9	1,3-Dichloropropane	0.02	0.2	< 0.2 U
98-82-8	Isopropylbenzene	0.06	0.2	< 0.2 U
103-65-1	n-Propylbenzene	0.08	0.2	< 0.2 U
108-86-1	Bromobenzene	0.05	0.2	< 0.2 U
95-49-8	2-Chlorotoluene	0.04	0.2	< 0.2 U
106-43-4	4-Chlorotoluene	0.07	0.2	< 0.2 U
98-06-6	tert-Butylbenzene	0.06	0.2	< 0.2 U
135-98-8	sec-Butylbenzene	0.08	0.2	< 0.2 U
99-87-6	4-Isopropyltoluene	0.08	0.2	< 0.2 U
104-51-8	n-Butylbenzene	0.11	0.2	< 0.2 U
120-82-1	1,2,4-Trichlorobenzene	0.10	0.5	< 0.5 U
91-20-3	Naphthalene	0.07	0.5	< 0.5 U
87-61-6	1,2,3-Trichlorobenzene	0.09	0.5	< 0.5 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.9%
d8-Toluene	97.3%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	101%

FORM I

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.: TK57

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

Instrument ID: NT3 BFB Injection Time: 1058

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

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

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

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0.2	VSTD0.2	00_20901	09/01/11	1147
02	VSTD0.5	VSTD0.5	00_50901	09/01/11	1214
03	VSTD01	VSTD01	01_00901	09/01/11	1241
04	VSTD02	VSTD02	02_00901	09/01/11	1308
05	VSTD10	VSTD10	10_00901	09/01/11	1334
06	VSTD20	VSTD20	20_00901	09/01/11	1402
07	VSTD40	VSTD40	40_00901	09/01/11	1428
08	VSTD80	VSTD80	80_00901	09/01/11	1455
09	ICV10	ICV10	ICV0901	09/01/11	1548
10					
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FORM V VOA OLM3.2M

TK51:00034

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.: TK57

Lab File ID: BFB0901X BFB Injection Date: 09/01/11

Instrument ID: NT3 BFB Injection Time: 1636

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

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8.0 - 40.0% of mass 95	15.1	
75	30.0 - 66.0% of mass 95	46.0	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0% of mass 95	5.9	
173	Less than 2.0% of mass 174	0.4	(0.5)1
174	50.0 - 101.0% of mass 95	82.7	
175	4.0 - 9.0% of mass 174	6.9	(8.4)1
176	93.0 - 101.0% of mass 174	79.7	(96.3)1
177	5.0 - 9.0% of mass 176	5.4	(6.8)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	CC0901	CC0901	CC0901	09/01/11	1712
02	LCS0901	LCS0901	LCS0901	09/01/11	1740
03	LCS0901	LCS0901	LCS0901A	09/01/11	1806
04	MB0901	MB0901	MB0901	09/01/11	1833
05	TRIP BLANKS	TK57G	TK57G	09/01/11	1905
06	TRIP BLANK	TK51L	TK51L	09/01/11	1932
07	FRP-083111-001	TK57A	TK57A	09/01/11	2053
08	FRP-083111-002	TK57B	TK57B	09/01/11	2120
09	FRP-083111-003	TK57C	TK57C	09/01/11	2147
10	FRP-083111-004	TK57D	TK57D	09/01/11	2213
11	FRP-083111-005	TK57E	TK57E	09/01/11	2240
12	FRP-083111-006	TK57F	TK57F	09/01/11	2307
13	FRP-083011-031	TK51K	TK51K	09/01/11	2333
14					
15					
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22					

FORM V VOA OLM3.2M

TK51 : 00035

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TK57 Project: FRP SHORELINE INVESTIGATION

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

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

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

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TK57 Project: FRP SHORELINE INVESTIGATION

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

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

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

TK51 : 00037

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TK57 Project: FRP SHORELINE INVESTIGATION

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

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

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

TK51:00038

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TK57 Project: FRP SHORELINE INVESTIGATION

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

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

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

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TK57 Project: FRP SHORELINE INVESTIGATION

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

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

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

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TK57 Project: FRP SHORELINE INVESTIGATION

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

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

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

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK57 — Project: FRP SHORELINE INVESTIGATION

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

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

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

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK57 — Project: FRP SHORELINE INVESTIGATION

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

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

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

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK57 — Project: FRP SHORELINE INVESTIGATION

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

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

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

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK57 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: NT3 — Cont. Calib. Date: 09/01/11

Init. Calib. Date: 09/01/11 — Cont. Calib. Time: 1712

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Chloromethane	0.508	0.500	0.100	AVRG	-1.6
Vinyl Chloride	0.624	0.591	0.010	AVRG	-5.3
Bromomethane	0.376	0.370	0.010	AVRG	-1.6
Chloroethane	0.392	0.371	0.010	AVRG	-5.4
Trichlorofluoromethane	0.849	0.841	0.010	AVRG	-0.9
Acrolein	0.027	0.023	0.010	AVRG	-14.8
112Trichloro122Trifluoroetha	0.608	0.602	0.010	AVRG	-1.0
Acetone	0.039	0.040	0.010	AVRG	2.6
1,1-Dichloroethene	0.507	0.486	0.010	AVRG	-4.1
Bromoethane	0.421	0.422	0.010	AVRG	0.2
Iodomethane	0.880	0.870	0.010	AVRG	-1.1
Methylene Chloride	10.000	10.135	0.010	LINR	1.4
Acrylonitrile	0.048	0.042	0.010	AVRG	-12.5
Carbon Disulfide	1.706	1.681	0.010	AVRG	-1.5
Trans-1,2-Dichloroethene	0.574	0.556	0.010	AVRG	-3.1
Vinyl Acetate	0.294	0.268	0.010	AVRG	-8.8
1,1-Dichloroethane	0.864	0.833	0.100	AVRG	-3.6
2-Butanone	0.056	0.050	0.010	AVRG	-10.7
2,2-Dichloropropane	0.787	0.794	0.010	AVRG	0.9
Cis-1,2-Dichloroethene	0.554	0.531	0.010	AVRG	-4.2
Chloroform	0.867	0.838	0.010	AVRG	-3.3
Bromochloromethane	0.201	0.194	0.010	AVRG	-3.5
1,1,1-Trichloroethane	0.919	0.906	0.010	AVRG	-1.4
1,1-Dichloropropene	0.455	0.457	0.010	AVRG	0.4
Carbon Tetrachloride	0.484	0.490	0.010	AVRG	1.2
1,2-Dichloroethane	0.267	0.243	0.010	AVRG	-9.0
Benzene	1.246	1.237	0.010	AVRG	-0.7
Trichloroethene	0.374	0.358	0.010	AVRG	-4.3
1,2-Dichloropropane	0.250	0.239	0.010	AVRG	-4.4
Bromodichloromethane	0.326	0.306	0.010	AVRG	-6.1
Dibromomethane	0.110	0.101	0.010	AVRG	-8.2
2-Chloroethyl Vinyl Ether	0.080	0.076	0.010	AVRG	-5.0
4-Methyl-2-Pentanone	0.096	0.090	0.010	AVRG	-6.2
Cis 1,3-dichloropropene	0.363	0.354	0.010	AVRG	-2.5
Toluene	0.865	0.873	0.010	AVRG	0.9
Trans 1,3-Dichloropropene	0.291	0.282	0.010	AVRG	-3.1
2-Hexanone	0.065	0.062	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: TK57 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: NT3 — Cont. Calib. Date: 09/01/11

Init. Calib. Date: 09/01/11 — Cont. Calib. Time: 1712

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
1,1,2-Trichloroethane	0.162	0.159	0.010	AVRG	-1.8	
1,3-Dichloropropane	0.279	0.264	0.010	AVRG	-5.4	
Tetrachloroethene	0.410	0.407	0.010	AVRG	-0.7	
Chlorodibromomethane	0.200	0.191	0.010	AVRG	-4.5	
1,2-Dibromoethane	0.156	0.153	0.010	AVRG	-1.9	
Chlorobenzene	0.993	0.982	0.300	AVRG	-1.1	
Ethyl Benzene	1.804	1.848	0.010	AVRG	2.4	
1,1,1,2-Tetrachloroethane	0.317	0.301	0.010	AVRG	-5.0	
m,p-xylene	0.721	0.731	0.010	AVRG	1.4	
o-Xylene	0.713	0.722	0.010	AVRG	1.3	
Styrene	1.052	1.067	0.010	AVRG	1.4	
Bromoform	0.172	0.156	0.100	AVRG	-9.3	
1,1,2,2-Tetrachloroethane	0.316	0.298	0.300	AVRG	-5.7	*
1,2,3-Trichloropropane	0.102	0.095	0.010	AVRG	-6.9	
Trans-1,4-Dichloro 2-Butene	0.079	0.065	0.010	AVRG	-17.7	
N-Propyl Benzene	3.641	3.857	0.010	AVRG	5.9	
Bromobenzene	0.670	0.676	0.010	AVRG	0.9	
Isopropyl Benzene	3.239	3.350	0.010	AVRG	3.4	
2-Chloro Toluene	2.283	2.313	0.010	AVRG	1.3	
4-Chloro Toluene	2.286	2.348	0.010	AVRG	2.7	
T-Butyl Benzene	2.531	2.609	0.010	AVRG	3.1	
1,3,5-Trimethyl Benzene	2.826	2.981	0.010	AVRG	5.5	
1,2,4-Trimethylbenzene	2.883	2.997	0.010	AVRG	4.0	
S-Butyl Benzene	3.636	3.842	0.010	AVRG	5.7	
4-Isopropyl Toluene	3.158	3.344	0.010	AVRG	5.9	
1,3-Dichlorobenzene	1.551	1.536	0.010	AVRG	-1.0	
1,4-Dichlorobenzene	1.528	1.500	0.010	AVRG	-1.8	
N-Butyl Benzene	2.757	2.969	0.010	AVRG	7.7	
1,2-Dichlorobenzene	1.308	1.268	0.010	AVRG	-3.0	
1,2-Dibromo 3-Chloropropane	0.053	0.050	0.010	AVRG	-5.7	
1,2,4-Trichlorobenzene	0.873	0.868	0.010	AVRG	-0.6	
Hexachloro 1,3-Butadiene	0.458	0.496	0.010	AVRG	8.3	
Naphthalene	1.126	1.076	0.010	AVRG	-4.4	
1,2,3-Trichlorobenzene	0.646	0.631	0.010	AVRG	-2.3	
Dichlorodifluoromethane	0.556	0.563	0.010	AVRG	1.2	
Methyl tert butyl ether	0.926	0.860	0.010	AVRG	-7.1	

<- 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: TK57 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: NT3 — Cont. Calib. Date: 09/01/11

Init. Calib. Date: 09/01/11 — Cont. Calib. Time: 1712

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.362	0.353	0.010	AVRG	-2.5
d8-Toluene	1.273	1.294	0.010	AVRG	1.6
4-Bromofluorobenzene	0.508	0.515	0.010	AVRG	1.4
d4-1,2-Dichlorobenzene	0.841	0.814	0.010	AVRG	-3.2
Dibromofluoromethane	0.442	0.445	0.010	AVRG	0.7

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

FORM VII VOA

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK57 — Project: FRP SHORELINE INVESTIGATION

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

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

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	220246	5.25	342057	5.64	343287	7.71
	UPPER LIMIT	440492	5.75	684114	6.14	686574	8.21
	LOWER LIMIT	110123	4.75	171028	5.14	171644	7.21
	Sample ID						
01	LCS0901	213058	5.25	338009	5.64	336401	7.71
02	LCS0901	211505	5.26	329586	5.65	326925	7.72
03	MB0901	218581	5.25	331782	5.64	326401	7.71
04	TRIP BLANKS	213968	5.25	328134	5.64	321982	7.71
05	TRIP BLANK	212569	5.25	323088	5.64	319510	7.71
06	FRP-083111-0	206638	5.25	307073	5.64	315278	7.71
07	FRP-083111-0	211831	5.25	328673	5.64	334076	7.71
08	FRP-083111-0	211775	5.25	324032	5.65	329324	7.71
09	FRP-083111-0	214734	5.25	328273	5.64	329592	7.71
10	FRP-083111-0	223430	5.25	332765	5.64	327934	7.71
11	FRP-083111-0	212788	5.25	333782	5.64	326958	7.72
12	FRP-083011-0	217004	5.26	337335	5.65	342143	7.71
13							
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: TK57 — Project: FRP SHORELINE INVESTIGATION

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

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

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	212149	9.41				
	UPPER LIMIT	424298	9.91				
	LOWER LIMIT	106074	8.91				
	Sample ID						
01	LCS0901	210931	9.41				
02	LCS0901	210382	9.41				
03	MB0901	199673	9.41				
04	TRIP BLANKS	200670	9.41				
05	TRIP BLANK	197902	9.41				
06	FRP-083111-0	199738	9.41				
07	FRP-083111-0	201993	9.41				
08	FRP-083111-0	206016	9.41				
09	FRP-083111-0	203142	9.41				
10	FRP-083111-0	204863	9.41				
11	FRP-083111-0	199427	9.41				
12	FRP-083011-0	204125	9.41				
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

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

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

* Values outside of QC limits.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-021**
 SAMPLE

Lab Sample ID: TK51A
LIMS ID: 11-18889
Matrix: Soil
Data Release Authorized: MW
Reported: 09/08/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/05/11 22:34

Sample Amount: 4.64 g-dry-wt
Percent Moisture: 7.8%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.28	1.1	< 1.1 U
74-83-9	Bromomethane	0.20	1.1	< 1.1 U
75-01-4	Vinyl Chloride	0.25	1.1	< 1.1 U
75-00-3	Chloroethane	0.50	1.1	< 1.1 U
75-09-2	Methylene Chloride	0.68	2.2	< 2.2 U
67-64-1	**Acetone**	**0.52**	**5.4**	**39 B**
75-15-0	**Carbon Disulfide**	**0.60**	**1.1**	**1.5**
75-35-4	1,1-Dichloroethene	0.36	1.1	< 1.1 U
75-34-3	1,1-Dichloroethane	0.22	1.1	< 1.1 U
156-60-5	trans-1,2-Dichloroethene	0.29	1.1	< 1.1 U
156-59-2	cis-1,2-Dichloroethene	0.26	1.1	< 1.1 U
67-66-3	Chloroform	0.25	1.1	< 1.1 U
107-06-2	1,2-Dichloroethane	0.21	1.1	< 1.1 U
78-93-3	2-Butanone	0.55	5.4	< 5.4 U
71-55-6	1,1,1-Trichloroethane	0.24	1.1	< 1.1 U
56-23-5	Carbon Tetrachloride	0.23	1.1	< 1.1 U
108-05-4	Vinyl Acetate	0.41	5.4	< 5.4 U
75-27-4	Bromodichloromethane	0.27	1.1	< 1.1 U
78-87-5	1,2-Dichloropropane	0.17	1.1	< 1.1 U
10061-01-5	cis-1,3-Dichloropropene	0.24	1.1	< 1.1 U
79-01-6	Trichloroethene	0.23	1.1	< 1.1 U
124-48-1	Dibromochloromethane	0.29	1.1	< 1.1 U
79-00-5	1,1,2-Trichloroethane	0.31	1.1	< 1.1 U
71-43-2	**Benzene**	**0.32**	**1.1**	**1.0 J**
10061-02-6	trans-1,3-Dichloropropene	0.23	1.1	< 1.1 U
110-75-8	2-Chloroethylvinylether	0.30	5.4	< 5.4 U
75-25-2	Bromoform	0.32	1.1	< 1.1 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.45	5.4	< 5.4 U
591-78-6	2-Hexanone	0.47	5.4	< 5.4 U
127-18-4	Tetrachloroethene	0.28	1.1	< 1.1 U
79-34-5	1,1,2,2-Tetrachloroethane	0.27	1.1	< 1.1 U
108-88-3	**Toluene**	**0.16**	**1.1**	**1.8**
108-90-7	Chlorobenzene	0.24	1.1	< 1.1 U
100-41-4	Ethylbenzene	0.22	1.1	< 1.1 U
100-42-5	Styrene	0.15	1.1	< 1.1 U
75-69-4	Trichlorofluoromethane	0.29	1.1	< 1.1 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.31	2.2	< 2.2 U
179601-23-1	m,p-Xylene	0.42	1.1	< 1.1 U
95-47-6	o-Xylene	0.24	1.1	< 1.1 U
95-50-1	1,2-Dichlorobenzene	0.32	1.1	< 1.1 U
541-73-1	1,3-Dichlorobenzene	0.24	1.1	< 1.1 U
106-46-7	1,4-Dichlorobenzene	0.25	1.1	< 1.1 U
107-02-8	Acrolein	4.1	54	< 54 U
74-88-4	Methyl Iodide	0.23	1.1	< 1.1 U
74-96-4	Bromoethane	0.47	2.2	< 2.2 U
107-13-1	Acrylonitrile	1.1	5.4	< 5.4 U
563-58-6	1,1-Dichloropropene	0.34	1.1	< 1.1 U
74-95-3	Dibromomethane	0.16	1.1	< 1.1 U
630-20-6	1,1,1,2-Tetrachloroethane	0.25	1.1	< 1.1 U
96-12-8	1,2-Dibromo-3-chloropropane	0.63	5.4	< 5.4 U

CM 2/24/12

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-021
SAMPLE

Lab Sample ID: TK51A
LIMS ID: 11-18889
Matrix: Soil
Date Analyzed: 09/05/11 22:34

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.56	2.2	< 2.2 U
110-57-6	trans-1,4-Dichloro-2-butene	0.47	5.4	< 5.4 U
108-67-8	1,3,5-Trimethylbenzene	0.27	1.1	< 1.1 U
95-63-6	1,2,4-Trimethylbenzene	0.25	1.1	< 1.1 U
87-68-3	Hexachlorobutadiene	0.44	5.4	< 5.4 U
106-93-4	Ethylene Dibromide	0.19	1.1	< 1.1 U
74-97-5	Bromochloromethane	0.35	1.1	< 1.1 U
594-20-7	2,2-Dichloropropane	0.31	1.1	< 1.1 U
142-28-9	1,3-Dichloropropane	0.23	1.1	< 1.1 U
98-82-8	Isopropylbenzene	0.25	1.1	< 1.1 U
103-65-1	n-Propylbenzene	0.29	1.1	< 1.1 U
108-86-1	Bromobenzene	0.16	1.1	< 1.1 U
95-49-8	2-Chlorotoluene	0.32	1.1	< 1.1 U
106-43-4	4-Chlorotoluene	0.30	1.1	< 1.1 U
98-06-6	tert-Butylbenzene	0.33	1.1	< 1.1 U
135-98-8	sec-Butylbenzene	0.26	1.1	< 1.1 U
99-87-6	4-Isopropyltoluene	0.25	1.1	< 1.1 U
104-51-8	n-Butylbenzene	0.28	1.1	< 1.1 U
120-82-1	1,2,4-Trichlorobenzene	0.36	5.4	< 5.4 U
91-20-3	Naphthalene	0.46	5.4	< 5.4 U
87-61-6	1,2,3-Trichlorobenzene	0.33	5.4	< 5.4 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	114%
d8-Toluene	101%
Bromofluorobenzene	89.0%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-022**
 SAMPLE

Lab Sample ID: TK51B
LIMS ID: 11-18890
Matrix: Soil
Data Release Authorized:
Reported: 09/08/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/05/11 23:02

Sample Amount: 3.17 g-dry-wt
Percent Moisture: 11.6%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.41	1.6	< 1.6 U
74-83-9	Bromomethane	0.29	1.6	< 1.6 U
75-01-4	Vinyl Chloride	0.37	1.6	< 1.6 U
75-00-3	Chloroethane	0.73	1.6	< 1.6 U
75-09-2	Methylene Chloride	1.0	3.2	< 3.2 U
67-64-1	**Acetone**	**0.76**	**7.9**	**50 B**
75-15-0	Carbon Disulfide	0.88	1.6	< 1.6 U
75-35-4	1,1-Dichloroethene	0.53	1.6	< 1.6 U
75-34-3	1,1-Dichloroethane	0.32	1.6	< 1.6 U
156-60-5	trans-1,2-Dichloroethene	0.42	1.6	< 1.6 U
156-59-2	cis-1,2-Dichloroethene	0.38	1.6	< 1.6 U
67-66-3	Chloroform	0.37	1.6	< 1.6 U
107-06-2	1,2-Dichloroethane	0.30	1.6	< 1.6 U
78-93-3	**2-Butanone**	**0.81**	**7.9**	**4.6 J**
71-55-6	1,1,1-Trichloroethane	0.36	1.6	< 1.6 U
56-23-5	Carbon Tetrachloride	0.34	1.6	< 1.6 U
108-05-4	Vinyl Acetate	0.60	7.9	< 7.9 U
75-27-4	Bromodichloromethane	0.40	1.6	< 1.6 U
78-87-5	1,2-Dichloropropane	0.26	1.6	< 1.6 U
10061-01-5	cis-1,3-Dichloropropene	0.36	1.6	< 1.6 U
79-01-6	Trichloroethene	0.33	1.6	< 1.6 U
124-48-1	Dibromochloromethane	0.42	1.6	< 1.6 U
79-00-5	1,1,2-Trichloroethane	0.45	1.6	< 1.6 U
71-43-2	**Benzene**	**0.47**	**1.6**	**1.8**
10061-02-6	trans-1,3-Dichloropropene	0.34	1.6	< 1.6 U
110-75-8	2-Chloroethylvinylether	0.44	7.9	< 7.9 U
75-25-2	Bromoform	0.47	1.6	< 1.6 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.66	7.9	< 7.9 U
591-78-6	2-Hexanone	0.69	7.9	< 7.9 U
127-18-4	Tetrachloroethene	0.41	1.6	< 1.6 U
79-34-5	1,1,2,2-Tetrachloroethane	0.40	1.6	< 1.6 U
108-88-3	Toluene	0.24	1.6	< 1.6 U
108-90-7	Chlorobenzene	0.35	1.6	< 1.6 U
100-41-4	Ethylbenzene	0.32	1.6	< 1.6 U
100-42-5	Styrene	0.22	1.6	< 1.6 U
75-69-4	Trichlorofluoromethane	0.42	1.6	< 1.6 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.45	3.2	< 3.2 U
179601-23-1	m,p-Xylene	0.62	1.6	< 1.6 U
95-47-6	o-Xylene	0.35	1.6	< 1.6 U
95-50-1	1,2-Dichlorobenzene	0.46	1.6	< 1.6 U
541-73-1	1,3-Dichlorobenzene	0.36	1.6	< 1.6 U
106-46-7	1,4-Dichlorobenzene	0.37	1.6	< 1.6 U
107-02-8	Acrolein	6.0	79	< 79 U
74-88-4	Methyl Iodide	0.34	1.6	< 1.6 U
74-96-4	Bromoethane	0.69	3.2	< 3.2 U
107-13-1	Acrylonitrile	1.6	7.9	< 7.9 U
563-58-6	1,1-Dichloropropene	0.49	1.6	< 1.6 U
74-95-3	Dibromomethane	0.23	1.6	< 1.6 U
630-20-6	1,1,1,2-Tetrachloroethane	0.37	1.6	< 1.6 U
96-12-8	1,2-Dibromo-3-chloropropane	0.92	7.9	< 7.9 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-022
SAMPLE

