Analytical Resources, Incorporated
Analytical Chemists and Consultants

AMEC
Received
JAN 11 2012
SEATTLE ORG. 5009

January 9, 2012

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

RE: Client Project:FRP Shoreline Investigation Pore Water Sampling
ARI Job Numbers: UC41 and UC49

Dear John:

Please find enclosed the final data package for samples for the project referenced above.

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

An electronic 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 UC41_UC49

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

Table of Contents: ARI Job UC41, UC49

Client: Amec Geomatrix

Project: 8769 FRP Shoreline Investigation PoreH2O

	Page From:	Page To:
Inventory Sheet		
Cover Letter	1	1
Chain of Custody Documentation	2	8
Case Narrative, Data Qualifiers, Control Limits	9	22
Volatile Analysis		
Report and Summary QC Forms	23	85
Metals Analysis		
Report and Summary QC Forms	86	131
General Chemistry Analysis		
Report and Summary QC Forms	132	146
Volatile Raw Data		
Initial Calibration	147	261
Run Logs, Continuing Calibrations, and Raw Data	262	442
Metals Raw Data		
Preparation Bench Sheets and Notes	443	447
Run Logs, Calibrations, and Raw Data	448	677
General Chemistry Raw Data		
Analyst Notes and Raw Data	678	682

Signature

January-09-2012
Date

Chain of Custody Documentation

ARI Job ID: UC41, UC49

Chain of Custody Record & Laboratory Analysis Request

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

ARI Assigned Number: UC41
Turn-around Requested: Standard
Page: 1 of 1
ARI Client Company: AMEC GMX
Phone: 206-342-1760
Date: 12/22/11
Ice Present? Y
Client Contact: John Long
No. of Coolers: 1
Cooler Temps: 3.6
Client Project Name: FRP Shoreline Investigation Pore Water Sampling
Client Project #: 8769
Samplers: N. Bacher/T Lauriere

Sample ID	Date	Time	Matrix	No. Containers	VOCs 8260C	Total Metals* 200.8	pH 150.1						Notes/Comments
RP122211-01	12/22/11	2020	H_2O	5	X	X	X						
RP122211-02	12/22/11	2120	↓	5	X	X	X						
RP122211-03	12/22/11	2145	↓	5	X	X	X						
RP122211-04	12/22/11	2225	↓	5	X	X	X						
RP122211-05	12/22/11	2245	↓	5	X	X	X						
TB-122211	12/20/11	—	↓	2	X								

Comments/Special Instructions
*Metals include: Al, As, Cd, Ca, Cr, Cu, Fe, Mg, Pb, Mn, Ni, K, Se, Th, Na, V, Zn

Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
Printed Name: Nik Bacher	Printed Name: C. OKEIRO	Printed Name:	Printed Name:
Company: AGMX	Company: ARI	Company:	Company:
Date & Time: 12/23/11 1025	Date & Time: 12/23/11 1025	Date & Time:	Date & Time:

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

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

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: AMEC

Project Name: FRP Shoreline Investigation

COC No(s): NA

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

Assigned ARI Job No: UC41

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)..... 3.6

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

Temp Gun ID#: 90941619

Cooler Accepted by: JM Date: 12/23/11 Time: 1025

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:			
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	12/20/11	

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

Samples Logged by: JM Date: 12/23/11 Time: 1033

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

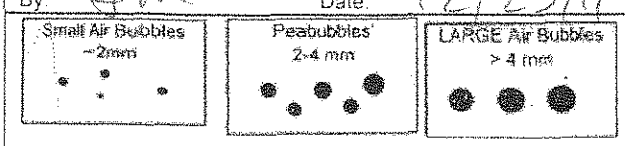
Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

RP122211-02 = sm in 1 of 3
RP122211-03 = sm in 1 of 3

Hg was not requested on COC, samples were logged for Hg.