Lab Sample ID: TK51B
LIMS ID: 11-18890
Matrix: Soil
Date Analyzed: 09/05/11 23:02

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.82	3.2	< 3.2 U
110-57-6	trans-1,4-Dichloro-2-butene	0.69	7.9	< 7.9 U
108-67-8	1,3,5-Trimethylbenzene	0.40	1.6	< 1.6 U
95-63-6	1,2,4-Trimethylbenzene	0.36	1.6	< 1.6 U
87-68-3	Hexachlorobutadiene	0.65	7.9	< 7.9 U
106-93-4	Ethylene Dibromide	0.28	1.6	< 1.6 U
74-97-5	Bromochloromethane	0.51	1.6	< 1.6 U
594-20-7	2,2-Dichloropropane	0.46	1.6	< 1.6 U
142-28-9	1,3-Dichloropropane	0.33	1.6	< 1.6 U
98-82-8	Isopropylbenzene	0.37	1.6	< 1.6 U
103-65-1	n-Propylbenzene	0.43	1.6	< 1.6 U
108-86-1	Bromobenzene	0.24	1.6	< 1.6 U
95-49-8	2-Chlorotoluene	0.47	1.6	< 1.6 U
106-43-4	4-Chlorotoluene	0.44	1.6	< 1.6 U
98-06-6	tert-Butylbenzene	0.48	1.6	< 1.6 U
135-98-8	sec-Butylbenzene	0.38	1.6	< 1.6 U
99-87-6	4-Isopropyltoluene	0.37	1.6	< 1.6 U
104-51-8	n-Butylbenzene	0.41	1.6	< 1.6 U
120-82-1	1,2,4-Trichlorobenzene	0.52	7.9	< 7.9 U
91-20-3	Naphthalene	0.68	7.9	< 7.9 U
87-61-6	1,2,3-Trichlorobenzene	0.48	7.9	< 7.9 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	117%
d8-Toluene	105%
Bromofluorobenzene	96.4%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-023**
 SAMPLE

Lab Sample ID: TK51C
LIMS ID: 11-18891
Matrix: Soil
Data Release Authorized:
Reported: 09/08/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/05/11 23:29

Sample Amount: 3.34 g-dry-wt
Percent Moisture: 11.8%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.39	1.5	< 1.5 U
74-83-9	Bromomethane	0.28	1.5	< 1.5 U
75-01-4	Vinyl Chloride	0.35	1.5	< 1.5 U
75-00-3	Chloroethane	0.69	1.5	< 1.5 U
75-09-2	Methylene Chloride	0.95	3.0	< 3.0 U
67-64-1	**Acetone**	**0.72**	**7.5**	**42 B**
75-15-0	Carbon Disulfide	0.84	1.5	< 1.5 U
75-35-4	1,1-Dichloroethene	0.50	1.5	< 1.5 U
75-34-3	1,1-Dichloroethane	0.30	1.5	< 1.5 U
156-60-5	trans-1,2-Dichloroethene	0.40	1.5	< 1.5 U
156-59-2	cis-1,2-Dichloroethene	0.36	1.5	< 1.5 U
67-66-3	Chloroform	0.35	1.5	< 1.5 U
107-06-2	1,2-Dichloroethane	0.29	1.5	< 1.5 U
78-93-3	**2-Butanone**	**0.77**	**7.5**	**3.7 J**
71-55-6	1,1,1-Trichloroethane	0.34	1.5	< 1.5 U
56-23-5	Carbon Tetrachloride	0.32	1.5	< 1.5 U
108-05-4	Vinyl Acetate	0.57	7.5	< 7.5 U
75-27-4	Bromodichloromethane	0.38	1.5	< 1.5 U
78-87-5	1,2-Dichloropropane	0.24	1.5	< 1.5 U
10061-01-5	cis-1,3-Dichloropropene	0.34	1.5	< 1.5 U
79-01-6	Trichloroethene	0.32	1.5	< 1.5 U
124-48-1	Dibromochloromethane	0.40	1.5	< 1.5 U
79-00-5	1,1,2-Trichloroethane	0.43	1.5	< 1.5 U
71-43-2	**Benzene**	**0.44**	**1.5**	**0.8 J**
10061-02-6	trans-1,3-Dichloropropene	0.32	1.5	< 1.5 U
110-75-8	2-Chloroethylvinylether	0.41	7.5	< 7.5 U
75-25-2	Bromoform	0.44	1.5	< 1.5 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.63	7.5	< 7.5 U
591-78-6	2-Hexanone	0.66	7.5	< 7.5 U
127-18-4	Tetrachloroethene	0.38	1.5	< 1.5 U
79-34-5	1,1,2,2-Tetrachloroethane	0.38	1.5	< 1.5 U
108-88-3	Toluene	0.23	1.5	< 1.5 U
108-90-7	Chlorobenzene	0.33	1.5	< 1.5 U
100-41-4	Ethylbenzene	0.30	1.5	< 1.5 U
100-42-5	Styrene	0.21	1.5	< 1.5 U
75-69-4	Trichlorofluoromethane	0.40	1.5	< 1.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.43	3.0	< 3.0 U
179601-23-1	m,p-Xylene	0.59	1.5	< 1.5 U
95-47-6	o-Xylene	0.34	1.5	< 1.5 U
95-50-1	1,2-Dichlorobenzene	0.44	1.5	< 1.5 U
541-73-1	1,3-Dichlorobenzene	0.34	1.5	< 1.5 U
106-46-7	1,4-Dichlorobenzene	0.35	1.5	< 1.5 U
107-02-8	Acrolein	5.7	75	< 75 U
74-88-4	Methyl Iodide	0.32	1.5	< 1.5 U
74-96-4	Bromoethane	0.66	3.0	< 3.0 U
107-13-1	Acrylonitrile	1.5	7.5	< 7.5 U
563-58-6	1,1-Dichloropropene	0.47	1.5	< 1.5 U
74-95-3	Dibromomethane	0.22	1.5	< 1.5 U
630-20-6	1,1,1,2-Tetrachloroethane	0.35	1.5	< 1.5 U
96-12-8	1,2-Dibromo-3-chloropropane	0.88	7.5	< 7.5 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-023
SAMPLE

Lab Sample ID: TK51C
LIMS ID: 11-18891
Matrix: Soil
Date Analyzed: 09/05/11 23:29

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.77	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	0.65	7.5	< 7.5 U
108-67-8	1,3,5-Trimethylbenzene	0.38	1.5	< 1.5 U
95-63-6	1,2,4-Trimethylbenzene	0.34	1.5	< 1.5 U
87-68-3	Hexachlorobutadiene	0.61	7.5	< 7.5 U
106-93-4	Ethylene Dibromide	0.26	1.5	< 1.5 U
74-97-5	Bromochloromethane	0.48	1.5	< 1.5 U
594-20-7	2,2-Dichloropropane	0.44	1.5	< 1.5 U
142-28-9	1,3-Dichloropropane	0.31	1.5	< 1.5 U
98-82-8	Isopropylbenzene	0.35	1.5	< 1.5 U
103-65-1	n-Propylbenzene	0.41	1.5	< 1.5 U
108-86-1	Bromobenzene	0.23	1.5	< 1.5 U
95-49-8	2-Chlorotoluene	0.45	1.5	< 1.5 U
106-43-4	4-Chlorotoluene	0.41	1.5	< 1.5 U
98-06-6	tert-Butylbenzene	0.46	1.5	< 1.5 U
135-98-8	sec-Butylbenzene	0.36	1.5	< 1.5 U
99-87-6	4-Isopropyltoluene	0.35	1.5	< 1.5 U
104-51-8	n-Butylbenzene	0.39	1.5	< 1.5 U
120-82-1	1,2,4-Trichlorobenzene	0.50	7.5	< 7.5 U
91-20-3	Naphthalene	0.64	7.5	< 7.5 U
87-61-6	1,2,3-Trichlorobenzene	0.46	7.5	< 7.5 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	115%
d8-Toluene	103%
Bromofluorobenzene	96.1%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-024**
 SAMPLE

Lab Sample ID: TK51D
LIMS ID: 11-18892
Matrix: Soil
Data Release Authorized:
Reported: 09/08/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/05/11 23:56

Sample Amount: 4.14 g-dry-wt
Percent Moisture: 17.2%

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 U
75-01-4	Vinyl Chloride	0.28	1.2	< 1.2 U
75-00-3	Chloroethane	0.56	1.2	< 1.2 U
75-09-2	Methylene Chloride	0.77	2.4	< 2.4 U
67-64-1	**Acetone**	**0.58**	**6.0**	**29 B**
75-15-0	Carbon Disulfide	0.68	1.2	< 1.2 U
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	0.32	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**	**0.62**	**6.0**	**3.0 J**
71-55-6	1,1,1-Trichloroethane	0.27	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.26	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.46	6.0	< 6.0 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	0.27	1.2	< 1.2 U
79-01-6	Trichloroethene	0.26	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.32	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**	**1.3**
10061-02-6	trans-1,3-Dichloropropene	0.26	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.33	6.0	< 6.0 U
75-25-2	Bromoform	0.36	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.51	6.0	< 6.0 U
591-78-6	2-Hexanone	0.53	6.0	< 6.0 U
127-18-4	Tetrachloroethene	0.31	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.31	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	0.17	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	0.35	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	4.6	60	< 60 U
74-88-4	Methyl Iodide	0.26	1.2	< 1.2 U
74-96-4	Bromoethane	0.53	2.4	< 2.4 U
107-13-1	Acrylonitrile	1.2	6.0	< 6.0 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	0.28	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.71	6.0	< 6.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-024
SAMPLE

Lab Sample ID: TK51D
LIMS ID: 11-18892
Matrix: Soil
Date Analyzed: 09/05/11 23:56

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.62	2.4	< 2.4 U
110-57-6	trans-1,4-Dichloro-2-butene	0.53	6.0	< 6.0 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	6.0	< 6.0 U
106-93-4	Ethylene Dibromide	0.21	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.39	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	0.33	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	0.37	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	0.40	6.0	< 6.0 U
91-20-3	Naphthalene	0.52	6.0	< 6.0 U
87-61-6	1,2,3-Trichlorobenzene	0.37	6.0	< 6.0 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	115%
d8-Toluene	103%
Bromofluorobenzene	94.4%
d4-1,2-Dichlorobenzene	103%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-025**
 SAMPLE

Lab Sample ID: TK51E
LIMS ID: 11-18893
Matrix: Soil
Data Release Authorized:
Reported: 09/08/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 00:24

Sample Amount: 2.91 g-dry-wt
Percent Moisture: 26.8%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.45	1.7	< 1.7 U
74-83-9	Bromomethane	0.32	1.7	< 1.7 U
75-01-4	Vinyl Chloride	0.40	1.7	< 1.7 U
75-00-3	Chloroethane	0.79	1.7	< 1.7 U
75-09-2	Methylene Chloride	1.1	3.4	< 3.4 U
67-64-1	**Acetone**	**0.83**	**8.6**	**18 B**
75-15-0	**Carbon Disulfide**	**0.96**	**1.7**	**3.7**
75-35-4	1,1-Dichloroethene	0.58	1.7	< 1.7 U
75-34-3	1,1-Dichloroethane	0.35	1.7	< 1.7 U
156-60-5	trans-1,2-Dichloroethene	0.46	1.7	< 1.7 U
156-59-2	cis-1,2-Dichloroethene	0.41	1.7	< 1.7 U
67-66-3	Chloroform	0.40	1.7	< 1.7 U
107-06-2	1,2-Dichloroethane	0.33	1.7	< 1.7 U
78-93-3	2-Butanone	0.88	8.6	< 8.6 U
71-55-6	1,1,1-Trichloroethane	0.39	1.7	< 1.7 U
56-23-5	Carbon Tetrachloride	0.37	1.7	< 1.7 U
108-05-4	Vinyl Acetate	0.65	8.6	< 8.6 U
75-27-4	Bromodichloromethane	0.44	1.7	< 1.7 U
78-87-5	1,2-Dichloropropane	0.28	1.7	< 1.7 U
10061-01-5	cis-1,3-Dichloropropene	0.39	1.7	< 1.7 U
79-01-6	Trichloroethene	0.36	1.7	< 1.7 U
124-48-1	Dibromochloromethane	0.46	1.7	< 1.7 U
79-00-5	1,1,2-Trichloroethane	0.49	1.7	< 1.7 U
71-43-2	**Benzene**	**0.51**	**1.7**	**0.9 J**
10061-02-6	trans-1,3-Dichloropropene	0.37	1.7	< 1.7 U
110-75-8	2-Chloroethylvinylether	0.47	8.6	< 8.6 U
75-25-2	Bromoform	0.51	1.7	< 1.7 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.72	8.6	< 8.6 U
591-78-6	2-Hexanone	0.75	8.6	< 8.6 U
127-18-4	Tetrachloroethene	0.44	1.7	< 1.7 U
79-34-5	1,1,2,2-Tetrachloroethane	0.43	1.7	< 1.7 U
108-88-3	Toluene	0.26	1.7	< 1.7 U
108-90-7	Chlorobenzene	0.38	1.7	< 1.7 U
100-41-4	Ethylbenzene	0.35	1.7	< 1.7 U
100-42-5	Styrene	0.24	1.7	< 1.7 U
75-69-4	Trichlorofluoromethane	0.46	1.7	< 1.7 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.49	3.4	< 3.4 U
179601-23-1	m,p-Xylene	0.67	1.7	< 1.7 U
95-47-6	o-Xylene	0.38	1.7	< 1.7 U
95-50-1	1,2-Dichlorobenzene	0.50	1.7	< 1.7 U
541-73-1	1,3-Dichlorobenzene	0.39	1.7	< 1.7 U
106-46-7	1,4-Dichlorobenzene	0.40	1.7	< 1.7 U
107-02-8	Acrolein	6.5	86	< 86 U
74-88-4	Methyl Iodide	0.37	1.7	< 1.7 U
74-96-4	Bromoethane	0.76	3.4	< 3.4 U
107-13-1	Acrylonitrile	1.8	8.6	< 8.6 U
563-58-6	1,1-Dichloropropene	0.54	1.7	< 1.7 U
74-95-3	Dibromomethane	0.25	1.7	< 1.7 U
630-20-6	1,1,1,2-Tetrachloroethane	0.40	1.7	< 1.7 U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	8.6	< 8.6 U

FORM I

TK51 : 00058

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-025**
 SAMPLE

Lab Sample ID: TK51E
LIMS ID: 11-18893
Matrix: Soil
Date Analyzed: 09/06/11 00:24

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.89	3.4	< 3.4 U
110-57-6	trans-1,4-Dichloro-2-butene	0.75	8.6	< 8.6 U
108-67-8	1,3,5-Trimethylbenzene	0.44	1.7	< 1.7 U
95-63-6	1,2,4-Trimethylbenzene	0.40	1.7	< 1.7 U
87-68-3	Hexachlorobutadiene	0.70	8.6	< 8.6 U
106-93-4	Ethylene Dibromide	0.30	1.7	< 1.7 U
74-97-5	Bromochloromethane	0.55	1.7	< 1.7 U
594-20-7	2,2-Dichloropropane	0.50	1.7	< 1.7 U
142-28-9	1,3-Dichloropropane	0.36	1.7	< 1.7 U
98-82-8	Isopropylbenzene	0.40	1.7	< 1.7 U
103-65-1	n-Propylbenzene	0.47	1.7	< 1.7 U
108-86-1	Bromobenzene	0.26	1.7	< 1.7 U
95-49-8	2-Chlorotoluene	0.52	1.7	< 1.7 U
106-43-4	4-Chlorotoluene	0.48	1.7	< 1.7 U
98-06-6	tert-Butylbenzene	0.53	1.7	< 1.7 U
135-98-8	sec-Butylbenzene	0.41	1.7	< 1.7 U
99-87-6	4-Isopropyltoluene	0.41	1.7	< 1.7 U
104-51-8	n-Butylbenzene	0.45	1.7	< 1.7 U
120-82-1	1,2,4-Trichlorobenzene	0.57	8.6	< 8.6 U
91-20-3	Naphthalene	0.74	8.6	< 8.6 U
87-61-6	1,2,3-Trichlorobenzene	0.52	8.6	< 8.6 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	102%
Bromofluorobenzene	95.6%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-026**
 SAMPLE

Lab Sample ID: TK51F
LIMS ID: 11-18894
Matrix: Soil
Data Release Authorized:
Reported: 09/08/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 13:03

Sample Amount: 4.26 g-dry-wt
Percent Moisture: 20.2%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.31	1.2	< 1.2 U
74-83-9	Bromomethane	0.22	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.28	1.2	< 1.2 U
75-00-3	Chloroethane	0.54	1.2	< 1.2 U
75-09-2	Methylene Chloride	0.75	2.3	< 2.3 U
67-64-1	**Acetone**	**0.57**	**5.9**	**13**
75-15-0	**Carbon Disulfide**	**0.66**	**1.2**	**2.6**
75-35-4	1,1-Dichloroethene	0.39	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.24	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.31	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.28	1.2	< 1.2 U
67-66-3	Chloroform	0.27	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.22	1.2	< 1.2 U
78-93-3	2-Butanone	0.60	5.9	< 5.9 U
71-55-6	1,1,1-Trichloroethane	0.27	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.25	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.45	5.9	< 5.9 U
75-27-4	Bromodichloromethane	0.30	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.19	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.27	1.2	< 1.2 U
79-01-6	Trichloroethene	0.25	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.31	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.34	1.2	< 1.2 U
71-43-2	Benzene	0.35	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.25	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.32	5.9	< 5.9 U
75-25-2	Bromoform	0.35	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.49	5.9	< 5.9 U
591-78-6	2-Hexanone	0.52	5.9	< 5.9 U
127-18-4	Tetrachloroethene	0.30	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.30	1.2	< 1.2 U
108-88-3	Toluene	0.18	1.2	< 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	59	< 59 U
74-88-4	Methyl Iodide	0.25	1.2	< 1.2 U
74-96-4	Bromoethane	0.52	2.3	< 2.3 U
107-13-1	Acrylonitrile	1.2	5.9	< 5.9 U
563-58-6	1,1-Dichloropropene	0.37	1.2	< 1.2 U
74-95-3	Dibromomethane	0.17	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.27	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.69	5.9	< 5.9 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-026**
 SAMPLE

Lab Sample ID: TK51F
LIMS ID: 11-18894
Matrix: Soil
Date Analyzed: 09/06/11 13:03

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

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

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	101%
Bromofluorobenzene	94.7%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-027**
 SAMPLE

Lab Sample ID: TK51G
LIMS ID: 11-18895
Matrix: Soil
Data Release Authorized: MW
Reported: 09/08/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 13:36

Sample Amount: 4.26 g-dry-wt
Percent Moisture: 19.4%

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 U
75-01-4	Vinyl Chloride	0.28	1.2	< 1.2 U
75-00-3	Chloroethane	0.54	1.2	< 1.2 U
75-09-2	Methylene Chloride	0.75	2.3	< 2.3 U
67-64-1	**Acetone**	**0.57**	**5.9**	**13**
75-15-0	**Carbon Disulfide**	**0.66**	**1.2**	**15**
75-35-4	1,1-Dichloroethene	0.39	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.24	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.31	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.28	1.2	< 1.2 U
67-66-3	Chloroform	0.27	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.22	1.2	< 1.2 U
78-93-3	2-Butanone	0.60	5.9	< 5.9 U
71-55-6	1,1,1-Trichloroethane	0.27	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.25	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.45	5.9	< 5.9 U
75-27-4	Bromodichloromethane	0.30	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.19	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.27	1.2	< 1.2 U
79-01-6	Trichloroethene	0.25	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.31	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.34	1.2	< 1.2 U
71-43-2	Benzene	0.35	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.25	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.32	5.9	< 5.9 U
75-25-2	Bromoform	0.35	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.49	5.9	< 5.9 U
591-78-6	2-Hexanone	0.52	5.9	< 5.9 U
127-18-4	Tetrachloroethene	0.30	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.30	1.2	< 1.2 U
108-88-3	Toluene	0.18	1.2	< 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	59	< 59 U
74-88-4	Methyl Iodide	0.25	1.2	< 1.2 U
74-96-4	Bromoethane	0.52	2.3	< 2.3 U
107-13-1	Acrylonitrile	1.2	5.9	< 5.9 U
563-58-6	1,1-Dichloropropene	0.37	1.2	< 1.2 U
74-95-3	Dibromomethane	0.17	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.27	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.69	5.9	< 5.9 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-027**
 SAMPLE

Lab Sample ID: TK51G
LIMS ID: 11-18895
Matrix: Soil
Date Analyzed: 09/06/11 13:36

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

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

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	114%
d8-Toluene	104%
Bromofluorobenzene	96.3%
d4-1,2-Dichlorobenzene	103%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-028**
 SAMPLE

Lab Sample ID: TK51H
LIMS ID: 11-18896
Matrix: Soil
Data Release Authorized: TMW
Reported: 09/08/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011 8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 14:04

Sample Amount: 4.03 g-dry-wt
Percent Moisture: 19.3%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.33	1.2	< 1.2 U
74-83-9	Bromomethane	0.23	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.29	1.2	< 1.2 U
75-00-3	Chloroethane	0.57	1.2	< 1.2 U
75-09-2	Methylene Chloride	0.79	2.5	< 2.5 U
67-64-1	**Acetone**	**0.60**	**6.2**	**11**
75-15-0	**Carbon Disulfide**	**0.69**	**1.2**	**3.8**
75-35-4	1,1-Dichloroethene	0.42	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.25	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.33	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.30	1.2	< 1.2 U
67-66-3	Chloroform	0.29	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.24	1.2	< 1.2 U
78-93-3	2-Butanone	0.64	6.2	< 6.2 U
71-55-6	1,1,1-Trichloroethane	0.28	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.26	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.47	6.2	< 6.2 U
75-27-4	Bromodichloromethane	0.32	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.20	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.28	1.2	< 1.2 U
79-01-6	Trichloroethene	0.26	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.33	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.35	1.2	< 1.2 U
71-43-2	Benzene	0.37	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.27	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.34	6.2	< 6.2 U
75-25-2	Bromoform	0.37	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.52	6.2	< 6.2 U
591-78-6	2-Hexanone	0.54	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**	**1.9**
108-90-7	Chlorobenzene	0.27	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.25	1.2	< 1.2 U
100-42-5	Styrene	0.17	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.33	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.36	2.5	< 2.5 U
179601-23-1	m,p-Xylene	0.49	1.2	< 1.2 U
95-47-6	o-Xylene	0.28	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.36	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.28	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.29	1.2	< 1.2 U
107-02-8	Acrolein	4.7	62	< 62 U
74-88-4	Methyl Iodide	0.27	1.2	< 1.2 U
74-96-4	Bromoethane	0.55	2.5	< 2.5 U
107-13-1	Acrylonitrile	1.3	6.2	< 6.2 U
563-58-6	1,1-Dichloropropene	0.39	1.2	< 1.2 U
74-95-3	Dibromomethane	0.18	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.29	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.73	6.2	< 6.2 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-028
SAMPLE

Lab Sample ID: TK51H
LIMS ID: 11-18896
Matrix: Soil
Date Analyzed: 09/06/11 14:04

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

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

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	111%
d8-Toluene	104%
Bromofluorobenzene	96.8%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-029**
 SAMPLE

Lab Sample ID: TK51I
LIMS ID: 11-18897
Matrix: Soil
Data Release Authorized:
Reported: 09/08/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 14:33

Sample Amount: 3.93 g-dry-wt
Percent Moisture: 20.2%

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**	**9.8**
75-15-0	**Carbon Disulfide**	**0.71**	**1.3**	**2.7**
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	< 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**	**1.6**
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-083011-029**
 SAMPLE

Lab Sample ID: TK51I
LIMS ID: 11-18897
Matrix: Soil
Date Analyzed: 09/06/11 14:33

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
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	< 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	0.55	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	112%
d8-Toluene	103%
Bromofluorobenzene	96.1%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-090511	Method Blank	Low	93.7%	99.8%	94.5%	97.5%	0
LCS-090511	Lab Control	Low	87.6%	101%	97.4%	98.0%	0
LCSD-090511	Lab Control Dup	Low	91.0%	103%	98.2%	98.5%	0
TK51A	FRP-083011-021	Low	114%	101%	89.0%	101%	0
TK51B	FRP-083011-022	Low	117%	105%	96.4%	102%	0
TK51C	FRP-083011-023	Low	115%	103%	96.1%	102%	0
TK51D	FRP-083011-024	Low	115%	103%	94.4%	103%	0
TK51E	FRP-083011-025	Low	112%	102%	95.6%	104%	0
MB-090611	Method Blank	Low	102%	102%	95.7%	99.4%	0
LCS-090611	Lab Control	Low	94.1%	101%	97.8%	102%	0
LCSD-090611	Lab Control Dup	Low	97.9%	104%	99.1%	102%	0
TK51F	FRP-083011-026	Low	108%	101%	94.7%	101%	0
TK51G	FRP-083011-027	Low	114%	104%	96.3%	103%	0
TK51H	FRP-083011-028	Low	111%	104%	96.8%	102%	0
TK51I	FRP-083011-029	Low	112%	103%	96.1%	104%	0

SW8260C	LCS/MB LIMITS Low	LCS/MB LIMITS Med	QC LIMITS Low	QC LIMITS 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: 11-18889 to 11-18897

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-090511**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-090511
LIMS ID: 11-18889
Matrix: Soil
Data Release Authorized:
Reported: 09/08/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: FINN5/PAB
LCSD: FINN5/PAB
Date Analyzed LCS: 09/05/11 14:48
LCSD: 09/05/11 15:22

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	43.3	50.0	86.6%	50.0	50.0	100%	14.4%
Bromomethane	48.5	50.0	97.0%	56.0	50.0	112%	14.4%
Vinyl Chloride	40.7	50.0	81.4%	45.5	50.0	91.0%	11.1%
Chloroethane	46.7	50.0	93.4%	56.1	50.0	112%	18.3%
Methylene Chloride	51.6 B	50.0	103%	58.7 B	50.0	117%	12.9%
Acetone	179 B	250	71.6%	192 B	250	76.8%	7.0%
Carbon Disulfide	47.8	50.0	95.6%	54.7	50.0	109%	13.5%
1,1-Dichloroethene	46.1	50.0	92.2%	52.7	50.0	105%	13.4%
1,1-Dichloroethane	47.6	50.0	95.2%	54.2	50.0	108%	13.0%
trans-1,2-Dichloroethene	46.5	50.0	93.0%	52.6	50.0	105%	12.3%
cis-1,2-Dichloroethene	49.8	50.0	99.6%	55.2	50.0	110%	10.3%
Chloroform	46.8	50.0	93.6%	50.8	50.0	102%	8.2%
1,2-Dichloroethane	37.5	50.0	75.0%	41.7	50.0	83.4%	10.6%
2-Butanone	195	250	78.0%	211	250	84.4%	7.9%
1,1,1-Trichloroethane	44.8	50.0	89.6%	50.8	50.0	102%	12.6%
Carbon Tetrachloride	42.2	50.0	84.4%	47.1	50.0	94.2%	11.0%
Vinyl Acetate	44.6	50.0	89.2%	52.1	50.0	104%	15.5%
Bromodichloromethane	44.1	50.0	88.2%	49.2	50.0	98.4%	10.9%
1,2-Dichloropropane	45.0	50.0	90.0%	50.7	50.0	101%	11.9%
cis-1,3-Dichloropropene	46.8	50.0	93.6%	51.6	50.0	103%	9.8%
Trichloroethene	44.4	50.0	88.8%	50.6	50.0	101%	13.1%
Dibromochloromethane	46.2	50.0	92.4%	49.4	50.0	98.8%	6.7%
1,1,2-Trichloroethane	43.7	50.0	87.4%	48.4	50.0	96.8%	10.2%
Benzene	45.3	50.0	90.6%	51.8	50.0	104%	13.4%
trans-1,3-Dichloropropene	45.3	50.0	90.6%	50.6	50.0	101%	11.1%
2-Chloroethylvinylether	89.9 Q	50.0	180%	94.4 Q	50.0	189%	4.9%
Bromoform	44.0	50.0	88.0%	44.7	50.0	89.4%	1.6%
4-Methyl-2-Pentanone (MIBK)	196	250	78.4%	216	250	86.4%	9.7%
2-Hexanone	195	250	78.0%	208	250	83.2%	6.5%
Tetrachloroethene	47.4	50.0	94.8%	51.5	50.0	103%	8.3%
1,1,2,2-Tetrachloroethane	41.0	50.0	82.0%	42.9	50.0	85.8%	4.5%
Toluene	46.0	50.0	92.0%	51.9	50.0	104%	12.1%
Chlorobenzene	47.9	50.0	95.8%	51.8	50.0	104%	7.8%
Ethylbenzene	47.6	50.0	95.2%	51.3	50.0	103%	7.5%
Styrene	47.4	50.0	94.8%	51.3	50.0	103%	7.9%
Trichlorofluoromethane	48.4	50.0	96.8%	55.9	50.0	112%	14.4%
1,1,2-Trichloro-1,2,2-trifluoroetha	51.9	50.0	104%	59.1	50.0	118%	13.0%
m,p-Xylene	93.1	100	93.1%	102	100	102%	9.1%
o-Xylene	47.8	50.0	95.6%	51.9	50.0	104%	8.2%
1,2-Dichlorobenzene	48.0	50.0	96.0%	50.1	50.0	100%	4.3%
1,3-Dichlorobenzene	48.6	50.0	97.2%	50.7	50.0	101%	4.2%
1,4-Dichlorobenzene	49.1	50.0	98.2%	51.1	50.0	102%	4.0%
Acrolein	204	250	81.6%	228	250	91.2%	11.1%
Methyl Iodide	51.1	50.0	102%	58.5	50.0	117%	13.5%
Bromoethane	47.9	50.0	95.8%	54.6	50.0	109%	13.1%
Acrylonitrile	40.5	50.0	81.0%	45.3	50.0	90.6%	11.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: LCS-090511
  LAB CONTROL SAMPLE

Lab Sample ID: LCS-090511 QC Report No: TK51-AMEC Geomatrix
LIMS ID: 11-18889 Project: FRP Shoreline Investigation 2011
Matrix: Soil 8769

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
1,1-Dichloropropene	43.8	50.0	87.6%	49.8	50.0	99.6%	12.8%
Dibromomethane	43.3	50.0	86.6%	45.3	50.0	90.6%	4.5%
1,1,1,2-Tetrachloroethane	45.3	50.0	90.6%	48.4	50.0	96.8%	6.6%
1,2-Dibromo-3-chloropropane	38.0	50.0	76.0%	39.6	50.0	79.2%	4.1%
1,2,3-Trichloropropane	39.0	50.0	78.0%	40.5	50.0	81.0%	3.8%
trans-1,4-Dichloro-2-butene	39.7	50.0	79.4%	40.6	50.0	81.2%	2.2%
1,3,5-Trimethylbenzene	47.1	50.0	94.2%	49.7	50.0	99.4%	5.4%
1,2,4-Trimethylbenzene	48.3	50.0	96.6%	50.8	50.0	102%	5.0%
Hexachlorobutadiene	46.4	50.0	92.8%	48.4	50.0	96.8%	4.2%
Ethylene Dibromide	43.2	50.0	86.4%	48.2	50.0	96.4%	10.9%
Bromochloromethane	47.4	50.0	94.8%	54.2	50.0	108%	13.4%
2,2-Dichloropropane	46.1	50.0	92.2%	52.6	50.0	105%	13.2%
1,3-Dichloropropane	43.6	50.0	87.2%	46.3	50.0	92.6%	6.0%
Isopropylbenzene	46.8	50.0	93.6%	50.0	50.0	100%	6.6%
n-Propylbenzene	49.5	50.0	99.0%	52.2	50.0	104%	5.3%
Bromobenzene	45.6	50.0	91.2%	48.0	50.0	96.0%	5.1%
2-Chlorotoluene	47.1	50.0	94.2%	47.2	50.0	94.4%	0.2%
4-Chlorotoluene	46.2	50.0	92.4%	51.2	50.0	102%	10.3%
tert-Butylbenzene	45.6	50.0	91.2%	48.0	50.0	96.0%	5.1%
sec-Butylbenzene	48.9	50.0	97.8%	51.8	50.0	104%	5.8%
4-Isopropyltoluene	48.4	50.0	96.8%	50.7	50.0	101%	4.6%
n-Butylbenzene	51.1 B	50.0	102%	53.4 B	50.0	107%	4.4%
1,2,4-Trichlorobenzene	50.4	50.0	101%	51.9	50.0	104%	2.9%
Naphthalene	42.1	50.0	84.2%	43.2	50.0	86.4%	2.6%
1,2,3-Trichlorobenzene	46.9	50.0	93.8%	48.2	50.0	96.4%	2.7%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	87.6%	91.0%
d8-Toluene	101%	103%
Bromofluorobenzene	97.4%	98.2%
d4-1,2-Dichlorobenzene	98.0%	98.5%

ANALYTICAL RESOURCES INCORPORATED

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

Lab Sample ID: LCS-090611
LIMS ID: 11-18894
Matrix: Soil
Data Release Authorized:
Reported: 09/08/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: FINN5/PAB
LCSD: FINN5/PAB
Date Analyzed LCS: 09/06/11 11:21
LCSD: 09/06/11 11:55

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	50.8	50.0	102%	50.9	50.0	102%	0.2%
Bromomethane	57.8	50.0	116%	58.1	50.0	116%	0.5%
Vinyl Chloride	47.6	50.0	95.2%	47.0	50.0	94.0%	1.3%
Chloroethane	55.3	50.0	111%	55.1	50.0	110%	0.4%
Methylene Chloride	53.0	50.0	106%	55.4	50.0	111%	4.4%
Acetone	231	250	92.4%	250	250	100%	7.9%
Carbon Disulfide	54.7	50.0	109%	54.0	50.0	108%	1.3%
1,1-Dichloroethene	52.7	50.0	105%	52.3	50.0	105%	0.8%
1,1-Dichloroethane	53.3	50.0	107%	53.0	50.0	106%	0.6%
trans-1,2-Dichloroethene	52.3	50.0	105%	52.4	50.0	105%	0.2%
cis-1,2-Dichloroethene	54.9	50.0	110%	55.2	50.0	110%	0.5%
Chloroform	50.8	50.0	102%	51.5	50.0	103%	1.4%
1,2-Dichloroethane	41.8	50.0	83.6%	43.6	50.0	87.2%	4.2%
2-Butanone	247	250	98.8%	274	250	110%	10.4%
1,1,1-Trichloroethane	49.0	50.0	98.0%	48.7	50.0	97.4%	0.6%
Carbon Tetrachloride	45.6	50.0	91.2%	44.4	50.0	88.8%	2.7%
Vinyl Acetate	52.8	50.0	106%	50.4	50.0	101%	4.7%
Bromodichloromethane	48.5	50.0	97.0%	48.8	50.0	97.6%	0.6%
1,2-Dichloropropane	50.1	50.0	100%	50.1	50.0	100%	0.0%
cis-1,3-Dichloropropene	50.4	50.0	101%	51.7	50.0	103%	2.5%
Trichloroethene	49.8	50.0	99.6%	48.8	50.0	97.6%	2.0%
Dibromochloromethane	50.6	50.0	101%	49.1	50.0	98.2%	3.0%
1,1,2-Trichloroethane	48.9	50.0	97.8%	51.8	50.0	104%	5.8%
Benzene	50.4	50.0	101%	50.6	50.0	101%	0.4%
trans-1,3-Dichloropropene	49.1	50.0	98.2%	50.9	50.0	102%	3.6%
2-Chloroethylvinylether	106 Q	50.0	212%	110 Q	50.0	220%	3.7%
Bromoform	49.6	50.0	99.2%	50.4	50.0	101%	1.6%
4-Methyl-2-Pentanone (MIBK)	237	250	94.8%	256	250	102%	7.7%
2-Hexanone	236	250	94.4%	258	250	103%	8.9%
Tetrachloroethene	50.9	50.0	102%	47.9	50.0	95.8%	6.1%
1,1,2,2-Tetrachloroethane	48.5	50.0	97.0%	50.5	50.0	101%	4.0%
Toluene	50.6	50.0	101%	50.4	50.0	101%	0.4%
Chlorobenzene	51.5	50.0	103%	50.4	50.0	101%	2.2%
Ethylbenzene	51.1	50.0	102%	49.5	50.0	99.0%	3.2%
Styrene	51.2	50.0	102%	50.0	50.0	100%	2.4%
Trichlorofluoromethane	55.9	50.0	112%	54.9	50.0	110%	1.8%
1,1,2-Trichloro-1,2,2-trifluoroetha	61.0 Q	50.0	122%	59.4 Q	50.0	119%	2.7%
m,p-Xylene	104	100	104%	96.5	100	96.5%	7.5%
o-Xylene	51.5	50.0	103%	50.4	50.0	101%	2.2%
1,2-Dichlorobenzene	50.9	50.0	102%	49.7	50.0	99.4%	2.4%
1,3-Dichlorobenzene	51.9	50.0	104%	49.4	50.0	98.8%	4.9%
1,4-Dichlorobenzene	52.5	50.0	105%	49.7	50.0	99.4%	5.5%
Acrolein	266	250	106%	298	250	119%	11.3%
Methyl Iodide	57.0 Q	50.0	114%	57.2 Q	50.0	114%	0.4%
Bromoethane	53.7	50.0	107%	53.5	50.0	107%	0.4%
Acrylonitrile	50.7	50.0	101%	56.6	50.0	113%	11.0%

ANALYTICAL RESOURCES INCORPORATED

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

LAB CONTROL SAMPLE

Lab Sample ID: LCS-090611
LIMS ID: 11-18894
Matrix: Soil

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
1,1-Dichloropropene	48.5	50.0	97.0%	46.3	50.0	92.6%	4.6%
Dibromomethane	49.5	50.0	99.0%	50.5	50.0	101%	2.0%
1,1,1,2-Tetrachloroethane	47.8	50.0	95.6%	46.8	50.0	93.6%	2.1%
1,2-Dibromo-3-chloropropane	44.3	50.0	88.6%	48.2	50.0	96.4%	8.4%
1,2,3-Trichloropropane	45.5	50.0	91.0%	47.6	50.0	95.2%	4.5%
trans-1,4-Dichloro-2-butene	48.3	50.0	96.6%	50.1	50.0	100%	3.7%
1,3,5-Trimethylbenzene	50.5	50.0	101%	47.8	50.0	95.6%	5.5%
1,2,4-Trimethylbenzene	51.3	50.0	103%	49.1	50.0	98.2%	4.4%
Hexachlorobutadiene	46.1	50.0	92.2%	43.4	50.0	86.8%	6.0%
Ethylene Dibromide	50.3	50.0	101%	52.3	50.0	105%	3.9%
Bromochloromethane	54.4	50.0	109%	56.0	50.0	112%	2.9%
2,2-Dichloropropane	50.7	50.0	101%	49.9	50.0	99.8%	1.6%
1,3-Dichloropropane	49.3	50.0	98.6%	50.1	50.0	100%	1.6%
Isopropylbenzene	50.7	50.0	101%	47.8	50.0	95.6%	5.9%
n-Propylbenzene	53.6	50.0	107%	50.3	50.0	101%	6.4%
Bromobenzene	49.7	50.0	99.4%	47.8	50.0	95.6%	3.9%
2-Chlorotoluene	50.6	50.0	101%	45.4	50.0	90.8%	10.8%
4-Chlorotoluene	50.2	50.0	100%	50.7	50.0	101%	1.0%
tert-Butylbenzene	49.2	50.0	98.4%	46.5	50.0	93.0%	5.6%
sec-Butylbenzene	52.7	50.0	105%	49.1	50.0	98.2%	7.1%
4-Isopropyltoluene	51.5	50.0	103%	48.1	50.0	96.2%	6.8%
n-Butylbenzene	54.4	50.0	109%	50.5	50.0	101%	7.4%
1,2,4-Trichlorobenzene	51.7	50.0	103%	48.6	50.0	97.2%	6.2%
Naphthalene	45.9	50.0	91.8%	46.9	50.0	93.8%	2.2%
1,2,3-Trichlorobenzene	48.2	50.0	96.4%	47.3	50.0	94.6%	1.9%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	94.1%	97.9%
d8-Toluene	101%	104%
Bromofluorobenzene	97.8%	99.1%
d4-1,2-Dichlorobenzene	102%	102%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0905

Lab Name: ANALYTICAL RESOURCES INC

Client: AMEC GEOMATRIX

ARI Job No: TK51

Project: FRP

Lab File ID: MB0905

Lab Sample ID: MB0905

Date Analyzed: 09/05/11

Time Analyzed: 1550

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	LCS0905	LCS0905	LCS0905	1448
02	LCS0905	LCS0905	LCS0905A	1522
03	FRP-083011-0	TK51A	TK51A	2234
04	FRP-083011-0	TK51B	TK51B	2302
05	FRP-083011-0	TK51C	TK51C	2329
06	FRP-083011-0	TK51D	TK51D	2356
07	FRP-083011-0	TK51E	TK51E	0024
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COMMENTS:

FORM IV VOA

OLM3.2M

TK51 : 00073

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-090511**
 METHOD BLANK

Lab Sample ID: MB-090511
LIMS ID: 11-18889
Matrix: Soil
Data Release Authorized: MW
Reported: 09/08/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/05/11 15:50

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**	**5.7**
67-64-1	**Acetone**	**0.48**	**5.0**	**3.8 J**
75-15-0	Carbon Disulfide	0.56	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	0.34	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	0.20	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	0.27	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	0.24	1.0	< 1.0 U
67-66-3	Chloroform	0.23	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	0.19	1.0	< 1.0 U
78-93-3	2-Butanone	0.51	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.23	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	0.21	1.0	< 1.0 U
108-05-4	Vinyl Acetate	0.38	5.0	< 5.0 U
75-27-4	Bromodichloromethane	0.25	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	0.16	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	0.23	1.0	< 1.0 U
79-01-6	Trichloroethene	0.21	1.0	< 1.0 U
124-48-1	Dibromochloromethane	0.27	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	0.29	1.0	< 1.0 U
71-43-2	Benzene	0.30	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	0.22	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	0.28	5.0	< 5.0 U
75-25-2	Bromoform	0.30	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.42	5.0	< 5.0 U
591-78-6	2-Hexanone	0.44	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.26	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	0.25	1.0	< 1.0 U
108-88-3	Toluene	0.15	1.0	< 1.0 U
108-90-7	Chlorobenzene	0.22	1.0	< 1.0 U
100-41-4	Ethylbenzene	0.20	1.0	< 1.0 U
100-42-5	Styrene	0.14	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	0.27	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.29	2.0	< 2.0 U
179601-23-1	m,p-Xylene	0.39	1.0	< 1.0 U
95-47-6	o-Xylene	0.22	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	0.29	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.23	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.23	1.0	< 1.0 U
107-02-8	Acrolein	3.8	50	< 50 U
74-88-4	Methyl Iodide	0.22	1.0	< 1.0 U
74-96-4	Bromoethane	0.44	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	5.0	< 5.0 U
563-58-6	1,1-Dichloropropene	0.31	1.0	< 1.0 U
74-95-3	Dibromomethane	0.15	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	0.23	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	0.59	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-090511**
 METHOD BLANK

Lab Sample ID: MB-090511
LIMS ID: 11-18889
Matrix: Soil
Date Analyzed: 09/05/11 15:50

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
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**	**0.6 J**
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	93.7%
d8-Toluene	99.8%
Bromofluorobenzene	94.5%
d4-1,2-Dichlorobenzene	97.5%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0906

Lab Name: ANALYTICAL RESOURCES INC

Client: AMEC GEOMATRIX

ARI Job No: TK51

Project: FRP

Lab File ID: MB0906

Lab Sample ID: MB0906

Date Analyzed: 09/06/11

Time Analyzed: 1222

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	LCS0906	LCS0906	LCS0906	1121
02	LCS0906	LCS0906	LCS0906A	1155
03	FRP-083011-0	TK51F	TK51F2	1303
04	FRP-083011-0	TK51G	TK51G	1336
05	FRP-083011-0	TK51H	TK51H	1404
06	FRP-083011-0	TK51I	TK51I	1433
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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-090611**
 METHOD BLANK

Lab Sample ID: MB-090611
LIMS ID: 11-18894
Matrix: Soil
Data Release Authorized:
Reported: 09/08/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 12:22