By: JM Date: 12/23/11



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

PRESERVATION VERIFICATION 12/23/11

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **UC41**

Inquiry Number: NONE
Analysis Requested: 12/23/11
Contact: Long, John
Client: AMEC Geomatrix
Logged by: JM
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Kelly
VTSR: 12/23/11

Project #: 8769
Project: FRP Shoreline Investigation PoreH2O
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
11-29391 **UC41A**	RP122211-01						TOT PADD															
11-29392 **UC41B**	RP122211-02						TOT															
11-29393 **UC41C**	RP122211-03						TOT															
11-29394 **UC41D**	RP122211-04						TOT															
11-29395 **UC41E**	RP122211-05						TOT															

Checked By JM Date 12/23/11

UC41 00005

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: UC49	Turn-around Requested: Standard	Page: 1 of 1	
ARI Client Company: AMEC GMX	Phone: 206-342-1760	Date: 12/23/11	Ice Present? Y
Client Contact: John Long		No. of Coolers: 1	Cooler Temps: 0.7
Client Project Name: FRP Shoreline Investigation Pore Water Sampling			
Client Project #: 8769	Samplers: N Bacher / T. Louviere		

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

Sample ID	Date	Time	Matrix	No. Containers	VOCs 8260C	Total Metals ⊛ 200.8	pH 150.1						Notes/Comments
RP122311-01	12/23/11	2055	H_2O	5	X	X	X						
RP122311-02	12/23/11	2100	↓	5	X	X	X						
RP122311-03	12/23/11	2140	↓	5	X	X	X						
RP122311-04	12/23/11	2215	↓	5	X	X	X						
RP122311-05	12/23/11	2245	↓	5	X	X	X						
TB-122311	12/20/11	—	↓	2	X								

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
⊛. Metals include: Al, As, Cd, Ca, Cr, Cu, Fe, Mg, Pb, Mn, Ni, K, Se, Th, Na, V, Zn	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Nik Bacher	Printed Name: Jennifer Millsap	Printed Name:	Printed Name:
	Company: AGMX	Company: ARI	Company:	Company:
	Date & Time: 12/27/11 0932	Date & Time: 12/27/11 932	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.

UC41:00006

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: AMEC

Project Name: FRP Shoreline Investigation

COC No(s): _____ (NA)

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

Assigned ARI Job No: UC49

Tracking No: _____ NA

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)..... 0.7 ___ ___ ___

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

Temp Gun ID#: 90941619

Cooler Accepted by: JM Date: 12/27/11 Time: 932

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: _____			
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	12/20/11	

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

Samples Logged by: JM Date: 12/27/11 Time: 938

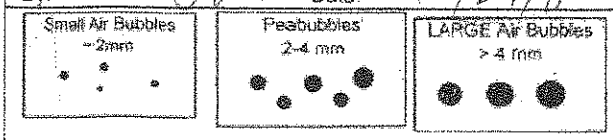
*** Notify Project Manager of discrepancies or concerns ***

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

Additional Notes, Discrepancies, & Resolutions:

TB-122311 = sm in 1 of 2 | Hg Not requested. All samples logged
ph was received after holding time for Hg.
expired. JM

By: Date: 12/27/11



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

PRESERVATION VERIFICATION 12/27/11
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **UC49**

PC: Kelly
VTSR: 12/27/11

Inquiry Number: NONE
Analysis Requested: 12/27/11
Contact: Bacher, Nick
Client: Amec Geomatrix
Logged by: JM
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

Project #: 8769
Project: FRP Shoreline Investigation PoreH2O
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
11-29412 **UC49A**	RP122311-01						TOT															
11-29413 **UC49B**	RP122311-02						TOT															
11-29414 **UC49C**	RP122311-03						TOT															
11-29415 **UC49D**	RP122311-04						TOT															
11-29416 **UC49E**	RP122311-05						TOT															

Checked By JM Date 12/27/11

UC41:00008

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: UC41, UC49

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: UC41
Client: AMEC Geomatrix
Project Event: 8769
Project Name: FRP Shoreline Investigation PoreH2O

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	RP122211-01	UC41A	11-29391	Water	12/22/11 20:20	12/23/11 10:25
2.	RP122211-02	UC41B	11-29392	Water	12/22/11 21:20	12/23/11 10:25
3.	RP122211-03	UC41C	11-29393	Water	12/22/11 21:45	12/23/11 10:25
4.	RP122211-04	UC41D	11-29394	Water	12/22/11 22:25	12/23/11 10:25
5.	RP122211-05	UC41E	11-29395	Water	12/22/11 22:45	12/23/11 10:25
6.	TB-122211	UC41F	11-29396	Water	12/22/11	12/23/11 10:25