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-090611**
 METHOD BLANK

Lab Sample ID: MB-090611
LIMS ID: 11-18894
Matrix: Soil
Date Analyzed: 09/06/11 12:22

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

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

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	102%
Bromofluorobenzene	95.7%
d4-1,2-Dichlorobenzene	99.4%

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: TK35 Case No.: FRP SDG No.: TK51

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

Instrument ID: FINN5 BFB Injection Time: 1806

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

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

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

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

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

TK51:00079

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: TK35 Case No.: FRP SDG No.: TK51

Lab File ID: BFB0905 BFB Injection Date: 09/05/11

Instrument ID: FINN5 BFB Injection Time: 1229

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	25.8
75	30.0 - 66.0% of mass 95	50.8
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	0.2 (0.2)1
174	50.0 - 101.0% of mass 95	91.2
175	4.0 - 9.0% of mass 174	5.3 (5.8)1
176	93.0 - 101.0% of mass 174	88.5 (97.1)1
177	5.0 - 9.0% of mass 176	5.3 (6.0)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	CC0905	CC0905	CC0905A	09/05/11	1408
02	LCS0905	LCS0905	LCS0905	09/05/11	1448
03	LCS0905	LCS0905	LCS0905A	09/05/11	1522
04	MB0905	MB0905	MB0905	09/05/11	1550
05	FRP-083011-021	TK51A	TK51A	09/05/11	2234
06	FRP-083011-022	TK51B	TK51B	09/05/11	2302
07	FRP-083011-023	TK51C	TK51C	09/05/11	2329
08	FRP-083011-024	TK51D	TK51D	09/05/11	2356
09	FRP-083011-025	TK51E	TK51E	09/06/11	0024
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FORM V VOA OLM3.2M

TK51:000080

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: TK35 Case No.: FRP SDG No.: TK51

Lab File ID: BFB09060 BFB Injection Date: 09/06/11

Instrument ID: FINN5 BFB Injection Time: 0913

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	25.6
75	30.0 - 66.0% of mass 95	49.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 101.0% of mass 95	92.8
175	4.0 - 9.0% of mass 174	5.7 (6.2)1
176	93.0 - 101.0% of mass 174	89.2 (96.1)1
177	5.0 - 9.0% of mass 176	5.1 (5.7)2

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

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	CC0906	0500906A	09/06/11	1041
02	LCS0906	LCS0906	LCS0906	09/06/11	1121
03	LCS0906	LCS0906	LCS0906A	09/06/11	1155
04	MB0906	MB0906	MB0906	09/06/11	1222
05	FRP-083011-026	TK51F	TK51F2	09/06/11	1303
06	FRP-083011-027	TK51G	TK51G	09/06/11	1336
07	FRP-083011-028	TK51H	TK51H	09/06/11	1404
08	FRP-083011-029	TK51I	TK51I	09/06/11	1433
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FORM V VOA OLM3.2M

TK51:00081

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TK51 Project: FRP

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: TK51 Project: FRP

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: TK51 Project: FRP

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: TK51 Project: FRP

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: TK51 Project: FRP

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: TK51 Project: FRP

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: TK51 Project: FRP

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: TK51 — Project: FRP

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: TK51 | Project: FRP

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: TK51 — Project: FRP

Instrument ID: FINN5 — Cont. Calib. Date: 09/05/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1408

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
Chloromethane	0.997	0.925	0.100	AVRG	-7.2	
Vinyl Chloride	1.018	0.886	0.010	AVRG	-13.0	
Bromomethane	0.439	0.422	0.010	AVRG	-3.9	
Chloroethane	0.462	0.487	0.010	AVRG	5.4	
Trichlorofluoromethane	0.910	0.956	0.010	AVRG	5.0	
Acrolein	0.091	0.094	0.010	AVRG	3.3	
112Trichloro122Trifluoroetha	0.516	0.581	0.010	AVRG	12.6	
Acetone	0.213	0.196	0.010	AVRG	-8.0	
1,1-Dichloroethene	0.461	0.469	0.010	AVRG	1.7	
Bromoethane	0.362	0.381	0.010	AVRG	5.2	
Iodomethane	0.722	0.794	0.010	AVRG	10.0	
Methylene Chloride	50.000	53.424	0.010	LINR	6.8	
Acrylonitrile	0.194	0.197	0.010	AVRG	1.5	
Carbon Disulfide	1.805	1.892	0.010	AVRG	4.8	
Trans-1,2-Dichloroethene	0.506	0.510	0.010	AVRG	0.8	
Vinyl Acetate	0.904	0.876	0.010	AVRG	-3.1	
1,1-Dichloroethane	1.125	1.159	0.100	AVRG	3.0	
2-Butanone	0.304	0.306	0.010	AVRG	0.6	
2,2-Dichloropropane	0.731	0.733	0.010	AVRG	0.3	
Cis-1,2-Dichloroethene	0.528	0.574	0.010	AVRG	8.7	
Chloroform	1.000	1.008	0.010	AVRG	0.8	
Bromochloromethane	0.262	0.285	0.010	AVRG	8.8	
1,1,1-Trichloroethane	0.806	0.788	0.010	AVRG	-2.2	
1,1-Dichloropropene	0.604	0.564	0.010	AVRG	-6.6	
Carbon Tetrachloride	0.584	0.525	0.010	AVRG	-10.1	
1,2-Dichloroethane	0.616	0.521	0.010	AVRG	-15.4	
Benzene	1.476	1.447	0.010	AVRG	-2.0	
Trichloroethene	0.456	0.438	0.010	AVRG	-3.9	
1,2-Dichloropropane	0.515	0.498	0.010	AVRG	-3.3	
Bromodichloromethane	0.566	0.542	0.010	AVRG	-4.2	
Dibromomethane	0.267	0.253	0.010	AVRG	-5.2	
2-Chloroethyl Vinyl Ether	0.088	0.181	0.010	AVRG	105.7	<-
4-Methyl-2-Pentanone	0.136	0.132	0.010	AVRG	-2.9	
Cis 1,3-dichloropropene	0.607	0.615	0.010	AVRG	1.3	
Toluene	0.836	0.822	0.010	AVRG	-1.7	
Trans 1,3-Dichloropropene	0.510	0.504	0.010	AVRG	-1.2	
2-Hexanone	0.391	0.367	0.010	AVRG	-6.1	

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

FORM VII VOA

TK51:00091

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK51 — Project: FRP

Instrument ID: FINN5 — Cont. Calib. Date: 09/05/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1408

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
1,1,2-Trichloroethane	0.295	0.292	0.010	AVRG	-1.0	
1,3-Dichloropropane	0.609	0.592	0.010	AVRG	-2.8	
Tetrachloroethene	0.515	0.506	0.010	AVRG	-1.7	
Chlorodibromomethane	0.467	0.475	0.010	AVRG	1.7	
1,2-Dibromoethane	0.334	0.341	0.010	AVRG	2.1	
Chlorobenzene	1.006	1.008	0.300	AVRG	0.2	
Ethyl Benzene	1.752	1.734	0.010	AVRG	-1.0	
1,1,1,2-Tetrachloroethane	0.404	0.382	0.010	AVRG	-5.4	
m,p-xylene	0.632	0.636	0.010	AVRG	0.6	
o-Xylene	0.630	0.630	0.010	AVRG	0.0	
Styrene	1.023	1.017	0.010	AVRG	-0.6	
Bromoform	0.658	0.633	0.100	AVRG	-3.8	
1,1,2,2-Tetrachloroethane	0.921	0.832	0.300	AVRG	-9.7	
1,2,3-Trichloropropane	0.195	0.171	0.010	AVRG	-12.3	
Trans-1,4-Dichloro 2-Butene	0.329	0.290	0.010	AVRG	-11.8	
N-Propyl Benzene	3.824	3.686	0.010	AVRG	-3.6	
Bromobenzene	0.956	0.871	0.010	AVRG	-8.9	
Isopropyl Benzene	3.314	3.037	0.010	AVRG	-8.4	
2-Chloro Toluene	2.490	2.208	0.010	AVRG	-11.3	
4-Chloro Toluene	2.603	2.401	0.010	AVRG	-7.8	
T-Butyl Benzene	2.460	2.193	0.010	AVRG	-10.8	
1,3,5-Trimethyl Benzene	2.721	2.536	0.010	AVRG	-6.8	
1,2,4-Trimethylbenzene	2.667	2.502	0.010	AVRG	-6.2	
S-Butyl Benzene	3.493	3.304	0.010	AVRG	-5.4	
4-Isopropyl Toluene	2.696	2.516	0.010	AVRG	-6.7	
1,3-Dichlorobenzene	1.590	1.508	0.010	AVRG	-5.2	
1,4-Dichlorobenzene	1.538	1.476	0.010	AVRG	-4.0	
N-Butyl Benzene	2.906	2.830	0.010	AVRG	-2.6	
1,2-Dichlorobenzene	1.443	1.367	0.010	AVRG	-5.3	
1,2-Dibromo 3-Chloropropane	0.189	0.165	0.010	AVRG	-12.7	
1,2,4-Trichlorobenzene	1.136	1.095	0.010	AVRG	-3.6	
Hexachloro 1,3-Butadiene	0.890	0.784	0.010	AVRG	-11.9	
Naphthalene	1.960	1.773	0.010	AVRG	-9.5	
1,2,3-Trichlorobenzene	1.061	0.987	0.010	AVRG	-7.0	
Dichlorodifluoromethane	0.578	0.434	0.010	AVRG	-24.9	<-
Methyl tert-Butyl Ether	1.209	1.155	0.010	AVRG	-4.5	

<- 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: TK51 — Project: FRP

Instrument ID: FINN5 — Cont. Calib. Date: 09/05/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1408

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.669	0.668	0.010	AVRG	-0.1
d8-Toluene	1.198	1.216	0.010	AVRG	1.5
4-Bromofluorobenzene	0.551	0.559	0.010	AVRG	1.4
d4-1,2-Dichlorobenzene	0.901	0.889	0.010	AVRG	-1.3
Dibromofluoromethane	0.538	0.597	0.010	AVRG	11.0

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

FORM VII VOA

TK51 : 00093

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK51 — Project: FRP

Instrument ID: FINN5 — Cont. Calib. Date: 09/06/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1041

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
Chloromethane	0.997	1.056	0.100	AVRG	5.9	
Vinyl Chloride	1.018	0.999	0.010	AVRG	-1.9	
Bromomethane	0.439	0.519	0.010	AVRG	18.2	
Chloroethane	0.462	0.525	0.010	AVRG	13.6	
Trichlorofluoromethane	0.910	1.061	0.010	AVRG	16.6	
Acrolein	0.091	0.101	0.010	AVRG	11.0	
112Trichloro122Trifluoroetha	0.516	0.658	0.010	AVRG	27.5	<-
Acetone	0.213	0.206	0.010	AVRG	-3.3	
1,1-Dichloroethene	0.461	0.503	0.010	AVRG	9.1	
Bromoethane	0.362	0.408	0.010	AVRG	12.7	
Iodomethane	0.722	0.878	0.010	AVRG	21.6	<-
Methylene Chloride	50.000	55.882	0.010	LINR	11.8	
Acrylonitrile	0.194	0.208	0.010	AVRG	7.2	
Carbon Disulfide	1.805	2.067	0.010	AVRG	14.5	
Trans-1,2-Dichloroethene	0.506	0.555	0.010	AVRG	9.7	
Vinyl Acetate	0.904	0.976	0.010	AVRG	8.0	
1,1-Dichloroethane	1.125	1.252	0.100	AVRG	11.3	
2-Butanone	0.304	0.316	0.010	AVRG	3.9	
2,2-Dichloropropane	0.731	0.775	0.010	AVRG	6.0	
Cis-1,2-Dichloroethene	0.528	0.623	0.010	AVRG	18.0	
Chloroform	1.000	1.035	0.010	AVRG	3.5	
Bromochloromethane	0.262	0.299	0.010	AVRG	14.1	
1,1,1-Trichloroethane	0.806	0.835	0.010	AVRG	3.6	
1,1-Dichloropropene	0.604	0.605	0.010	AVRG	0.2	
Carbon Tetrachloride	0.584	0.552	0.010	AVRG	-5.5	
1,2-Dichloroethane	0.616	0.538	0.010	AVRG	-12.7	
Benzene	1.476	1.543	0.010	AVRG	4.5	
Trichloroethene	0.456	0.471	0.010	AVRG	3.3	
1,2-Dichloropropane	0.515	0.538	0.010	AVRG	4.5	
Bromodichloromethane	0.566	0.575	0.010	AVRG	1.6	
Dibromomethane	0.267	0.264	0.010	AVRG	-1.1	
2-Chloroethyl Vinyl Ether	0.088	0.192	0.010	AVRG	118.2	<-
4-Methyl-2-Pentanone	0.136	0.134	0.010	AVRG	-1.5	
Cis 1,3-dichloropropene	0.607	0.658	0.010	AVRG	8.4	
Toluene	0.836	0.884	0.010	AVRG	5.7	
Trans 1,3-Dichloropropene	0.510	0.546	0.010	AVRG	7.0	
2-Hexanone	0.391	0.384	0.010	AVRG	-1.8	

<- 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: TK51 — Project: FRP

Instrument ID: FINN5 — Cont. Calib. Date: 09/06/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1041

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
1,1,2-Trichloroethane	0.295	0.307	0.010	AVRG	4.1
1,3-Dichloropropane	0.609	0.624	0.010	AVRG	2.5
Tetrachloroethene	0.515	0.544	0.010	AVRG	5.6
Chlorodibromomethane	0.467	0.493	0.010	AVRG	5.6
1,2-Dibromoethane	0.334	0.348	0.010	AVRG	4.2
Chlorobenzene	1.006	1.083	0.300	AVRG	7.6
Ethyl Benzene	1.752	1.842	0.010	AVRG	5.1
1,1,1,2-Tetrachloroethane	0.404	0.408	0.010	AVRG	1.0
m,p-xylene	0.632	0.657	0.010	AVRG	4.0
o-Xylene	0.630	0.664	0.010	AVRG	5.4
Styrene	1.023	1.082	0.010	AVRG	5.8
Bromoform	0.658	0.690	0.100	AVRG	4.9
1,1,2,2-Tetrachloroethane	0.921	0.942	0.300	AVRG	2.3
1,2,3-Trichloropropane	0.195	0.186	0.010	AVRG	-4.6
Trans-1,4-Dichloro 2-Butene	0.329	0.326	0.010	AVRG	-0.9
N-Propyl Benzene	3.824	4.276	0.010	AVRG	11.8
Bromobenzene	0.956	0.980	0.010	AVRG	2.5
Isopropyl Benzene	3.314	3.512	0.010	AVRG	6.0
2-Chloro Toluene	2.490	2.655	0.010	AVRG	6.6
4-Chloro Toluene	2.603	2.695	0.010	AVRG	3.5
T-Butyl Benzene	2.460	2.523	0.010	AVRG	2.6
1,3,5-Trimethyl Benzene	2.721	2.884	0.010	AVRG	6.0
1,2,4-Trimethylbenzene	2.667	2.822	0.010	AVRG	5.8
S-Butyl Benzene	3.493	3.808	0.010	AVRG	9.0
4-Isopropyl Toluene	2.696	2.876	0.010	AVRG	6.7
1,3-Dichlorobenzene	1.590	1.716	0.010	AVRG	7.9
1,4-Dichlorobenzene	1.538	1.671	0.010	AVRG	8.6
N-Butyl Benzene	2.906	3.236	0.010	AVRG	11.4
1,2-Dichlorobenzene	1.443	1.510	0.010	AVRG	4.6
1,2-Dibromo 3-Chloropropane	0.189	0.171	0.010	AVRG	-9.5
1,2,4-Trichlorobenzene	1.136	1.164	0.010	AVRG	2.5
Hexachloro 1,3-Butadiene	0.890	0.830	0.010	AVRG	-6.7
Naphthalene	1.960	1.729	0.010	AVRG	-11.8
1,2,3-Trichlorobenzene	1.061	0.993	0.010	AVRG	-6.4
Dichlorodifluoromethane	0.578	0.476	0.010	AVRG	-17.6
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: TK51 — Project: FRP

Instrument ID: FINN5 — Cont. Calib. Date: 09/06/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1041

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.669	0.649	0.010	AVRG	-3.0
d8-Toluene	1.198	1.235	0.010	AVRG	3.1
4-Bromofluorobenzene	0.551	0.544	0.010	AVRG	-1.3
d4-1,2-Dichlorobenzene	0.901	0.905	0.010	AVRG	0.4
Dibromofluoromethane	0.538	0.585	0.010	AVRG	8.7

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

FORM VII VOA

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK51 — Project: FRP

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

Instrument ID: FINN5 — Project Run Date: 09/05/11

		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	LCS0905	118420	6.45	170104	7.46	150288	10.59
02	LCS0905	115303	6.44	166314	7.45	152691	10.59
03	MB0905	112014	6.43	158776	7.44	144004	10.58
04	FRP-083011-0	111336	6.45	160893	7.46	138383	10.59
05	FRP-083011-0	106477	6.44	156249	7.45	148491	10.58
06	FRP-083011-0	106928	6.44	157226	7.45	147683	10.59
07	FRP-083011-0	106846	6.44	156374	7.45	145611	10.58
08	FRP-083011-0	107642	6.44	157758	7.44	145110	10.58
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IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CLB) = d5-Chlorobenzene

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

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK51 — Project: FRP

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

Instrument ID: FINN5 — Project Run Date: 09/05/11

		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	LCS0905	80042	13.28				
02	LCS0905	83069	13.28				
03	MB0905	74392	13.26				
04	FRP-083011-0	59438	13.28				
05	FRP-083011-0	74324	13.27				
06	FRP-083011-0	76166	13.27				
07	FRP-083011-0	70239	13.27				
08	FRP-083011-0	71880	13.27				
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IS4 (DCB) = d4-1,4-Dichlorobenzene

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

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK51 — Project: FRP

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

Instrument ID: FINN5 — Project Run Date: 09/06/11

		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	LCS0906	119914	6.44	174356	7.45	155649	10.58
02	LCS0906	116492	6.44	171754	7.44	157567	10.58
03	MB0906	113564	6.43	162940	7.44	150296	10.57
04	FRP-083011-0	110035	6.44	161171	7.45	143919	10.58
05	FRP-083011-0	111336	6.44	163514	7.44	155054	10.58
06	FRP-083011-0	115523	6.44	160510	7.45	153136	10.58
07	FRP-083011-0	109333	6.42	163453	7.43	151480	10.57
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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: TK51 — Project: FRP

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

Instrument ID: FINN5 — Project Run Date: 09/06/11

		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	LCS0906	81426	13.27				
02	LCS0906	84406	13.27				
03	MB0906	77312	13.26				
04	FRP-083011-0	69537	13.27				
05	FRP-083011-0	78346	13.27				
06	FRP-083011-0	77596	13.27				
07	FRP-083011-0	77543	13.25				
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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: TK51

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK51

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
FRP-083011-021	TK51A	11-18889	
FRP-083011-021D	TK51ADUP	11-18889	
FRP-083011-021S	TK51ASPK	11-18889	
FRP-083011-022	TK51B	11-18890	
PBS	TK51MB1	11-18890	
LCSS	TK51MB1SPK	11-18890	
FRP-083011-023	TK51C	11-18891	
FRP-083011-024	TK51D	11-18892	
FRP-083011-025	TK51E	11-18893	
FRP-083011-026	TK51F	11-18894	
FRP-083011-027	TK51G	11-18895	
FRP-083011-028	TK51H	11-18896	
FRP-083011-029	TK51I	11-18897	
FRP-083011-031	TK51K	11-18899	
FRP-083011-031D	TK51KDUP	11-18899	
FRP-083011-031S	TK51KSPK	11-18899	
PBW	TK51MB2	11-18899	
LCSW	TK51MB2SPK	11-18899	

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: 9/8/11 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-021
SAMPLE

Lab Sample ID: TK51A
LIMS ID: 11-18889
Matrix: Soil
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 92.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/02/11	6010B	09/06/11	**7429-90-5**	**Aluminum**	3.7	5	**10,400**	
3050B	09/02/11	200.8	09/06/11	**7440-38-2**	**Arsenic**	0.092	0.2	**6.6**	
3050B	09/02/11	6010B	09/06/11	**7440-43-9**	**Cadmium**	0.12	0.2	**0.4**	
3050B	09/02/11	6010B	09/06/11	**7440-47-3**	**Chromium**	0.28	0.5	**22.9**	
3050B	09/02/11	6010B	09/06/11	**7440-50-8**	**Copper**	0.052	0.2	**94.1** J	
3050B	09/02/11	6010B	09/06/11	**7439-92-1**	**Lead**	0.14	2	**12**	
CLP	09/02/11	7471A	09/06/11	**7439-97-6**	**Mercury**	0.0012	0.02	**0.43** J	
3050B	09/02/11	6010B	09/06/11	**7440-02-0**	**Nickel**	0.31	1	**14**	
3050B	09/02/11	6010B	09/06/11	7782-49-2	Selenium	0.68	5	5	U
3050B	09/02/11	6010B	09/06/11	7440-28-0	Thallium	0.56	5	5	U
3050B	09/02/11	6010B	09/06/11	**7440-62-2**	**Vanadium**	0.063	0.3	**47.2**	
3050B	09/02/11	6010B	09/06/11	**7440-66-6**	**Zinc**	0.13	1	**47**	

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-083011-021
DUPLICATE

Lab Sample ID: TK51A
LIMS ID: 11-18889
Matrix: Soil
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Aluminum	6010B	10,400	10,200	1.9%	+/- 20%	
Arsenic	200.8	6.6	6.6	0.0%	+/- 20%	
Cadmium	6010B	0.4	0.4	0.0%	+/- 0.2	L
Chromium	6010B	22.9	24.0	4.7%	+/- 20%	
Copper	6010B	94.1	103	9.0%	+/- 20%	
Lead	6010B	12	12	0.0%	+/- 20%	
Mercury	7471A	0.43	0.53	20.8%	+/- 20%	*
Nickel	6010B	14	17	19.4%	+/- 20%	
Selenium	6010B	5 U	5 U	0.0%	+/- 5	L
Thallium	6010B	5 U	5 U	0.0%	+/- 5	L
Vanadium	6010B	47.2	48.2	2.1%	+/- 20%	
Zinc	6010B	47	49	4.2%	+/- 20%	