Printed 12/23/11

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: UC49
Client: Amec Geomatrix
Project Event: 8769
Project Name: FRP Shoreline Investigation PoreH2O

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	RP122311-01	UC49A	11-29412	Water	12/23/11 20:55	12/27/11 09:32
2.	RP122311-02	UC49B	11-29413	Water	12/23/11 21:00	12/27/11 09:32
3.	RP122311-03	UC49C	11-29414	Water	12/23/11 21:40	12/27/11 09:32
4.	RP122311-04	UC49D	11-29415	Water	12/23/11 22:15	12/27/11 09:32
5.	RP122311-05	UC49E	11-29416	Water	12/23/11 22:45	12/27/11 09:32
6.	TB-122311	UC49F	11-29417	Water	12/23/11	12/27/11 09:32

Printed 12/27/11

Case Narrative

AMEC/Geomatrix
Client Project: FRP Shoreline Investigation Pore Water Sampling
ARI Job Numbers: UC41 and UC49
January 9, 2012

Sample Receipt:

Please find enclosed the original Chain-of-Custody (COC) record, sample receipt documentation, and analytical results for the project referenced above. Analytical Resources, Inc. (ARI) accepted five water samples on December 23, 2011 and five water samples on December 27, 2011. Please see the enclosed Cooler Receipt Form for further details.

Volatiles by 8260C:

The Laboratory analyzed the samples on 12/28/11 within the method recommended holding time.

Initial calibration (s): Are in control.

Continuing calibration (s): Are in control.

Samples: There were no anomalies associated with these samples.

Surrogates: All surrogate recoveries were in control.

LCS/LCSD (s): The 12/28/11 LCSD at 12:38 is out of control low for 1,1-Dichloroethene and carbon disulfide. The LCS is in control and no further corrective action was taken.

Method Blank: The method blank is free of contamination.

Metals Analysis (6010, 200.8 and 7000 series)

The samples were digested on 1/3/12 - within the method recommended holding time and analyzed between 1/4/12 and 1/5/12.

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

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

LCS (s): The percent recoveries were within control limits.

Method Blank (s): The method blanks were free of contamination.

Samples: There were no anomalies associated with these samples.

Matrix spike/ Sample Duplicate RPD(s): Are in control.

pH by method 150.1:

The samples were analyzed between 12/23/11 within method recommended holding time in association with ARI SDG UC41.

The samples in association with ARI SDG UC49 were analyzed between 12/27/11 outside of the method recommended holding time.

LCS (s): The LCS percent recovery was within control limits.

SRM (s): Are in control.

Sample Replicate RPD (s): The RPD is in control.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

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

* Duplicate RPD is not within established control limits

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

N Matrix Spike recovery not within established control limits

NA Not Applicable, analyte not spiked

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

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

Organic Data

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

* Flagged value is not within established control limits

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

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

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

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

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

UC41 : 00014

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)**

UC41 : 00015

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

UC41 : 00015

LOD[1], LOQ[2] and Control Limits Summary for VOA Analysis of Water 10 mL Purge Volume (EPA Methods 8260C)