Reported in mg/kg-dry

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

TK51 : 00184

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-021
MATRIX SPIKE

Lab Sample ID: TK51A
LIMS ID: 11-18889
Matrix: Soil
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Aluminum	6010B	10,400	10,500	210	47.6%	H
Arsenic	200.8	6.6	33.7	26.4	103%	
Cadmium	6010B	0.4	53.9	52.6	102%	
Chromium	6010B	22.9	76.1	52.6	101%	
Copper	6010B	94.1	162	52.6	129%	N
Lead	6010B	12	210	210	94.3%	
Mercury	7471A	0.43	0.69	0.237	110%	
Nickel	6010B	14	63	52.6	93.2%	
Selenium	6010B	5 U	200	210	95.2%	
Thallium	6010B	5 U	195	210	92.9%	
Vanadium	6010B	47.2	93.7	52.6	88.4%	
Zinc	6010B	47	98	52.6	97.0%	

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-083011-022
SAMPLE

Lab Sample ID: TK51B
LIMS ID: 11-18890
Matrix: Soil
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 88.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/02/11	6010B	09/06/11	**7429-90-5**	**Aluminum**	3.8	5	**10,200**	
3050B	09/02/11	200.8	09/06/11	**7440-38-2**	**Arsenic**	0.096	0.2	**2.3**	
3050B	09/02/11	6010B	09/06/11	7440-43-9	Cadmium	0.12	0.2	0.2	U
3050B	09/02/11	6010B	09/06/11	**7440-47-3**	**Chromium**	0.29	0.5	**13.6**	
3050B	09/02/11	6010B	09/06/11	**7440-50-8**	**Copper**	0.054	0.2	**15.9**	J
3050B	09/02/11	6010B	09/06/11	7439-92-1	Lead	0.14	2	2	U
CLP	09/02/11	7471A	09/06/11	**7439-97-6**	**Mercury**	0.0011	0.02	**0.03**	J
3050B	09/02/11	6010B	09/06/11	**7440-02-0**	**Nickel**	0.32	1	**9**	
3050B	09/02/11	6010B	09/06/11	7782-49-2	Selenium	0.70	5	5	U
3050B	09/02/11	6010B	09/06/11	7440-28-0	Thallium	0.57	5	5	U
3050B	09/02/11	6010B	09/06/11	**7440-62-2**	**Vanadium**	0.065	0.3	**46.8**	
3050B	09/02/11	6010B	09/06/11	**7440-66-6**	**Zinc**	0.13	1	**34**	

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-083011-023
SAMPLE

Lab Sample ID: TK51C
LIMS ID: 11-18891
Matrix: Soil
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 88.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/02/11	6010B	09/06/11	**7429-90-5**	**Aluminum**	3.8	5	**10,300**	
3050B	09/02/11	200.8	09/06/11	**7440-38-2**	**Arsenic**	0.092	0.2	**2.4**	
3050B	09/02/11	6010B	09/06/11	7440-43-9	Cadmium	0.12	0.2	0.2	U
3050B	09/02/11	6010B	09/06/11	**7440-47-3**	**Chromium**	0.29	0.5	**14.4**	
3050B	09/02/11	6010B	09/06/11	**7440-50-8**	**Copper**	0.053	0.2	**16.5**	J
3050B	09/02/11	6010B	09/06/11	7439-92-1	Lead	0.14	2	2	U
CLP	09/02/11	7471A	09/06/11	**7439-97-6**	**Mercury**	0.0011	0.02	**0.03**	J
3050B	09/02/11	6010B	09/06/11	**7440-02-0**	**Nickel**	0.32	1	**9**	
3050B	09/02/11	6010B	09/06/11	7782-49-2	Selenium	0.69	5	5	U
3050B	09/02/11	6010B	09/06/11	7440-28-0	Thallium	0.57	5	5	U
3050B	09/02/11	6010B	09/06/11	**7440-62-2**	**Vanadium**	0.064	0.3	**49.2**	
3050B	09/02/11	6010B	09/06/11	**7440-66-6**	**Zinc**	0.13	1	**36**	

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-083011-024
SAMPLE

Lab Sample ID: TK51D
LIMS ID: 11-18892
Matrix: Soil
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 82.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/02/11	6010B	09/06/11	**7429-90-5**	**Aluminum**	4.0	6	**10,400**	
3050B	09/02/11	200.8	09/06/11	**7440-38-2**	**Arsenic**	0.098	0.2	**2.1**	
3050B	09/02/11	6010B	09/06/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/02/11	6010B	09/06/11	**7440-47-3**	**Chromium**	0.31	0.6	**12.6**	
3050B	09/02/11	6010B	09/06/11	**7440-50-8**	**Copper**	0.057	0.2	**17.9** J	
3050B	09/02/11	6010B	09/06/11	7439-92-1	Lead	0.15	2	2	U
CLP	09/02/11	7471A	09/06/11	7439-97-6	Mercury	0.0015	0.03	0.03	U J
3050B	09/02/11	6010B	09/06/11	**7440-02-0**	**Nickel**	0.34	1	**8**	
3050B	09/02/11	6010B	09/06/11	7782-49-2	Selenium	0.74	6	6	U
3050B	09/02/11	6010B	09/06/11	7440-28-0	Thallium	0.60	6	6	U
3050B	09/02/11	6010B	09/06/11	**7440-62-2**	**Vanadium**	0.068	0.3	**39.2**	
3050B	09/02/11	6010B	09/06/11	**7440-66-6**	**Zinc**	0.14	1	**21**	

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-083011-025
SAMPLE

Lab Sample ID: TK51E
LIMS ID: 11-18893
Matrix: Soil
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 73.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/02/11	6010B	09/06/11	**7429-90-5**	**Aluminum**	4.8	7	**13,300**	
3050B	09/02/11	200.8	09/06/11	**7440-38-2**	**Arsenic**	0.12	0.3	**4.3**	
3050B	09/02/11	6010B	09/06/11	7440-43-9	Cadmium	0.15	0.3	0.3	U
3050B	09/02/11	6010B	09/06/11	**7440-47-3**	**Chromium**	0.37	0.7	**17.1**	
3050B	09/02/11	6010B	09/06/11	**7440-50-8**	**Copper**	0.068	0.3	**34.3**	J
3050B	09/02/11	6010B	09/06/11	**7439-92-1**	**Lead**	0.18	3	**3**	
CLP	09/02/11	7471A	09/06/11	**7439-97-6**	**Mercury**	0.0013	0.02	**0.06**	J
3050B	09/02/11	6010B	09/06/11	**7440-02-0**	**Nickel**	0.41	1	**20**	
3050B	09/02/11	6010B	09/06/11	7782-49-2	Selenium	0.88	7	7	U
3050B	09/02/11	6010B	09/06/11	7440-28-0	Thallium	0.72	7	7	U
3050B	09/02/11	6010B	09/06/11	**7440-62-2**	**Vanadium**	0.082	0.4	**54.0**	
3050B	09/02/11	6010B	09/06/11	**7440-66-6**	**Zinc**	0.16	1	**30**	

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-083011-026
SAMPLE

Lab Sample ID: TK51F
LIMS ID: 11-18894
Matrix: Soil
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 79.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/02/11	6010B	09/06/11	**7429-90-5**	**Aluminum**	4.2	6	**8,040**	
3050B	09/02/11	200.8	09/06/11	**7440-38-2**	**Arsenic**	0.11	0.2	**1.3**	
3050B	09/02/11	6010B	09/06/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/02/11	6010B	09/06/11	**7440-47-3**	**Chromium**	0.32	0.6	**13.4**	
3050B	09/02/11	6010B	09/06/11	**7440-50-8**	**Copper**	0.059	0.2	**11.4**	J
3050B	09/02/11	6010B	09/06/11	7439-92-1	Lead	0.15	2	2	U
CLP	09/02/11	7471A	09/06/11	7439-97-6	Mercury	0.0013	0.02	0.02	U J
3050B	09/02/11	6010B	09/06/11	**7440-02-0**	**Nickel**	0.36	1	**8**	
3050B	09/02/11	6010B	09/06/11	7782-49-2	Selenium	0.77	6	6	U
3050B	09/02/11	6010B	09/06/11	7440-28-0	Thallium	0.63	6	6	U
3050B	09/02/11	6010B	09/06/11	**7440-62-2**	**Vanadium**	0.071	0.4	**46.6**	
3050B	09/02/11	6010B	09/06/11	**7440-66-6**	**Zinc**	0.14	1	**20**	

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-083011-027
SAMPLE

Lab Sample ID: TK51G
LIMS ID: 11-18895
Matrix: Soil
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 80.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/02/11	6010B	09/06/11	**7429-90-5**	**Aluminum**	4.2	6	**7,870**	
3050B	09/02/11	200.8	09/06/11	**7440-38-2**	**Arsenic**	0.10	0.2	**1.5**	
3050B	09/02/11	6010B	09/06/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/02/11	6010B	09/06/11	**7440-47-3**	**Chromium**	0.32	0.6	**14.1**	
3050B	09/02/11	6010B	09/06/11	**7440-50-8**	**Copper**	0.059	0.2	**12.8**	J
3050B	09/02/11	6010B	09/06/11	7439-92-1	Lead	0.15	2	2	U
CLP	09/02/11	7471A	09/06/11	7439-97-6	Mercury	0.0013	0.03	0.03	U J
3050B	09/02/11	6010B	09/06/11	**7440-02-0**	**Nickel**	0.35	1	**10**	
3050B	09/02/11	6010B	09/06/11	7782-49-2	Selenium	0.77	6	6	U
3050B	09/02/11	6010B	09/06/11	7440-28-0	Thallium	0.63	6	6	U
3050B	09/02/11	6010B	09/06/11	**7440-62-2**	**Vanadium**	0.071	0.4	**41.7**	
3050B	09/02/11	6010B	09/06/11	**7440-66-6**	**Zinc**	0.14	1	**24**	

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-028
SAMPLE

Lab Sample ID: TK51H
LIMS ID: 11-18896
Matrix: Soil
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 80.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/02/11	6010B	09/06/11	**7429-90-5**	**Aluminum**	4.1	6	**7,880**	
3050B	09/02/11	200.8	09/06/11	**7440-38-2**	**Arsenic**	0.11	0.2	**0.9**	
3050B	09/02/11	6010B	09/06/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/02/11	6010B	09/06/11	**7440-47-3**	**Chromium**	0.31	0.6	**13.2**	
3050B	09/02/11	6010B	09/06/11	**7440-50-8**	**Copper**	0.058	0.2	**10.5**	J
3050B	09/02/11	6010B	09/06/11	7439-92-1	Lead	0.15	2	2	U
CLP	09/02/11	7471A	09/06/11	7439-97-6	Mercury	0.0014	0.03	0.03	UJ
3050B	09/02/11	6010B	09/06/11	**7440-02-0**	**Nickel**	0.35	1	**10**	
3050B	09/02/11	6010B	09/06/11	7782-49-2	Selenium	0.75	6	6	U
3050B	09/02/11	6010B	09/06/11	7440-28-0	Thallium	0.61	6	6	U
3050B	09/02/11	6010B	09/06/11	**7440-62-2**	**Vanadium**	0.069	0.3	**37.1**	
3050B	09/02/11	6010B	09/06/11	**7440-66-6**	**Zinc**	0.14	1	**23**	

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-083011-029
SAMPLE

Lab Sample ID: TK51I
LIMS ID: 11-18897
Matrix: Soil
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 79.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/02/11	6010B	09/06/11	**7429-90-5**	**Aluminum**	4.1	6	**7,960**	
3050B	09/02/11	200.8	09/06/11	**7440-38-2**	**Arsenic**	0.11	0.2	**0.8**	
3050B	09/02/11	6010B	09/06/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/02/11	6010B	09/06/11	**7440-47-3**	**Chromium**	0.31	0.6	**10.8**	
3050B	09/02/11	6010B	09/06/11	**7440-50-8**	**Copper**	0.058	0.2	**10.6**	J
3050B	09/02/11	6010B	09/06/11	7439-92-1	Lead	0.15	2	2	U
CLP	09/02/11	7471A	09/06/11	7439-97-6	Mercury	0.0016	0.03	0.03	UJ
3050B	09/02/11	6010B	09/06/11	**7440-02-0**	**Nickel**	0.35	1	**9**	
3050B	09/02/11	6010B	09/06/11	7782-49-2	Selenium	0.75	6	6	U
3050B	09/02/11	6010B	09/06/11	7440-28-0	Thallium	0.61	6	6	U
3050B	09/02/11	6010B	09/06/11	**7440-62-2**	**Vanadium**	0.069	0.3	**38.9**	
3050B	09/02/11	6010B	09/06/11	**7440-66-6**	**Zinc**	0.14	1	**23**	

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: METHOD BLANK

Lab Sample ID: TK51MB
LIMS ID: 11-18899
Matrix: Water
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/01/11	6010B	09/06/11	7429-90-5	Aluminum	0.0257	0.05	0.05	U
200.8	09/01/11	200.8	09/06/11	7440-38-2	Arsenic	0.000200	0.0002	0.0002	U
3010A	09/01/11	6010B	09/06/11	7440-43-9	Cadmium	0.00018	0.002	0.002	U
3010A	09/01/11	6010B	09/06/11	7440-47-3	Chromium	0.00124	0.005	0.005	U
3010A	09/01/11	6010B	09/06/11	7440-50-8	Copper	0.00092	0.002	0.002	U
3010A	09/01/11	6010B	09/06/11	7439-92-1	Lead	0.0016	0.02	0.02	U
7470A	09/01/11	7470A	09/06/11	7439-97-6	Mercury	0.000007	0.0001	0.0001	U
3010A	09/01/11	6010B	09/06/11	7440-02-0	Nickel	0.0039	0.01	0.01	U
3010A	09/01/11	6010B	09/06/11	7782-49-2	Selenium	0.0050	0.05	0.05	U
3010A	09/01/11	6010B	09/06/11	7440-28-0	Thallium	0.0031	0.05	0.05	U
3010A	09/01/11	6010B	09/06/11	7440-62-2	Vanadium	0.00027	0.003	0.003	U
3010A	09/01/11	6010B	09/06/11	7440-66-6	Zinc	0.0014	0.01	0.01	U

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: TK51LCS
LIMS ID: 11-18899
Matrix: Water
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Aluminum	6010B	2.00	2.00	100%	
Arsenic	200.8	0.0264	0.0250	106%	
Cadmium	6010B	0.495	0.500	99.0%	
Chromium	6010B	0.513	0.500	103%	
Copper	6010B	0.503	0.500	101%	
Lead	6010B	1.89	2.00	94.5%	
Mercury	7470A	0.0021	0.0020	105%	
Nickel	6010B	0.47	0.50	94.0%	
Selenium	6010B	1.89	2.00	94.5%	
Thallium	6010B	1.91	2.00	95.5%	
Vanadium	6010B	0.504	0.500	101%	
Zinc	6010B	0.48	0.50	96.0%	

Reported in mg/L

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-031
SAMPLE

Lab Sample ID: TK51K
LIMS ID: 11-18899
Matrix: Water
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/01/11	6010B	09/06/11	7429-90-5	Aluminum	0.0257	0.05	0.05	U
200.8	09/01/11	200.8	09/06/11	7440-38-2	Arsenic	0.000200	0.0002	0.0002	U
3010A	09/01/11	6010B	09/06/11	7440-43-9	Cadmium	0.00018	0.002	0.002	U
3010A	09/01/11	6010B	09/06/11	7440-47-3	Chromium	0.00124	0.005	0.005	U
3010A	09/01/11	6010B	09/06/11	7440-50-8	Copper	0.00092	0.002	0.002	U
3010A	09/01/11	6010B	09/06/11	7439-92-1	Lead	0.0016	0.02	0.02	U
7470A	09/01/11	7470A	09/06/11	7439-97-6	Mercury	0.000007	0.0001	0.0001	U
3010A	09/01/11	6010B	09/06/11	7440-02-0	Nickel	0.0039	0.01	0.01	U
3010A	09/01/11	6010B	09/06/11	7782-49-2	Selenium	0.0050	0.05	0.05	U
3010A	09/01/11	6010B	09/06/11	7440-28-0	Thallium	0.0031	0.05	0.05	U
3010A	09/01/11	6010B	09/06/11	7440-62-2	Vanadium	0.00027	0.003	0.003	U
3010A	09/01/11	6010B	09/06/11	7440-66-6	Zinc	0.0014	0.01	0.01	U

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-031
DUPLICATE

Lab Sample ID: TK51K
LIMS ID: 11-18899
Matrix: Water
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Aluminum	6010B	0.05 U	0.05 U	0.0%	+/- 0.05	L
Arsenic	200.8	0.0002 U	0.0002 U	0.0%	+/- 0.0002	L
Cadmium	6010B	0.002 U	0.002 U	0.0%	+/- 0.002	L
Chromium	6010B	0.005 U	0.005 U	0.0%	+/- 0.005	L
Copper	6010B	0.002 U	0.002 U	0.0%	+/- 0.002	L
Lead	6010B	0.02 U	0.02 U	0.0%	+/- 0.02	L
Mercury	7470A	0.0001 U	0.0001 U	0.0%	+/- 0.0001	L
Nickel	6010B	0.01 U	0.01 U	0.0%	+/- 0.01	L
Selenium	6010B	0.05 U	0.05 U	0.0%	+/- 0.05	L
Thallium	6010B	0.05 U	0.05 U	0.0%	+/- 0.05	L
Vanadium	6010B	0.003 U	0.003 U	0.0%	+/- 0.003	L
Zinc	6010B	0.01 U	0.01 U	0.0%	+/- 0.01	L

Reported in mg/L

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-031
MATRIX SPIKE

Lab Sample ID: TK51K
LIMS ID: 11-18899
Matrix: Water
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Aluminum	6010B	0.05 U	2.03	2.00	102%	
Arsenic	200.8	0.0002 U	0.0264	0.0250	106%	
Cadmium	6010B	0.002 U	0.509	0.500	102%	
Chromium	6010B	0.005 U	0.521	0.500	104%	
Copper	6010B	0.002 U	0.496	0.500	99.2%	
Lead	6010B	0.02 U	1.93	2.00	96.5%	
Mercury	7470A	0.0001 U	0.0010	0.0010	100%	
Nickel	6010B	0.010 U	0.485	0.500	97.0%	
Selenium	6010B	0.05 U	1.91	2.00	95.5%	
Thallium	6010B	0.05 U	1.94	2.00	97.0%	
Vanadium	6010B	0.003 U	0.519	0.500	104%	
Zinc	6010B	0.010 U	0.486	0.500	97.2%	

Reported in mg/L

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: METHOD BLANK

Lab Sample ID: TK51MB
LIMS ID: 11-18890
Matrix: Soil
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
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	09/02/11	6010B	09/06/11	7429-90-5	Aluminum	3.6	5	5	U
3050B	09/02/11	200.8	09/06/11	7440-38-2	Arsenic	0.087	0.2	0.2	U
3050B	09/02/11	6010B	09/06/11	7440-43-9	Cadmium	0.11	0.2	0.2	U
3050B	09/02/11	6010B	09/06/11	7440-47-3	Chromium	0.27	0.5	0.5	U
3050B	09/02/11	6010B	09/06/11	7440-50-8	Copper	0.050	0.2	0.2	U
3050B	09/02/11	6010B	09/06/11	7439-92-1	Lead	0.13	2	2	U
CLP	09/02/11	7471A	09/06/11	7439-97-6	Mercury	0.0013	0.02	0.02	U
3050B	09/02/11	6010B	09/06/11	7440-02-0	Nickel	0.30	1	1	U
3050B	09/02/11	6010B	09/06/11	7782-49-2	Selenium	0.65	5	5	U
3050B	09/02/11	6010B	09/06/11	7440-28-0	Thallium	0.53	5	5	U
3050B	09/02/11	6010B	09/06/11	7440-62-2	Vanadium	0.060	0.3	0.3	U
3050B	09/02/11	6010B	09/06/11	7440-66-6	Zinc	0.12	1	1	U

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: TK51LCS
LIMS ID: 11-18890
Matrix: Soil
Data Release Authorized:
Reported: 09/07/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
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	28.4	25.0	114%	
Cadmium	6010B	51.5	50.0	103%	
Chromium	6010B	52.2	50.0	104%	
Copper	6010B	49.5	50.0	99.0%	
Lead	6010B	197	200	98.5%	
Mercury	7471A	0.53	0.50	106%	
Nickel	6010B	49	50	98.0%	
Selenium	6010B	199	200	99.5%	
Thallium	6010B	197	200	98.5%	
Vanadium	6010B	52.1	50.0	104%	
Zinc	6010B	49	50	98.0%	

Reported in mg/kg-dry

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

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS:ug/L

SDG: TK51

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Aluminum	AL	ICP	IP090671	2000.0	2004.93	100.2	2000.0	2038.55	101.9	1980.96	99.0	2019.69	101.0	1989.60	99.5	2005.24	100.3
Arsenic	AS	PMS	MS090681	50.0	50.18	100.4	50.0	50.33	100.7	50.36	100.7	50.03	100.1	50.49	101.0	50.14	100.3
Cadmium	CD	ICP	IP090671	1000.0	1042.50	104.3	1000.0	1038.38	103.8	1031.62	103.2	1026.07	102.6	1029.12	102.9	1024.29	102.4
Chromium	CR	ICP	IP090671	1000.0	1037.61	103.8	1000.0	1051.87	105.2	1020.13	102.0	1022.04	102.2	1020.73	102.1	1027.87	102.8
Copper	CU	ICP	IP090671	1000.0	1027.44	102.7	1000.0	1024.56	102.5	1031.24	103.1	1029.38	102.9	1030.38	103.0	1021.79	102.2
Lead	PB	ICP	IP090671	2000.0	1993.11	99.7	2000.0	1988.91	99.4	1954.78	97.7	1937.87	96.9	1929.48	96.5	1935.42	96.8
Mercury	HG	CVA	HG090601	8.0	8.29	103.6	4.0	4.18	104.5	4.16	104.0	4.19	104.8	4.21	105.3	4.25	106.3
Nickel	NI	ICP	IP090671	1000.0	1015.88	101.6	1000.0	1015.32	101.5	978.01	97.8	968.88	96.9	965.35	96.5	969.66	97.0
Selenium	SE	ICP	IP090671	2000.0	2022.45	101.1	2000.0	2016.43	100.8	1975.21	98.8	1946.81	97.3	1931.08	96.6	1942.54	97.1
Thallium	TL	ICP	IP090671	2000.0	1987.21	99.4	2000.0	1978.83	98.9	1937.62	96.9	1916.27	95.8	1900.09	95.0	1903.37	95.2
Vanadium	V	ICP	IP090671	1000.0	1008.10	100.8	1000.0	1002.84	100.3	1007.47	100.7	1000.11	100.0	1006.08	100.6	1000.65	100.1
Zinc	ZN	ICP	IP090671	1000.0	998.43	99.8	1000.0	1007.45	100.7	977.63	97.8	979.45	97.9	978.69	97.9	988.18	98.8