Analyte	DL[1] µg/L	LOD[1] µg/L	LOQ[1] µg/L	LCS Recovery[2]	Replicate RPD[3]
Chloromethane	0.095	0.25	**0.5**	69 – 122	≤ 40
Vinyl Chloride	0.057	0.1	**0.2**	**80 – 120**	≤ 40
Bromomethane	0.252	0.5	**1.0**	71 – 120	≤ 40
Chloroethane	0.086	0.1	**0.2**	**80 – 120**	≤ 40
Trichlorofluoromethane	0.037	0.1	**0.2**	**80 – 120**	≤ 40
Acrolein	2.476	2.5	**5.0**	69 – 126	≤ 40
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.043	0.1	**0.2**	**80** – 121	≤ 40
Acetone	2.057	2.5	**5.0**	71 – **120**	≤ 40
1,1-Dichloroethene	0.054	0.1	**0.2**	**80 – 120**	≤ 40
Bromoethane	0.041	0.1	**0.2**	**80 – 120**	≤ 40
Iodomethane	0.227	0.5	**1.0**	76 – 120	≤ 40
Methylene Chloride	0.485	0.5	**1.0**	**80 – 120**	≤ 40
Acrylonitrile	0.604	1.0	**1.0**	79 – **120**	≤ 40
Carbon Disulfide	0.037	0.1	**0.2**	**80 – 120**	≤ 40
trans-1,2-Dichloroethene	0.048	0.1	**0.2**	**80 – 120**	≤ 40
Vinyl Acetate	0.069	0.1	**0.2**	**80 – 120**	≤ 40
1,1-Dichloroethane	0.053	0.1	**0.2**	**80 – 120**	≤ 40
2-Butanone	0.814	2.5	**5.0**	**80 – 120**	≤ 40
2,2-Dichloropropane	0.052	0.1	**0.2**	**80 – 120**	≤ 40
cis-1,2-Dichloroethene	0.043	0.1	**0.2**	**80 – 120**	≤ 40
Chloroform	0.027	0.1	**0.2**	**80 – 120**	≤ 40
Bromochloromethane	0.061	0.1	**0.2**	**80 – 120**	≤ 40
1,1,1-Trichloroethane	0.041	0.1	**0.2**	**80 – 120**	≤ 40
1,1-Dichloropropene	0.034	0.1	**0.2**	**80 – 120**	≤ 40
Carbon Tetrachloride	0.044	0.1	**0.2**	**80 – 120**	≤ 40
1,2-Dichloroethane	0.072	0.1	**0.2**	**80 – 120**	≤ 40
Benzene	0.027	0.1	**0.2**	**80 – 120**	≤ 40
Trichloroethene	0.049	0.1	**0.2**	**80 – 120**	≤ 40
1,2-Dichloropropane	0.035	0.1	**0.2**	**80 – 120**	≤ 40
Bromodichloromethane	0.051	0.1	**0.2**	**80 – 120**	≤ 40
Dibromomethane	0.145	0.2	**0.2**	**80 – 120**	≤ 40
2-Chloroethylvinyl Ether	0.250	0.5	**1.0**	**80 – 120**	≤ 40
4-Methyl-2-Pentanone	0.974	2.5	**5.0**	**80 – 120**	≤ 40
cis 1,3-dichloropropene	0.061	0.1	**0.2**	**80 – 120**	≤ 40
Toluene	0.040	0.1	**0.2**	**80 – 120**	≤ 40
trans 1,3-Dichloropropene	0.081	0.1	**0.2**	**80 – 120**	≤ 40
2-Hexanone	0.902	2.5	**5.0**	**80 – 120**	≤ 40
1,1,2-Trichloroethane	0.129	0.2	**0.2**	**80 – 120**	≤ 40
1,3-Dichloropropane	0.062	0.1	**0.2**	**80 – 120**	≤ 40
Tetrachloroethene	0.047	0.1	**0.2**	**80 – 120**	≤ 40
Dibromochloromethane	0.048	0.1	**0.2**	**80 – 120**	≤ 40
1,2-Dibromoethane	0.075	0.1	**0.2**	**80 – 120**	≤ 40

UCU1 : 00017

LOD[1], LOQ[2] and Control Limits Summary for VOA Analysis of Water 10 mL Purge Volume (EPA Methods 8260C)