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

FORM II (1)

121 . 0012 . 1251

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS:ug/L

SDG: TK51

ANALYTE	EL	M	RUN	CCVTV	CCV6	%R	CCV7	%R	CCV8	%R	CCV9	%R	CCV10	%R	CCV11	%R
Aluminum	AL	ICP	IP090671	2000.0	1997.96	99.9	1987.52	99.4	1936.58	96.8	1957.12	97.9	1911.39	95.6	1977.99	98.9
Arsenic	AS	PMS	MS090681	50.0	50.04	100.1	49.95	99.9	50.25	100.5	50.43	100.9	50.25	100.5	50.22	100.4
Cadmium	CD	ICP	IP090671	1000.0	1008.86	100.9	1016.88	101.7	1024.73	102.5	1012.62	101.3	1010.08	101.0	1030.52	103.1
Chromium	CR	ICP	IP090671	1000.0	1008.05	100.8	1014.84	101.5	1015.31	101.5	1020.14	102.0	1001.12	100.1	1030.79	103.1
Copper	CU	ICP	IP090671	1000.0	1010.80	101.1	1016.38	101.6	1022.94	102.3	1016.18	101.6	1014.52	101.5	1030.36	103.0
Lead	PB	ICP	IP090671	2000.0	1907.19	95.4	1920.41	96.0	1927.30	96.4	1912.23	95.6	1903.57	95.2	1946.28	97.3
Mercury	HG	CVA	HG090601	4.0	4.27	106.8	4.32	108.0								
Nickel	NI	ICP	IP090671	1000.0	953.66	95.4	956.70	95.7	963.03	96.3	968.41	96.8	949.13	94.9	977.49	97.7
Selenium	SE	ICP	IP090671	2000.0	1910.99	95.5	1934.88	96.7	1925.30	96.3	1910.11	95.5	1902.13	95.1	1951.96	97.6
Thallium	TL	ICP	IP090671	2000.0	1881.02	94.1	1896.75	94.8	1906.37	95.3	1887.56	94.4	1883.14	94.2	1922.79	96.1
Vanadium	V	ICP	IP090671	1000.0	989.24	98.9	994.47	99.4	999.16	99.9	994.89	99.5	990.32	99.0	1007.75	100.8
Zinc	ZN	ICP	IP090671	1000.0	968.00	96.8	971.64	97.2	971.98	97.2	980.16	98.0	956.85	95.7	989.06	98.9

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

FORM II (1)

TK51.001122

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS:ug/L

SDG: TK51

ANALYTE	EL	M	RUN	CCVTV	CCV12	%R	CCV13	%R	CCV14	%R	CCV15	%R	CCV16	%R	CCV17	%R
Aluminum	AL	ICP	IP090671	2000.0	1974.16	98.7										
Arsenic	AS	PMS	MS090681	50.0	49.87	99.7										
Cadmium	CD	ICP	IP090671	1000.0	1024.84	102.5										
Chromium	CR	ICP	IP090671	1000.0	1023.33	102.3										
Copper	CU	ICP	IP090671	1000.0	1024.36	102.4										
Lead	PB	ICP	IP090671	2000.0	1945.44	97.3										
Mercury	HG	CVA	HG090601	4.0												
Nickel	NI	ICP	IP090671	1000.0	971.90	97.2										
Selenium	SE	ICP	IP090671	2000.0	1948.86	97.4										
Thallium	TL	ICP	IP090671	2000.0	1918.93	95.9										
Vanadium	V	ICP	IP090671	1000.0	1001.04	100.1										
Zinc	ZN	ICP	IP090671	1000.0	982.27	98.2										

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

TK51 : 00123

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK51

UNITS:ug/L

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Mercury	HG	CVA	HG090602	8.0	8.12	101.5	4.0	4.06	101.5	4.09	102.3						

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

TK51 00121

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS:ug/L

SDG: TK51

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	IP090671	50.0	58.39	**116.8**	47.22	**94.4**	51.87	**103.7**						
Arsenic	AS	PMS	MS090681	0.2	0.18	**90.0**										
Cadmium	CD	ICP	IP090671	2.0	1.79	**89.5**	1.98	**99.0**	2.23	**111.5**						
Chromium	CR	ICP	IP090671	5.0	6.21	**124.2**	5.12	**102.4**	6.00	**120.0**						
Copper	CU	ICP	IP090671	2.0	2.23	**111.5**	1.94	**97.0**	1.94	**97.0**						
Lead	PB	ICP	IP090671	20.0	21.61	**108.1**	19.87	**99.4**	20.44	**102.2**						
Mercury	HG	CVA	HG090601	0.1	0.09	**90.0**										
Nickel	NI	ICP	IP090671	10.0	8.06	**80.6**	10.87	**108.7**	9.94	**99.4**						
Selenium	SE	ICP	IP090671	50.0	57.96	**115.9**	53.98	**108.0**	51.71	**103.4**						
Thallium	TL	ICP	IP090671	50.0	49.60	**99.2**	48.98	**98.0**	51.38	**102.8**						
Vanadium	V	ICP	IP090671	3.0	2.94	**98.0**	3.00	**100.0**	2.96	**98.7**						
Zinc	ZN	ICP	IP090671	10.0	10.56	**105.6**	9.54	**95.4**	9.78	**97.8**						

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

FORM II (2)

TK51.00125

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS: ug/L

SDG: TK51

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
Mercury	HG	CVA	HG090602		0.1	0.10	**100.0**										

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

FORM II (2)

TK51 : 00126

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS:ug/L

SDG: TK51

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Aluminum	AL	ICP	IP090671	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	MS090681	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	IP090671	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	IP090671	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	IP090671	25.0	2.0	2.0	U	2.0	U	2.0	U	3.2	B	2.0	U	2.0	U
Lead	PB	ICP	IP090671	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	HG090601	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	IP090671	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	IP090671	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	IP090671	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	IP090671	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	IP090671	20.0	10.0	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U

TK51.00127

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS: ug/L

SDG: TK51

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB6	C	CCB7	C	CCB8	C	CCB9	C	CCB10	C	CCB11	C
Aluminum	AL	ICP	IP090671	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	MS090681	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	IP090671	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	IP090671	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	IP090671	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	IP090671	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	HG090601	0.2	0.1	0.1	U	0.1	U								
Nickel	NI	ICP	IP090671	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	IP090671	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	IP090671	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	IP090671	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	IP090671	20.0	10.0	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U

TK51 . 00128

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS: ug/L

SDG: TK51

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB12	C	CCB13	C	CCB14	C	CCB15	C	CCB16	C	CCB17	C
Aluminum	AL	ICP	IP090671	200.0	50.0	50.0	U										
Arsenic	AS	PMS	MS090681	10.0	0.2	0.2	U										
Cadmium	CD	ICP	IP090671	5.0	2.0	2.0	U										
Chromium	CR	ICP	IP090671	10.0	5.0	5.0	U										
Copper	CU	ICP	IP090671	25.0	2.0	2.0	U										
Lead	PB	ICP	IP090671	3.0	20.0	20.0	U										
Mercury	HG	CVA	HG090601	0.2	0.1												
Nickel	NI	ICP	IP090671	40.0	10.0	10.0	U										
Selenium	SE	ICP	IP090671	5.0	50.0	50.0	U										
Thallium	TL	ICP	IP090671	10.0	50.0	50.0	U										
Vanadium	V	ICP	IP090671	50.0	3.0	3.0	U										
Zinc	ZN	ICP	IP090671	20.0	10.0	10.0	U										

TK51.00125

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS: ug/L

SDG: TK51

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Mercury	HG	CVA	HG090602	0.2	0.1	0.1	U	0.1	U	0.1	U						

TK51 . 00120

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ICS SOURCE: I.V.

PROJECT: FRP Shoreline Invest

RUNID: IP090671

SDG: TK51

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	197591.6	194997.3	**97.5**	193988.4	194993.9	**97.5**	195652.0	197125.3	**98.6**
Antimony		1000	-2.6	939.2	**93.9**	-3.6	922.2	**92.2**	-1.6	934.2	**93.4**
Arsenic		1000	12.2	1014.6	**101.5**	11.9	980.1	**98.0**	7.3	992.5	**99.3**
Barium		1000	0.1	986.9	**98.7**	-1.0	965.8	**96.6**	-1.3	976.3	**97.6**
Beryllium		1000	0.1	975.4	**97.5**	0.1	957.8	**95.8**	0.1	969.4	**96.9**
Boron			-6.7	-6.7		-9.1	-8.3		-8.9	-7.2	
Cadmium		1000	1.4	1002.6	**100.3**	1.6	996.3	**99.6**	1.5	1003.0	**100.3**
Calcium	100000	100000	101272.6	99974.9	**100.0**	99832.4	100525.5	**100.5**	101506.0	101400.6	**101.4**
Chromium		1000	1.6	1005.4	**100.5**	-0.2	1003.4	**100.3**	1.2	1014.5	**101.5**
Cobalt		1000	1.1	982.3	**98.2**	1.1	970.9	**97.1**	1.2	956.7	**95.7**
Copper		1000	-2.3	1017.1	**101.7**	-2.2	1027.7	**102.8**	-2.2	1037.8	**103.8**
Iron	200000	200000	195338.4	189678.5	**94.8**	187907.9	186165.6	**93.1**	190270.8	188188.7	**94.1**
Lead		1000	1.4	971.6	**97.2**	-0.4	946.0	**94.6**	0.1	955.7	**95.6**
Magnesium	100000	100000	101649.3	96406.2	**96.4**	100114.8	96357.0	**96.4**	99958.0	97486.0	**97.5**
Manganese		1000	0.2	942.3	**94.2**	-0.2	919.8	**92.0**	-0.1	928.9	**92.9**
Molybdenum			1.1	0.6		1.2	0.9		1.6	0.8	
Nickel		1000	1.6	941.7	**94.2**	3.0	919.4	**91.9**	1.7	926.7	**92.7**
Potassium			64.8	297.2		33.8	269.0		37.5	274.7	
Selenium		1000	20.1	1014.2	**101.4**	12.9	972.3	**97.2**	12.7	978.8	**97.9**
Silicon			6.4	-3.9		-7.4	-1.4		-1.6	0.6	
Silver		1000	-0.5	1006.5	**100.7**	-0.3	972.5	**97.3**	-0.7	981.3	**98.1**
Sodium			2.7	1.3		9.7	5.4		5.6	1.9	
Strontium			10.4	10.2		10.4	10.2		10.3	10.4	
Thallium		1000	10.3	963.7	**96.4**	8.8	928.8	**92.9**	10.7	937.0	**93.7**
Tin			0.5	0.3		-1.3	-2.0		-1.6	-2.1	
Titanium			9.1	9.9		7.9	8.0		8.9	9.1	
Vanadium		1000	9.3	973.5	**97.4**	7.4	978.4	**97.8**	7.6	989.4	**98.9**
Zinc		1000	-6.2	925.6	**92.6**	-7.2	923.5	**92.4**	-6.5	933.6	**93.4**

TK51.00131

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ICS SOURCE: I.V.

PROJECT: FRP Shoreline Invest

RUNID: MS090681

SDG: TK51

INSTRUMENT ID: PE ELAN 6000

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Aluminum	20000	20000	19996.5	19808.1	**99.0**						
Antimony			0.1	0.1							
Arsenic		20	0.0	19.5	**97.5**						
Cadmium		20	0.0	19.9	**99.5**						
Chromium		20	0.5	20.6	**103.0**						
Cobalt		20	0.1	19.6	**98.0**						
Copper		20	0.5	20.5	**102.5**						
Iron	20000	20000	20137.2	20309.4	**101.5**						
Manganese		20	0.7	20.6	**103.0**						
Molybdenum	400	400	417.9	421.0	**105.3**						
Nickel		20	0.6	20.1	**100.5**						
Selenium			0.0	-0.1							
Silver		20	0.0	19.2	**96.0**						
Vanadium			0.0	-0.4							
Zinc		20	1.0	20.5	**102.5**						

TK51.090132

Post Digest Spike Sample Recovery

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

ANALYSIS METHOD: ICP

SDG: TK51

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	RUNID	SPIKED SAMPLE RESULT C	SAMPLE RESULT C	SPIKE ADDED	MATRIX	%R
Copper	FRP-083011-021A	TK51APOST	IP090671	2727.47	1795.42	1000	Soil	93.2

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

ANALYSIS METHOD: ICP

SDG: TK51

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-083011-021L	TK51A-L	Soil	IP090671	99665.90		97772.05		1.9	
Cadmium	FRP-083011-021L	TK51A-L	Soil	IP090671	3.96	B	10.00	U	100.0	
Chromium	FRP-083011-021L	TK51A-L	Soil	IP090671	218.36		224.85		3.0	
Copper	FRP-083011-021L	TK51A-L	Soil	IP090671	897.71		887.95		1.1	
Lead	FRP-083011-021L	TK51A-L	Soil	IP090671	110.19		108.20		1.8	
Nickel	FRP-083011-021L	TK51A-L	Soil	IP090671	138.27		144.95	B	4.8	
Selenium	FRP-083011-021L	TK51A-L	Soil	IP090671	-0.25	U	250.00	U		
Thallium	FRP-083011-021L	TK51A-L	Soil	IP090671	11.76	U	250.00	U		
Vanadium	FRP-083011-021L	TK51A-L	Soil	IP090671	450.85		462.70		2.6	
Zinc	FRP-083011-021L	TK51A-L	Soil	IP090671	451.51		463.20		2.6	

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

ANALYSIS METHOD: ICP

SDG: TK51

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	MATRIX	RUNID	INITIAL SAMPLE RESULT (I)	C	SERIAL DILUTION RESULT (S)	C	% DIFFERENCE	Q
Aluminum	FRP-083011-031L	TK51K-L	Water	IP090671	9.52	U	250.00	U		
Cadmium	FRP-083011-031L	TK51K-L	Water	IP090671	0.09	U	10.00	U		
Chromium	FRP-083011-031L	TK51K-L	Water	IP090671	1.13	U	25.00	U		
Copper	FRP-083011-031L	TK51K-L	Water	IP090671	0.63	U	10.00	U		
Lead	FRP-083011-031L	TK51K-L	Water	IP090671	-0.49	U	100.00	U		
Nickel	FRP-083011-031L	TK51K-L	Water	IP090671	-0.08	U	50.00	U		
Selenium	FRP-083011-031L	TK51K-L	Water	IP090671	-1.82	U	250.00	U		
Thallium	FRP-083011-031L	TK51K-L	Water	IP090671	-0.35	U	250.00	U		
Vanadium	FRP-083011-031L	TK51K-L	Water	IP090671	-0.02	U	15.00	U		
Zinc	FRP-083011-031L	TK51K-L	Water	IP090671	0.29	U	50.00	U		

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

ANALYSIS METHOD: PMS

SDG: TK51

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-083011-021L	TK51A-L	Soil	MS090681	6.30	B	6.85	B	8.7	

FORM IX

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

ANALYSIS METHOD: PMS

SDG: TK51

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	MATRIX	RUNID	INITIAL SAMPLE RESULT (I)	C	SERIAL DILUTION RESULT (S)	C	% DIFFERENCE	Q
Arsenic	FRP-083011-031L	TK51K-L	Water	MS090681	0.00	U	-0.05	B		

FORM IX

IDLs and ICP Linear Ranges

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK51 UNITS: ug/L

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

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

IEC DATE: 7/29/2011

SDG: TK51

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	0.0782700	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	0.0725549
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	0.0153433	0.0000000	0.0000000	0.0000000	0.0000000	-0.0413852
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	-0.0576582
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	-0.1933070	0.0000000	0.0000000	0.0000000	-0.0313291	0.0000000	0.0000000	-2.3072100	1.2452600	0.0604941
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.1350880	0.0000000	-1.6380600	-1.2519300	0.0000000	0.6248050
Manganese	257.61	0.0065894	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.0058926
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0213077	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	0.0729253	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	12.3032000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0697991	0.0000000	1.7836600	0.3510820	0.0000000	-0.1057610
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	-0.1956000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	0.0000000	0.0000000	0.1325580	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	0.0656240
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.1475900	0.0000000	0.0387756

TK51.00135

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

IEC DATE: 7/29/2011

SDG: TK51

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	0.0546494	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	0.0041446	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	0.0052560	0.0000000	0.0000000	0.0000000	-0.2175850	0.0000000	0.0000000	0.0000000	-0.0271775	0.0000000
Molybdenum	202.03	0.0117204	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	0.0551056	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	288.16	-0.1370260	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

TICS1 : 0001 40

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK51

ANALYSIS METHOD: ICP

ARI PREP CODE: SWC

PREPDATE: 9/2/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-083011-021	TK51A	1.035	0.0	50.0
FRP-083011-021D	TK51ADUP	1.037	0.0	50.0
FRP-083011-021S	TK51ASPK	1.031	0.0	50.0
FRP-083011-022	TK51B	1.048	0.0	50.0
FRP-083011-023	TK51C	1.062	0.0	50.0
FRP-083011-024	TK51D	1.061	0.0	50.0
FRP-083011-025	TK51E	1.004	0.0	50.0
FRP-083011-026	TK51F	1.055	0.0	50.0
FRP-083011-027	TK51G	1.052	0.0	50.0
FRP-083011-028	TK51H	1.070	0.0	50.0
FRP-083011-029	TK51I	1.082	0.0	50.0
PBS	TK51MB1	1.000	0.0	50.0
LCSS	TK51MB1SPK	1.000	0.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ANALYSIS METHOD: ICP

PROJECT: FRP Shoreline Invest

ARI PREP CODE: TWC

SDG: TK51

PREPDATE: 9/1/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-083011-031	TK51K	0.000	50.0	50.0
FRP-083011-031D	TK51KDUP	0.000	50.0	50.0
FRP-083011-031S	TK51KSPK	0.000	50.0	50.0
PBW	TK51MB2	0.000	50.0	50.0
LCSW	TK51MB2SPK	0.000	50.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK51

ANALYSIS METHOD: PMS

ARI PREP CODE: SWN

PREPDATE: 9/2/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-083011-021	TK51A	1.028	0.0	50.0
FRP-083011-021D	TK51ADUP	1.032	0.0	50.0
FRP-083011-021S	TK51ASPK	1.028	0.0	50.0
FRP-083011-022	TK51B	1.024	0.0	50.0
FRP-083011-023	TK51C	1.071	0.0	50.0
FRP-083011-024	TK51D	1.075	0.0	50.0
FRP-083011-025	TK51E	1.032	0.0	50.0
FRP-083011-026	TK51F	1.010	0.0	50.0
FRP-083011-027	TK51G	1.066	0.0	50.0
FRP-083011-028	TK51H	1.011	0.0	50.0
FRP-083011-029	TK51I	1.033	0.0	50.0
PBS	TK51MB1	1.000	0.0	50.0
LCSS	TK51MB1SPK	1.000	0.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK51

ANALYSIS METHOD: PMS

ARI PREP CODE: REN

PREPDATE: 9/1/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-083011-031	TK51K	0.000	50.0	25.0
FRP-083011-031D	TK51KDUP	0.000	50.0	25.0
FRP-083011-031S	TK51KSPK	0.000	50.0	25.0
PBW	TK51MB2	0.000	50.0	25.0
LCSW	TK51MB2SPK	0.000	50.0	25.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ANALYSIS METHOD: CVA

PROJECT: FRP Shoreline Invest

ARI PREP CODE: TWM

SDG: TK51

PREPDATE: 9/1/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-083011-031	TK51K	0.000	20.0	20.0
FRP-083011-031D	TK51KDUP	0.000	20.0	20.0
FRP-083011-031S	TK51KSPK	0.000	20.0	20.0
PBW	TK51MB2	0.000	20.0	20.0
LCSW	TK51MB2SPK	0.000	20.0	20.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK51

ANALYSIS METHOD: CVA

ARI PREP CODE: SMM

PREPDATE: 9/2/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-083011-021	TK51A	0.230	0.0	50.0
FRP-083011-021D	TK51ADUP	0.228	0.0	50.0
FRP-083011-021S	TK51ASPK	0.229	0.0	50.0
FRP-083011-022	TK51B	0.271	0.0	50.0
FRP-083011-023	TK51C	0.266	0.0	50.0
FRP-083011-024	TK51D	0.210	0.0	50.0
FRP-083011-025	TK51E	0.276	0.0	50.0
FRP-083011-026	TK51F	0.252	0.0	50.0
FRP-083011-027	TK51G	0.241	0.0	50.0
FRP-083011-028	TK51H	0.229	0.0	50.0
FRP-083011-029	TK51I	0.207	0.0	50.0
PBS	TK51MB1	0.200	0.0	50.0
LCSW	TK51MB1SPK	0.200	0.0	50.0

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest | INSTRUMENT ID: OPTIMA ICP 2 | START DATE: 9/6/2011

SDG: TK51 | RUNID: IP090671 METHOD: ICP | END DATE: 9/6/2011

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	10154			X						X		X	X								X	X		X				X		X	X
S2	S2	1.00	10195									X		X	X																	X	
S3	S3	1.00	10214																				X	X		X				X			X
S4	S4	1.00	10240																														
S5	S5	1.00	10262			X																											
ICV	ICV	1.00	10311			X						X		X	X								X	X		X				X		X	X
ICB	ICB	1.00	10351			X						X		X	X								X	X		X				X		X	X
CRI	CRII	1.00	10392			X						X		X	X								X	X		X				X		X	X
ICSA	ICSAI	1.00	10433			X						X		X	X								X	X		X				X		X	X
ICSAB	ICSABI	1.00	10474			X						X		X	X								X	X		X				X		X	X
CCV	CCV1	1.00	10512			X						X		X	X								X	X		X				X		X	X
CCB	CCB1	1.00	10552			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TK72MB	5.00	10593																														
ZZZZZZ	TK72ADUP	5.00	11040																														
ZZZZZZ	TK72A	5.00	11082																														
ZZZZZZ	TK72ASPK	5.00	11123																														
ZZZZZZ	TK35B	2.00	11165																														
ZZZZZZ	TK35C	2.00	11204																														
ZZZZZZ	TK35D	2.00	11244																														
ZZZZZZ	TK35E	2.00	11284																														
ZZZZZZ	TK35F	2.00	11324																														
ZZZZZZ	TK35G	2.00	11363																														
CCV	CCV2	1.00	11403			X						X		X	X								X	X		X				X		X	X
CCB	CCB2	1.00	11443			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TK35MB1	2.00	11484																														
ZZZZZZ	ZZZZZZ	10.00	11525																														
ZZZZZZ	TK35A	2.00	11565																														
ZZZZZZ	TK35ADUP	2.00	12010																														
ZZZZZZ	TK35ASPK	2.00	12050																														
ZZZZZZ	ZZZZZZ	2.00	12092																														
ZZZZZZ	TK35H	2.00	12132																														
ZZZZZZ	TK35I	2.00	12172																														
ZZZZZZ	TK35J	2.00	12211																														
ZZZZZZ	TK35MB1SPK	2.00	12251																														
CCV	CCV3	1.00	12291			X						X		X	X								X	X		X				X		X	X

FORM XIV

TK51.00417

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/6/2011

SDG: TK51 RUNID: IP090671 METHOD: ICP END DATE: 9/6/2011

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	12331			X						X		X	X								X	X		X				X		X	X
FRP-083011-022	TK51B	2.00	12372																														
FRP-083011-023	TK51C	2.00	12412																														
ZZZZZZ	TK35K	2.00	12451																														
ZZZZZZ	TK35L	2.00	12491																														
ZZZZZZ	TK35M	2.00	12531																														
ZZZZZZ	TK35N	2.00	12570																														
ZZZZZZ	TK35O	2.00	13010																														
ZZZZZZ	TK35P	2.00	13050																														
ZZZZZZ	TK35Q	2.00	13090																														
CCV	CCV4	1.00	13260			X						X		X	X								X	X		X				X		X	X
CCB	CCB4	1.00	13300			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TK35MB1	2.00	13341																														
ZZZZZZ	TK35A-L	10.00	13382																														
ZZZZZZ	TK35A	2.00	13421																														
ZZZZZZ	TK35ADUP	2.00	13461																														
ZZZZZZ	TK35ASPK	2.00	13502																														
ZZZZZZ	D1	2.00	13580																														
ZZZZZZ	D2	2.00	14021																														
ZZZZZZ	D3	2.00	14063																														
ZZZZZZ	TK35MB1SPK	2.00	14103																														
CCV	CCV5	1.00	14142			X						X		X	X								X	X		X				X		X	X
CCB	CCB5	1.00	14182			X						X		X	X								X	X		X				X		X	X
FRP-083011-022	TK51B	2.00	14223			X						X		X	X								X	X		X				X		X	X
FRP-083011-023	TK51C	2.00	14263			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TK35K	2.00	14303																														
ZZZZZZ	TK35L	2.00	14343																														
ZZZZZZ	TK35M	2.00	14382																														
ZZZZZZ	TK35N	2.00	14422																														
ZZZZZZ	TK35O	2.00	14462																														
ZZZZZZ	TK35P	2.00	14501																														
ZZZZZZ	TK35Q	2.00	14541																														
ZZZZZZ	TK35R	2.00	14581																														
CCV	CCV6	1.00	15021			X						X		X	X								X	X		X				X		X	X
CCB	CCB6	1.00	15060			X						X		X	X								X	X		X				X		X	X

FORM XIV

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/6/2011

SDG: TK51 RUNID: IP090671 METHOD: ICP END DATE: 9/6/2011

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	TK35H	2.00	15102																														
ZZZZZZ	TK35I	2.00	15141																														
ZZZZZZ	TK35J	2.00	15181																														
CCV	CCV7	1.00	15221			X						X		X	X								X	X		X				X		X	X
CCB	CCB7	1.00	15261			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	ZZZZZZ	1.00	15302																														
S0	S0	1.00	15350			X						X		X	X								X	X		X				X		X	X
CCV	CCV8	1.00	15385			X						X		X	X								X	X		X				X		X	X
CCB	CCB8	1.00	15425			X						X		X	X								X	X		X				X		X	X
CRI	CRIF	1.00	15470			X						X		X	X								X	X		X				X		X	X
ICSA	ICSAF	1.00	15512			X						X		X	X								X	X		X				X		X	X
ICSAB	ICSABF	1.00	15553			X						X		X	X								X	X		X				X		X	X
CCV	CCV9	1.00	15591			X						X		X	X								X	X		X				X		X	X
CCB	CCB9	1.00	16031			X						X		X	X								X	X		X				X		X	X
PBW	TK51MB2	1.00	16072			X						X		X	X								X	X		X				X		X	X
FRP-083011-031L	TK51K-L	5.00	16113			X						X		X	X								X	X		X				X		X	X
FRP-083011-031	TK51K	1.00	16154			X						X		X	X								X	X		X				X		X	X
FRP-083011-031D	TK51KDUP	1.00	16195			X						X		X	X								X	X		X				X		X	X
FRP-083011-031S	TK51KSPK	1.00	16240			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	ZZZZZZ	1.00	16280																														
FRP-083011-024	TK51D	2.00	16320			X						X		X	X								X	X		X				X		X	X
FRP-083011-025	TK51E	2.00	16355			X						X		X	X								X	X		X				X		X	X
FRP-083011-026	TK51F	2.00	16395			X						X		X	X								X	X		X				X		X	X
LCSW	TK51MB2SPK	1.00	16435			X						X		X	X								X	X		X				X		X	X
CCV	CCV10	1.00	16474			X						X		X	X								X	X		X				X		X	X
CCB	CCB10	1.00	16514			X						X		X	X								X	X		X				X		X	X
PBS	TK51MB1	2.00	16555			X						X		X	X								X	X		X				X		X	X
FRP-083011-021L	TK51A-L	10.00	17000			X						X		X	X								X	X		X				X		X	X
FRP-083011-021	TK51A	2.00	17040			X						X		X	X								X	X		X				X		X	X
FRP-083011-021D	TK51ADUP	2.00	17080			X						X		X	X								X	X		X				X		X	X
FRP-083011-021S	TK51ASPK	2.00	17115			X						X		X	X								X	X		X				X		X	X
FRP-083011-021A	TK51APOST	2.00	17154												X																		
FRP-083011-027	TK51G	2.00	17192			X						X		X	X								X	X		X				X		X	X
FRP-083011-028	TK51H	2.00	17232			X						X		X	X								X	X		X				X		X	X
FRP-083011-029	TK51I	2.00	17272			X						X		X	X								X	X		X				X		X	X

FORM XIV

TK51 . 083011

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/6/2011

SDG: TK51 RUNID: IP090671 METHOD: ICP END DATE: 9/6/2011

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
LCSS	TK51MB1SPK	2.00	17312			X						X		X	X								X	X		X				X		X	X
CCV	CCV11	1.00	17352			X						X		X	X								X	X		X				X		X	X
CCB	CCB11	1.00	17392			X						X		X	X								X	X		X				X		X	X
CRI	CRIF1	1.00	17433			X						X		X	X								X	X		X				X		X	X
ICSA	ICSAF1	1.00	17474			X						X		X	X								X	X		X				X		X	X
ICSAB	ICSABF1	1.00	17515			X						X		X	X								X	X		X				X		X	X
CCV	CCV12	1.00	17553			X						X		X	X								X	X		X				X		X	X
CCB	CCB12	1.00	17593			X						X		X	X								X	X		X				X		X	X

TK51 . 001 50

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/6/2011

SDG: TK51 RUNID: MS090681 METHOD: PMS END DATE: 9/7/2011

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	09090				X																										
S1	S1	1.00	09170				X																										
S2	S2	1.00	09240				X																										
S3	S3	1.00	09320				X																										
S4	S4	1.00	09400				X																										
ZZZZZZ	Rinse Sampl	1.00	09470																														
ICV	MICV	1.00	09570				X																										
ICB	ICB	1.00	10040				X																										
CCV	MCCV1	1.00	10110				X																										
CCB	CCB1	1.00	10190				X																										
CRI	MCRI	1.00	10260				X																										
ICSA	ICSAI	1.00	10330				X																										
ICSAB	ICSABI	1.00	10410				X																										
ZZZZZZ	LR200	1.00	10490																														
ZZZZZZ	LR300	1.00	10560																														
CCV	MCCV2	1.00	11040				X																										
CCB	CCB2	1.00	11110				X																										
ZZZZZZ	TJ71RMB2	2.00	11190																														
ZZZZZZ	TK36MB1	2.00	11260																														
ZZZZZZ	TK36MB1SPK	2.00	11320																														
ZZZZZZ	TK36A-L	10.00	11390																														
ZZZZZZ	TK36A	2.00	11460																														
ZZZZZZ	TK36ADUP	2.00	11520																														
ZZZZZZ	TK36ASPK	2.00	11590																														
ZZZZZZ	TK24A	2.00	12060																														
ZZZZZZ	TK24B	2.00	12130																														
ZZZZZZ	TK24C	2.00	12190																														
CCV	MCCV3	1.00	12260				X																										
CCB	CCB3	1.00	12330				X																										
ZZZZZZ	TK24MB1	2.00	12410																														
ZZZZZZ	TK24MB1SPK	2.00	12480																														
ZZZZZZ	TK24G-L	10.00	12540																														
ZZZZZZ	TK24G	2.00	13010																														
ZZZZZZ	TK24GDUP	2.00	13080																														
ZZZZZZ	TK24GSPK	2.00	13140																														

FORM XIV

TK51:00151

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/6/2011

SDG: TK51 RUNID: MS090681 METHOD: PMS END DATE: 9/7/2011

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	TK24N-L	10.00	13210																														
ZZZZZZ	TK24N	2.00	13280																														
ZZZZZZ	TK24NDUP	2.00	13340																														
ZZZZZZ	TK24NSPK	2.00	13410																														
CCV	MCCV4	1.00	13480				X																										
CCB	CCB4	1.00	13550				X																										
ZZZZZZ	TK24MB2	2.00	14040																														
ZZZZZZ	TK24MB2SPK	2.00	14100																														
ZZZZZZ	TK24D	2.00	14170																														
ZZZZZZ	TK24E	2.00	14240																														
ZZZZZZ	TK24F	2.00	14310																														
ZZZZZZ	TK24H	2.00	14370																														
ZZZZZZ	TK24I	2.00	14440																														
ZZZZZZ	TK24J	2.00	14510																														
ZZZZZZ	TK24K	2.00	14580																														
ZZZZZZ	TK24L	2.00	15040																														
CCV	MCCV5	1.00	15110				X																										
CCB	CCB5	1.00	15180				X																										
ZZZZZZ	TK35MB1	20.00	15280																														
ZZZZZZ	TK35MB1SPK	20.00	15350																														
ZZZZZZ	TK24M	2.00	15420																														
ZZZZZZ	TK35B	20.00	15480																														
ZZZZZZ	TK35C	20.00	15550																														
ZZZZZZ	TK35D	20.00	16020																														
ZZZZZZ	TK35E	20.00	16080																														
ZZZZZZ	TK35F	20.00	16150																														
ZZZZZZ	TK35G	20.00	16220																														
ZZZZZZ	TK35H	20.00	16280																														
CCV	MCCV6	1.00	16350				X																										
CCB	CCB6	1.00	16430				X																										
ZZZZZZ	TK35A-L	100.00	16500																														
ZZZZZZ	TK35A	20.00	16570																														
ZZZZZZ	TK35ADUP	20.00	17030																														
ZZZZZZ	TK35ASPK	20.00	17100																														
ZZZZZZ	ZZZZZZ	20.00	17170																														

FORM XIV

TK51-00152

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/6/2011

SDG: TK51 RUNID: MS090681 METHOD: PMS END DATE: 9/7/2011

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	TK35I	20.00	17230																														
ZZZZZZ	TK35J	20.00	17300																														
ZZZZZZ	TK35K	20.00	17370																														
ZZZZZZ	TK35L	20.00	17430																														
ZZZZZZ	TK35M	20.00	17500																														
CCV	MCCV7	1.00	17570				X																										
CCB	CCB7	1.00	18040				X																										
ZZZZZZ	TK35N	20.00	18120																														
ZZZZZZ	TK35O	20.00	18180																														
ZZZZZZ	TK35P	20.00	18250																														
ZZZZZZ	TK35Q	20.00	18320																														
ZZZZZZ	TK35R	20.00	18380																														
ZZZZZZ	TK37B	20.00	18450																														
ZZZZZZ	TK37C	20.00	18520																														
ZZZZZZ	TK37D	20.00	18590																														
ZZZZZZ	TK37E	20.00	19050																														
ZZZZZZ	TK37F	20.00	19120																														
CCV	MCCV8	1.00	19190				X																										
CCB	CCB8	1.00	19260				X																										
ZZZZZZ	TK37MB1	20.00	19340																														
ZZZZZZ	TK37MB1SPK	20.00	19400																														
ZZZZZZ	TK37A-L	100.00	19470																														
ZZZZZZ	TK37A	20.00	19530																														
ZZZZZZ	TK37ADUP	20.00	20000																														
ZZZZZZ	TK37ASPK	20.00	20070																														
ZZZZZZ	TK37G	20.00	20130																														
ZZZZZZ	TK37H	20.00	20200																														
ZZZZZZ	TK37I	20.00	20270																														
FRP-083011-022	TK51B	20.00	20340				X																										
CCV	MCCV9	1.00	20400				X																										
CCB	CCB9	1.00	20480				X																										
ZZZZZZ	TK39MB	20.00	20550																														
ZZZZZZ	TK39MBSPK	20.00	21020																														
ZZZZZZ	TK39A	20.00	21080																														
FRP-083011-021L	TK51A-L	100.00	21150				X																										

FORM XIV

TK51 : 008153

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/6/2011

SDG: TK51 RUNID: MS090681 METHOD: PMS END DATE: 9/7/2011

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-083011-021	TK51A	20.00	21220				X																										
FRP-083011-021D	TK51ADUP	20.00	21290				X																										
FRP-083011-021S	TK51ASPK	20.00	21350				X																										
ZZZZZZ	ZZZZZZ	20.00	21420																														
FRP-083011-023	TK51C	20.00	21490				X																										
FRP-083011-024	TK51D	20.00	21550				X																										
CCV	MCCV10	1.00	22020				X																										
CCB	CCB10	1.00	22090				X																										
PBW	TK51MB2	2.00	22170				X																										
LCSW	TK51MB2SPK	2.00	22230				X																										
FRP-083011-031L	TK51K-L	10.00	22300				X																										
FRP-083011-031	TK51K	2.00	22370				X																										
FRP-083011-031D	TK51KDUP	2.00	22430				X																										
FRP-083011-031S	TK51KSPK	2.00	22500				X																										
FRP-083011-025	TK51E	20.00	22570				X																										
FRP-083011-026	TK51F	20.00	23040				X																										
FRP-083011-027	TK51G	20.00	23100				X																										
FRP-083011-028	TK51H	20.00	23170				X																										
CCV	MCCV11	1.00	23240				X																										
CCB	CCB11	1.00	23310				X																										
PBS	TK51MB1	20.00	23380				X																										
ZZZZZZ	TK20MB1	20.00	23450																														
ZZZZZZ	TK20MB1SPK	20.00	23520																														
LCSS	TK51MB1SPK	20.00	23580				X																										
FRP-083011-029	TK51I	20.00	00058				X																										
ZZZZZZ	TK20REF1	50.00	00127																														
ZZZZZZ	TK20ADUP	20.00	00187																														
ZZZZZZ	TK20A	20.00	00257																														
ZZZZZZ	TK20ASPK	20.00	00328																														
CCV	MCCV12	1.00	00380				X																										
CCB	CCB12	1.00	00462				X																										

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: CETAC MERCURY START DATE: 9/6/2011

SDG: TK51 RUNID: HG090601 METHOD: CVA END DATE: 9/6/2011

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	09295														X																
S0.1	S0.1	1.00	09313														X																
S0.5	S0.5	1.00	09330														X																
S1	S1	1.00	09344														X																
S2	S2	1.00	09362														X																
S5	S5	1.00	09380														X																
S10	S10	1.00	09394														X																
ICV	AICV	1.00	09425														X																
ICB	ICB	1.00	09442														X																
CCV	ACCV1	1.00	09460														X																
CCB	CCB1	1.00	09474														X																
CRA	CRA	1.00	09492														X																
ZZZZZZ	TJ59MB1	1.00	09505																														
ZZZZZZ	TJ59MB1SPK	1.00	09523																														
ZZZZZZ	TJ59REF1	5.00	09541																														
ZZZZZZ	TJ59B	1.00	09554																														
ZZZZZZ	TJ59BDUP	1.00	09572																														
ZZZZZZ	TJ59BSPK	1.00	09590																														
ZZZZZZ	TJ60A	1.00	10003																														
ZZZZZZ	TJ60B	1.00	10021																														
ZZZZZZ	TJ60C	1.00	10035																														
CCV	ACCV2	1.00	10053														X																
CCB	CCB2	1.00	10071														X																
ZZZZZZ	TJ60D	1.00	10085																														
ZZZZZZ	TK20MB1	1.00	10102																														
ZZZZZZ	TK20MB1SPK	1.00	10120																														
ZZZZZZ	TK20REF1	5.00	10133																														
ZZZZZZ	TK20A	1.00	10151																														
ZZZZZZ	TK20ADUP	1.00	10165																														
ZZZZZZ	TK20ASPK	1.00	10182																														
ZZZZZZ	TK37MB1	1.00	10200																														
ZZZZZZ	TK37MB1SPK	1.00	10214																														
ZZZZZZ	TK37A	1.00	10231																														
CCV	ACCV3	1.00	10245														X																
CCB	CCB3	1.00	10263														X																

FORM XIV

TK51.00155

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: CETAC MERCURY START DATE: 9/6/2011

SDG: TK51 RUNID: HG090601 METHOD: CVA END DATE: 9/6/2011

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	TK37ADUP	1.00	10281																														
ZZZZZZ	TK37ASPK	1.00	10295																														
ZZZZZZ	TK37B	1.00	10313																														
ZZZZZZ	TK37C	1.00	10330																														
ZZZZZZ	TK37D	1.00	10344																														
ZZZZZZ	TK37E	1.00	10362																														
ZZZZZZ	TK37F	1.00	10375																														
ZZZZZZ	TK37G	1.00	10393																														
ZZZZZZ	TK37H	1.00	10411																														
ZZZZZZ	TK37I	1.00	10424																														
CCV	ACCV4	1.00	10442														X																
CCB	CCB4	1.00	10460														X																
PBW	TK51MB1	1.00	10474														X																
LCSW	TK51MB1SPK	1.00	10492														X																
FRP-083011-021	TK51A	1.00	10510																														
FRP-083011-021D	TK51ADUP	1.00	10524																														
FRP-083011-021S	TK51ASPK	1.00	10542																														
FRP-083011-022	TK51B	1.00	10555														X																
FRP-083011-023	TK51C	1.00	10573														X																
FRP-083011-024	TK51D	1.00	10590														X																
FRP-083011-025	TK51E	1.00	11004														X																
FRP-083011-026	TK51F	1.00	11022														X																
CCV	ACCV5	1.00	11040														X																
CCB	CCB5	1.00	11054														X																
FRP-083011-027	TK51G	1.00	11072														X																
FRP-083011-028	TK51H	1.00	11090														X																
FRP-083011-029	TK51I	1.00	11103														X																
CCV	ACCV6	1.00	11121														X																
CCB	CCB6	1.00	11135														X																
ZZZZZZ	TJ59B	1.00	11155																														
ZZZZZZ	TJ59BDUP	1.00	11172																														
ZZZZZZ	TJ59BSPK	1.00	11190																														
ZZZZZZ	TK20A	1.00	11203																														
ZZZZZZ	TK20ADUP	1.00	11221																														
ZZZZZZ	TK20ASPK	1.00	11234																														

FORM XIV

TK51.00155

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: CETAC MERCURY START DATE: 9/6/2011

SDG: TK51 RUNID: HG090601 METHOD: CVA END DATE: 9/6/2011

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-083011-021	TK51A	1.00	11252														X																
FRP-083011-021D	TK51ADUP	1.00	11270														X																
FRP-083011-021S	TK51ASPK	1.00	11283														X																
CCV	ACCV7	1.00	11301														X																
CCB	CCB7	1.00	11315														X																

TK51 : 00157

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: CETAC MERCURY START DATE: 9/6/2011

SDG: TK51 RUNID: HG090602 METHOD: CVA END DATE: 9/6/2011

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	12420														X																
S0.1	S0.1	1.00	12434														X																
S0.5	S0.5	1.00	12452														X																
S1	S1	1.00	12465														X																
S2	S2	1.00	12483														X																
S5	S5	1.00	12501														X																
S10	S10	1.00	12515														X																
ICV	AICV	1.00	12550														X																
ICB	ICB	1.00	12564														X																
CCV	ACCV1	1.00	12581														X																
CCB	CCB1	1.00	12595														X																
CRA	CRA	1.00	13013														X																
PBW	TK51MB2	1.00	13031														X																
LCSW	TK51MB2SPK	1.00	13044														X																
FRP-083011-031	TK51K	1.00	13062														X																
FRP-083011-031D	TK51KDUP	1.00	13080														X																
FRP-083011-031S	TK51KSPK	1.00	13093														X																
CCV	ACCV2	1.00	13111														X																
CCB	CCB2	1.00	13125														X																

TK51 . 00158

General Chemistry Analysis
Report and Summary QC Forms

ARI Job ID: TK51

TK51 00152

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
pH by Method SW9045

Data Release Authorized:
Reported: 09/01/11
Date Received: 08/30/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	RL	Result
FRP-083011-021 TK51A 11-18889	08/30/11	Soil	08/31/11	0.01	7.94
FRP-083011-022 TK51B 11-18890	08/30/11	Soil	08/31/11	0.01	8.37
FRP-083011-023 TK51C 11-18891	08/30/11	Soil	08/31/11	0.01	8.33
FRP-083011-024 TK51D 11-18892	08/30/11	Soil	08/31/11	0.01	8.30
FRP-083011-025 TK51E 11-18893	08/30/11	Soil	08/31/11	0.01	6.96
FRP-083011-026 TK51F 11-18894	08/30/11	Soil	08/31/11	0.01	7.49
FRP-083011-027 TK51G 11-18895	08/30/11	Soil	08/31/11	0.01	7.87
FRP-083011-028 TK51H 11-18896	08/30/11	Soil	08/31/11	0.01	10.24
FRP-083011-029 TK51I 11-18897	08/30/11	Soil	08/31/11	0.01	9.96

Reported in std units

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

LAB CONTROL RESULTS-CONVENTIONALS
TK51-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 09/01/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	LCS	Spike Added	Recovery
pH	08/31/11	std units	7.00	7.00	0.00

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

REPLICATE RESULTS-CONVENTIONALS
TK51-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 09/01/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: TK51A Client ID: FRP-083011-021					
pH	08/31/11	std units	7.94	7.97	0.03