Analyte	DL[1] µg/L	LOD[1] µg/L	LOQ[1] µg/L	LCS Recovery[2]	Replicate RPD[3]
Chlorobenzene	0.023	0.1	**0.2**	**80 – 120**	≤ 40
Ethyl Benzene	0.037	0.1	**0.2**	**80 – 120**	≤ 40
1,1,1,2-Tetrachloroethane	0.040	0.1	**0.2**	**80 – 120**	≤ 40
m,p-xylene	0.052	0.2	**0.4**	**80 – 120**	≤ 40
o-Xylene	0.035	0.1	**0.2**	**80 – 120**	≤ 40
Styrene	0.045	0.1	**0.2**	**80 – 120**	≤ 40
Bromoform	0.062	0.1	**0.2**	**80 – 120**	≤ 40
1,1,2,2-Tetrachloroethane	0.060	0.1	**0.2**	**80 – 120**	≤ 40
1,2,3-Trichloropropane	0.131	0.25	**0.5**	**80 – 120**	≤ 40
trans-1,4-Dichloro 2-Butene	0.324	0.5	**1.0**	74 – 122	≤ 40
n-Propyl Benzene	0.023	0.1	**0.2**	**80 – 120**	≤ 40
Bromobenzene	0.060	0.1	**0.2**	**80 – 120**	≤ 40
iso-propyl Benzene	0.021	0.1	**0.2**	**80 – 120**	≤ 40
2-Chloro Toluene	0.024	0.1	**0.2**	**80 – 120**	≤ 40
4-Chloro Toluene	0.016	0.1	**0.2**	**80 – 120**	≤ 40
tert-Butyl Benzene	0.026	0.1	**0.2**	**80 – 120**	≤ 40
1,3,5-Trimethyl Benzene	0.015	0.1	**0.2**	**80 – 120**	≤ 40
1,2,4-Trimethylbenzene	0.024	0.1	**0.2**	**80 – 120**	≤ 40
sec-Butyl Benzene	0.024	0.1	**0.2**	**80 – 120**	≤ 40
4-Isopropyl Toluene	0.026	0.1	**0.2**	**80 – 120**	≤ 40
1,3-Dichlorobenzene	0.036	0.1	**0.2**	**80 – 120**	≤ 40
1,4-Dichlorobenzene	0.040	0.1	**0.2**	**80 – 120**	≤ 40
n-Butyl Benzene	0.025	0.1	**0.2**	**80 – 120**	≤ 40
1,2-Dichlorobenzene	0.036	0.1	**0.2**	**80 – 120**	≤ 40
1,2-Dibromo 3-Chloropropane	0.366	0.5	**0.5**	76 – **120**	≤ 40
1,2,4-Trichlorobenzene	0.107	0.25	**0.5**	77 – **120**	≤ 40
Hexachloro-1,3-Butadiene	0.073	0.25	**0.5**	77 – 120	≤ 40
Naphthalene	0.118	0.25	**0.5**	76 – **120**	≤ 40
1,2,3-Trichlorobenzene	0.110	0.25	**0.5**	79 – **120**	≤ 40
Dichlorodifluoromethane	0.052	0.1	**0.2**	69 – 122	≤ 40
Methyl-*tert*-butyl ether	0.073	0.25	**0.5**	**80 – 120**	≤ 40
Surrogate Standards			**MB / LCS**	**Samples**	**RPD**
Dibromofluoromethane			**80 – 120**	**80 – 120**	≤ 40
1,2-Dichlorobenzene-d_4			**80 – 120**	**80 – 120**	≤ 40
Toluene-d_8			**80 – 120**	**80 – 120**	≤ 40
4-Bromofluorobenzene			**80 – 120**	**80 – 120**	≤ 40

(1) Detection Limit (DL), Limit of Detection (LOD) and Limit of Quantitation (LOQ) are defined in ARI SOP 1018S
(2) Control limits calculated using all data from 7/1/09 through 6/30/10.
(3) Relative Percent Difference between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_O - C_D|}{\frac{C_O + C_D}{2}} x100$$

UC41 : 00018

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Quality Control Parameters for Metals Analysis using ICP-MS