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

TK51:00162

Geotechnical Analysis
Report and Summary QC Forms

ARI Job ID: TK51

TK51 : 00263

ANALYTICAL RESOURCES INCORPORATED

GEOTECHNICAL ANALYSIS DATA SHEET
Moisture Content by Method ASTM D2216

Data Release Authorized:
Reported: 09/08/11
Date Received: 08/30/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	Result
FRP-083011-030 TK51J 11-18898	08/30/11	Soil	09/02/11 17:00	34.65

Reported in Percent

ANALYTICAL RESOURCES INCORPORATED

GEOTECHNICAL ANALYSIS DATA SHEET
Wet Density by Method ASTM D7263

Data Release Authorized:
Reported: 09/08/11
Date Received: 08/30/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	Result
FRP-083011-030 TK51J 11-18898	08/30/11	Soil	09/02/11 17:00	116.2

Reported in lb/ft3

ANALYTICAL RESOURCES INCORPORATED

GEOTECHNICAL ANALYSIS DATA SHEET
Dry Density by Method ASTM D7263

Data Release Authorized:
Reported: 09/08/11
Date Received: 08/30/11

QC Report No: TK51-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	Result
FRP-083011-030 TK51J 11-18898	08/30/11	Soil	09/02/11 17:00	86.3

Reported in lb/ft3

AMEC Geomatrix
8769
FRP Shorline Investigation 2011

Percent Finer (Passing) Than the Indicated Size

Sieve Size (microns)	3"	2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4 (4750)	#10 (2000)	#20 (850)	#40 (425)	#60 (250)	#100 (150)	#200 (75)	32	22	13	9	7	3.2	1.3
FRP-082911-005	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	92.2	61.8	22.9	6.9	6.0	4.1	3.7	2.8	1.8	1.4
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	92.2	61.1	21.4	6.9	6.0	4.6	3.7	3.2	1.8	1.4
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	91.8	61.2	23.3	7.8	6.4	4.6	4.6	3.2	1.8	1.4
FRP-083011-030	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.6	93.8	64.4	26.3	18.5	12.1	9.9	7.8	4.3	2.8

Testing performed according to ASTM D421/D422

TK51

TK51 : 00167

AMEC Geomatrix
8769
FRP Shorline Investigation 2011

Percent Retained in Each Size Fraction

Description	%Coarse Gravel				% Gravel			% Coarse Sand	% Medium Sand		% Fine Sand			% Very Coarse Silt	% Coarse Silt	% Medium Silt	% Fine Silt	% Fine Silt	% Very Fine Silt	% Clay
Particle Size (microns)	3-2"	2-1 1/2"	1 1/2"-1"	1-3/4"	3/4-1/2"	1/2-3/8"	3/8"-4750	4750-2000	2000-650	850-425	425-250	250-150	150-75	75-32	32-22	22-13	13-9	9-7	7-3.2	<3.2
FRP-082911-005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	7.6	30.4	38.8	16.1	0.9	1.8	0.5	0.9	0.9	1.8
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	7.5	31.1	39.7	14.6	0.9	1.4	0.9	0.5	1.4	1.8
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	8.0	30.5	37.9	15.5	1.4	1.8	0.0	1.4	1.4	1.8
FRP-083011-030	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	5.8	29.4	38.1	7.8	6.4	2.1	2.1	3.8	4.3

TK51

TK51 . 00158

Client:	AMEC Geomatrix	Project No.:	8769
		Project:	FRP Shorline Investigation 2011
ARI Triplicate Sample ID:	TK35S	Batch No.:	TK51-01
Client Triplicate Sample ID:	FRP-082911-005	Page:	1 of 1

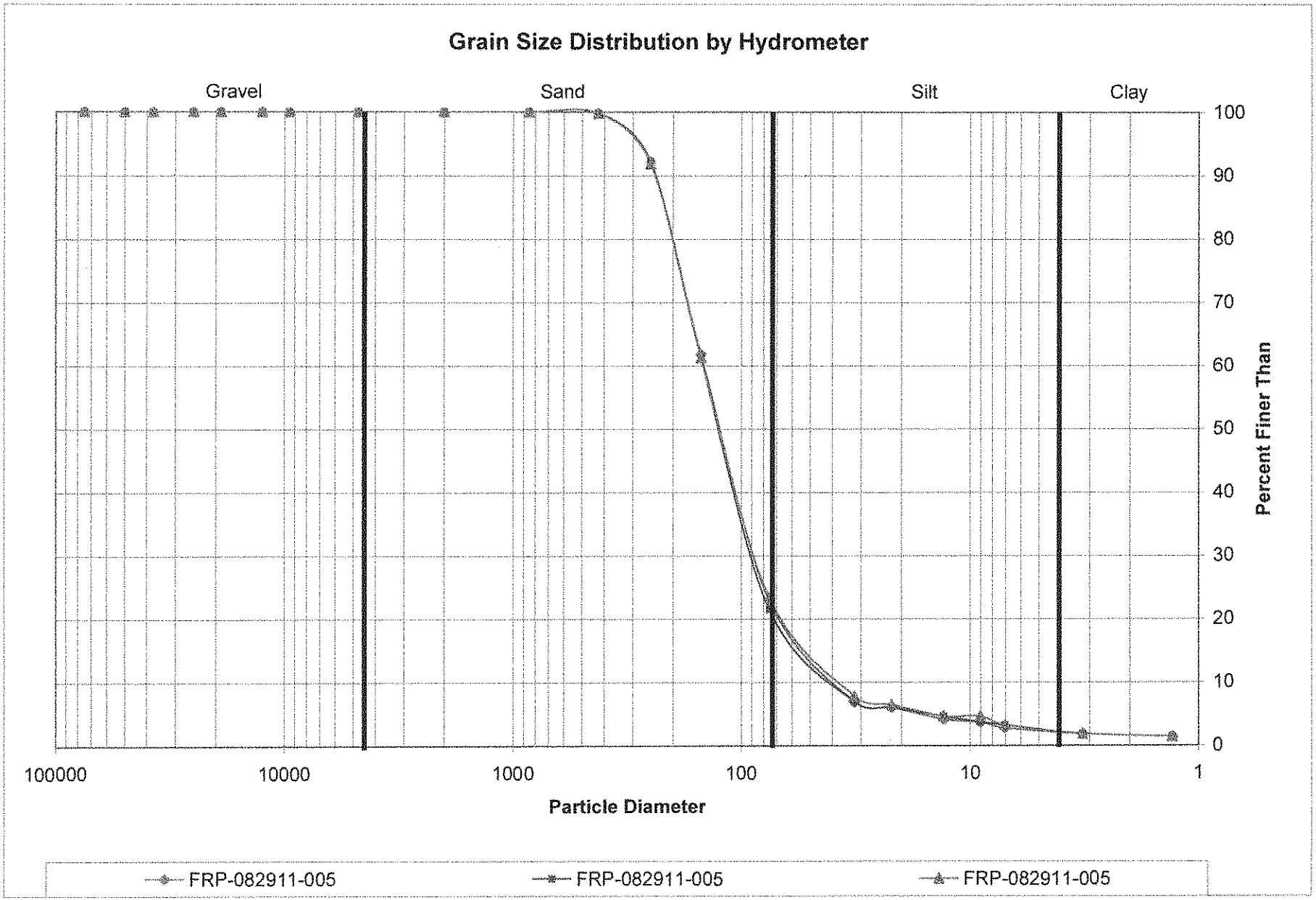
Relative Standard Deviation, By Size

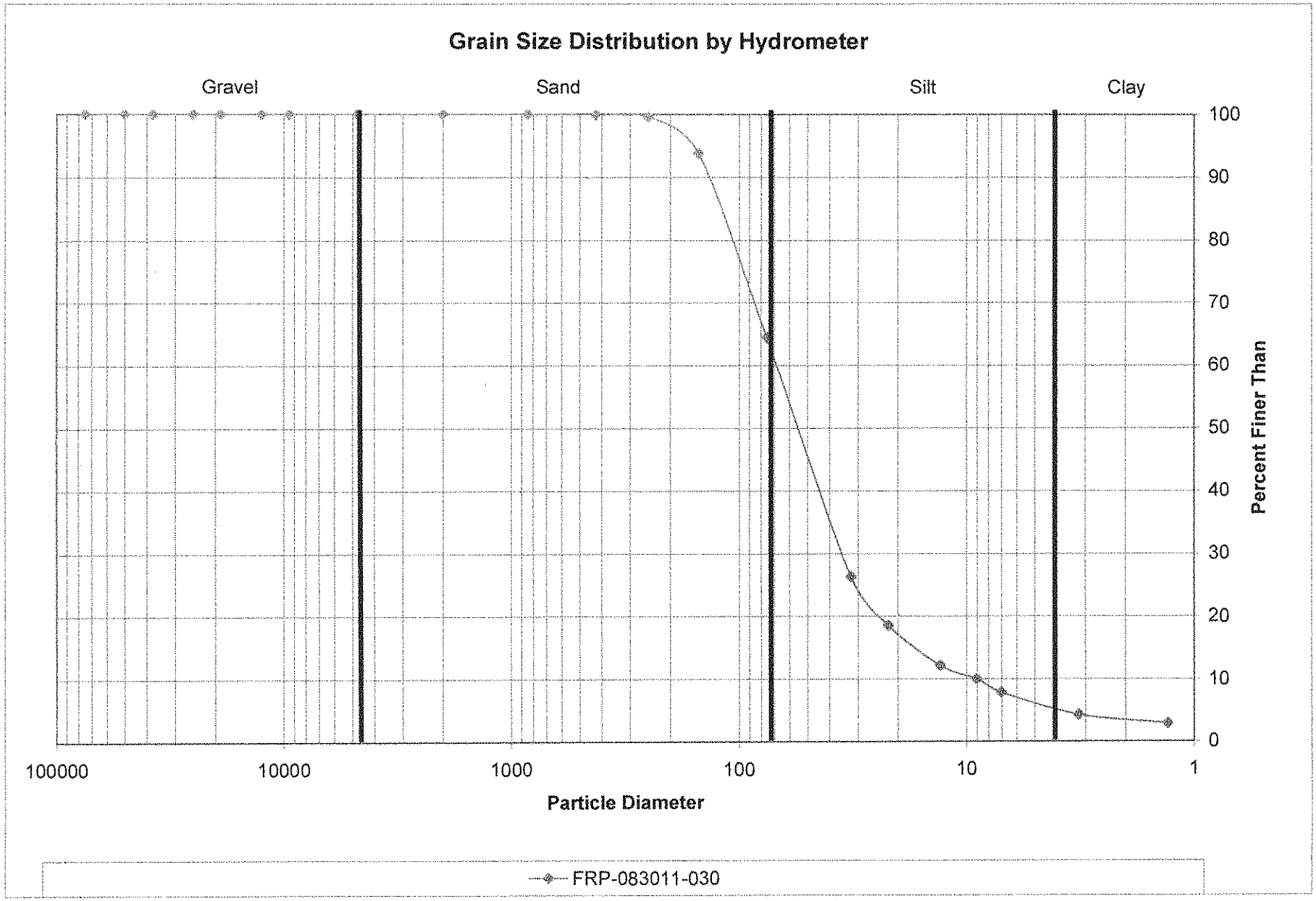
Sample ID	75000	50000	37500	25000	19000	12500	9500	4750	2000	850	425	250	150	75	32	22	13	9	7	3.2	1.3
FRP-082911-005	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	92.2	61.8	22.9	6.9	6.0	4.1	3.7	2.8	1.8	1.4
FRP-082911-005	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	92.2	61.1	21.4	6.9	6.0	4.6	3.7	3.2	1.8	1.4
FRP-082911-005	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	91.8	61.2	23.3	7.8	6.4	4.6	4.6	3.2	1.8	1.4
AVE	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.99	99.77	92.06	61.37	22.57	7.20	6.13	4.44	3.98	3.06	1.84	1.38
STDEV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.24	0.34	1.00	0.54	0.27	0.26	0.54	0.26	0.00	0.00
%RSD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.26	0.56	4.44	7.49	4.45	5.90	13.45	8.59	0.19	0.19

This Triplicate applies to the Batch Containing the Following Samples

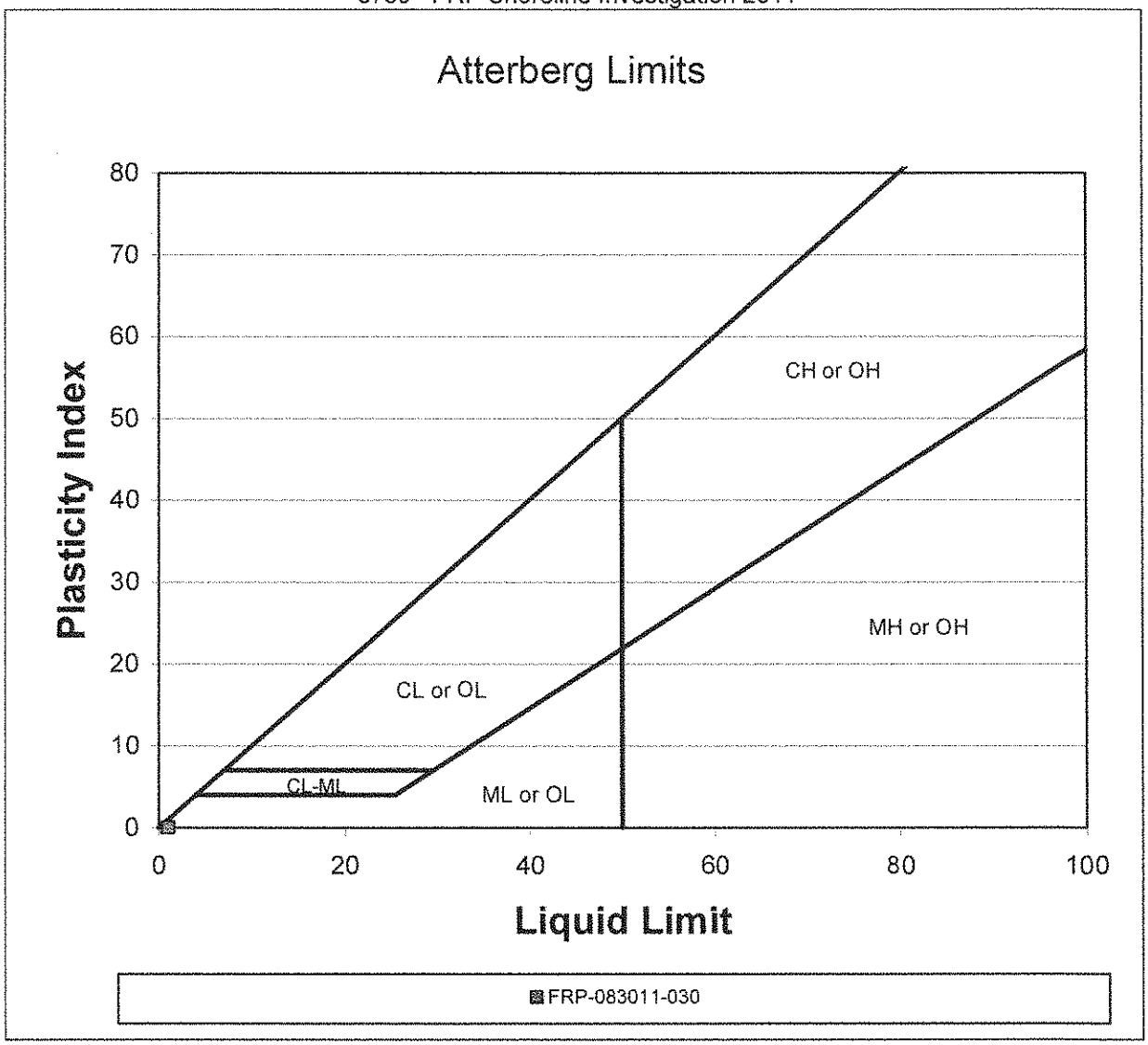
Sample ID	Date Sampled	Data Set up	Date Started	Date Complete	Data Qualifiers
FRP-082911-005	8/29/2011	9/1/2011	9/6/2011	9/8/2011	
	8/29/2011	9/1/2011	9/6/2011	9/8/2011	
	8/29/2011	9/1/2011	9/6/2011	9/8/2011	
FRP-083011-030	8/30/2011	9/2/2011	9/6/2011	9/8/2011	

TK51 : 00169


Grain Size Distribution by Hydrometer
Gravel
Sand
Silt
Clay
100
90
80
70
60
50
40
30
20
10
0
Percent Finer Than
100000
10000
1000
100
10
1
Particle Diameter
FRP-082911-005
FRP-082911-005
FRP-082911-005


Grain Size Distribution by Hydrometer
Gravel
Sand
Silt
Clay
100
90
80
70
60
50
40
30
20
10
0
Percent Finer Than
100000
10000
1000
100
10
1
Particle Diameter
FRP-083011-030

AMEC Geomatrix
8769 FRP Shoreline Investigation 2011



Sample Identification	As-Received Moisture Content	Plasticity Index	Liquid Limit	Plastic Limit	USCS
FRP-083011-030	34.65	NA	NA	NA	Non-Plastic

TK51

TK51 : 00172

Total Solids

ARI Job ID: TK51

TK51 00173

Volatiles Total Solids-voats
Data By: Pat Basilio
Created: 9/ 6/11

Worklist: 3524
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. TK51A 11-18889				% 92.22
2. TK51B 11-18890				% 88.44
3. TK51C 11-18891				% 88.20
4. TK51D 11-18892				% 82.76
5. TK51E 11-18893				% 73.21
6. TK51F 11-18894				% 79.84
7. TK51G 11-18895				% 80.60
8. TK51H 11-18896				% 80.69
9. TK51I 11-18897				% 79.79

Worklist ID: 3524 Page: 1
* - VOA TS Copied From BETX TS
% - VOA TS Copied From Metals TS
$ - VOA TS Copied From Extraction TS

Solids Data Entry Report Checked by: pm Date: 9/6/11
Date: 09/05/11 Data Analyst: KM

Solids Determination performed on 09/04/11 by DM

JOB	SAMPLE	CLIENTID	TAREWEIGHT	SAMPDISH	DRYWEIGHT	SOLIDS
TK51	A	FRP-083011-021	1.009	10.469	9.733	92.22
TK51	B	FRP-083011-022	1.002	10.157	9.099	88.44
TK51	C	FRP-083011-023	1.005	10.218	9.131	88.20
TK51	D	FRP-083011-024	0.977	10.260	8.660	82.76
TK51	E	FRP-083011-025	0.987	10.563	7.998	73.21
TK51	F	FRP-083011-026	1.001	10.894	8.900	79.84
TK51	G	FRP-083011-027	1.025	10.128	8.362	80.60
TK51	H	FRP-083011-028	0.996	10.643	8.780	80.69
TK51	I	FRP-083011-029	0.967	10.959	8.940	79.79

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Total Solids Bench Sheet

Laboratory Section Metals

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

Samples in Oven: Date: 9-04-11 Time: 0955 Temp: 105°C Analyst: DM

Removed from Oven: Date: 9/05/11 Time: 0940 Temp: 101°C Analyst: KM

ARI Sample ID	Tare Weight (g)	Tare + Sample Wet (g)	Tare + Sample Dry (g)	Date & Time Last Weight	Final Weighting >12 hrs[1]
TK51 A	1.009	10.469	9.733	—	✓
" B	1.002	10.157	9.099	—	✓
" C	1.005	10.218	9.131	—	✓
" D	0.977	10.260	8.660	—	✓
" E	0.987	10.563	7.998	—	✓
" F	1.001	10.894	8.900	—	✓
" G	1.025	10.126	8.362	—	✓
" H	0.996	10.643	8.780	—	✓
" I	0.967	10.959	8.940	—	✓
TK76 A	1.018	10.600	4.103	—	✓
TK20 A	0.968	10.714	5.949	—	✓
TK71 A	0.998	10.703	9.241	—	✓
" B	0.963	10.469	8.724	—	✓
" C	0.974	10.224	8.903	—	✓
" D	0.987	10.602	8.817	—	✓
" E	0.962	10.414	8.710	—	✓
" F	0.965	10.657	9.543	—	✓
		9-4-11 DM			

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.

TK51:00176

Volatile Raw Data
Preparation Log

ARI Job ID: TK51

Analytical Resources, Incorporated
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Volatile Organics Extraction Bench Sheet

(8260B, 8260B-SIM, 8021, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

ARI Project No. TK51 | Client ID/Project | Extraction Date | MeOH Lot No. | Analyst

1st Extraction:

2nd Extraction:

	Lab ID	Vial No.	Preservative		Method 5035 Sample Weight					Comments
			$NaHSO_3$	CH_3OH	Vial Weight	Tare (from vial)	Sample Weight	Extract Volume	MeOH Spilt Volume	
	MB:									
	LCS:									
	LCSD:									
1	TK51 FL	1	/		37.36	32.022	5.338			
2	G	2	/		37.24	31.954	5.286			
3	H	2	/		36.85	31.853	4.997			
4	I	1	/		36.87	31.938	4.932			
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
	Balance ID:									

	Solution ID	Concentration	Amount Spiked	Analyst	Witness
Surrogate:					
Spike:					

TK51 : 00178

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Volatile Organics Extraction Bench Sheet

(8260B, 8260B-SIM, 8021, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

ARI Project No. TK35/TK51 | Client ID/Project | Extraction Date | MeOH Lot No. | Analyst

1st Extraction: 9/5/11 | Analyst: PL

2nd Extraction:

	Lab ID	Vial No.	Preservative		Method 5035 Sample Weight					Comments
			$NaHSO_3$	CH_3OH	Vial Weight	Tare (from vial)	Sample Weight	Extract Volume	MeOH Spilt Volume	
	MB:									
	LCS:									
	LCSD:									
1	TK35G	5	X		37.05	32.197	4.853	5		
2	H	5			37.42	32.060	5.36			
3	I	4			36.84	32.136	4.704			
4	J	4			36.99	32.264	4.726			
5	K	4			36.73	32.218	4.502			
6	L	5			37.16	32.165	4.995			
7	M	4			36.97	32.069	4.901			
8	N	4			36.99	32.043	4.947			
9	O	5			36.44	32.164	4.276			
10	P	4			36.37	32.052	4.318			
11	Q	4			37.20	32.316	4.884			
12	R	4			37.14	32.050	5.09			
13	TK51 A	1			37.13	32.101	5.029			
14	B	1			35.68	32.101	3.579			
15	C	1			35.67	31.879	3.791			
16	D	1			37.14	32.141	4.999			
17	E	2			35.79	31.820	3.97			
18	F	3			36.89	31.747	5.143			
19										
20										
	Balance ID:									

	Solution ID	Concentration	Amount Spiked	Analyst	Witness
Surrogate:					
Spike:					

TK51 : 081179