Analyte	Mass	Aqueous Samples[2]			Spike Recovery		RPD[4]	Solids[3]
		DL[1] µg/L	LOD[1] µg/L	LOQ[1] µg/L	Matrix Spike	LCS		LOQ[1] mg/kg
Aluminum	27	1.601	10	**20.0**	75 – 125	80 – 120	≤ 20	**20.0**
Antimony	121	0.010	0.1	**0.2**	75 – 125	80 – 120	≤ 20	**0.2**
	123	0.011	0.1	**0.2**	75 – 125	80 – 120	≤ 20	**0.2**
Arsenic #1	75	0.048	0.1	**0.2**	75 – 125	80 – 120	≤ 20	**0.2**
Arsenic #2	75	0.092	0.25	**0.5**	75 – 125	80 – 120	≤ 20	**0.5**
Barium	135	0.020	0.25	**0.5**	75 – 125	80 – 120	≤ 20	**0.5**
	137	0.019	0.25	**0.5**	75 – 125	80 – 120	≤ 20	**0.5**
Beryllium	9	0.021	0.1	**0.2**	75 – 125	80 – 120	≤ 20	**0.2**
Cadmium	111	0.010	0.05	**0.1**	75 – 125	80 – 120	≤ 20	**0.1**
	114	0.005	0.05	**0.1**	75 – 125	80 – 120	≤ 20	**0.1**
Calcium	43	3.983	25	**50.0**	75 – 125	80 – 120	≤ 20	**50.0**
Chromium	52	0.045	0.25	**0.5**	75 – 125	80 – 120	≤ 20	**0.5**
	53	0.118	0.25	**0.5**	75 – 125	80 – 120	≤ 20	**0.5**
Cobalt	59	0.011	0.1	**0.2**	75 – 125	80 – 120	≤ 20	**0.2**
Copper	63	0.158	0.25	**0.5**	75 – 125	80 – 120	≤ 20	**0.5**
	65	0.236	0.25	**0.5**	75 – 125	80 – 120	≤ 20	**0.5**
Iron	54	5.753	10	**20.0**	75 – 125	80 – 120	≤ 20	**20.0**
	57	3.876	10	**20.0**	75 – 125	80 – 120	≤ 20	**20.0**
Lead	208	0.046	0.05	**0.1**	75 – 125	80 – 120	≤ 20	**0.1**
Magnesium	24	0.297	10	**20.0**	75 – 125	80 – 120	≤ 20	**20.0**
Manganese	55	0.022	0.25	**0.5**	75 – 125	80 – 120	≤ 20	**0.5**
Molybdenum	98	0.013	0.1	**0.2**	75 – 125	80 – 120	≤ 20	**0.2**
Nickel	60	0.079	0.25	**0.5**	75 – 125	80 – 120	≤ 20	**0.5**
	62	0.089	0.25	**0.5**	75 – 125	80 – 120	≤ 20	**0.5**
Potassium	39	2.944	10	**20.0**	75 – 125	80 – 120	≤ 20	**20.0**
Selenium	82	0.127	0.25	**0.5**	75 – 125	80 – 120	≤ 20	**0.5**
	78	0.324	0.25	**2.0**	75 – 125	80 – 120	≤ 20	**2.0**
Silver	107	0.008	0.1	**0.2**	75 – 125	80 – 120	≤ 20	**0.2**
Sodium	23	2.833	50	**100.0**	75 – 125	80 – 120	≤ 20	**100.0**
Thorium	232	0.013	0.1	**0.2**	75 – 125	80 – 120	≤ 20	**0.2**
Thallium	205	0.004	0.1	**0.2**	75 – 125	80 – 120	≤ 20	**0.2**
Uranium	238	0.003	0.1	**0.2**	75 – 125	80 – 120	≤ 20	**0.2**
Vanadium	51	0.043	0.1	**0.2**	75 – 125	80 – 120	≤ 20	**0.2**
Zinc	66	0.497	2	**4.0**	75 – 125	80 – 120	≤ 20	**4.0**
	67	0.531	2	**4.0**	75 – 125	80 – 120	≤ 20	**4.0**
	68	0.524	2	**4.0**	75 – 125	80 – 120	≤ 20	**4.0**

(1) Detection Limit (DL), Limit of Detection Limit (LOD) and Limit of Quantitation (LOQ) as defined in ARI SOP 1018S
(2) 50 mL sample and 50 mL final volume
(3) Solids LOQ based on 100% solids using 1.0 g sample with 100 mL final volume.
(4) Relative Percent Difference between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_O - C_D|}{\frac{C_O + C_D}{2}} x100$$

UC41 : 00019

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Quality Control Parameters for Metals Analysis using ICP-OES

	Aqueous Samples[2]			Spike Recovery		RPD[5]	Solids[3]	Tissue[4]
Analyte	DL[1] µg/L	LOD[1] µg/L	LOQ[1] µg/L	Matrix Spike	LCS		LOQ mg/kg	LOQ mg/kg
Aluminum	7.57	25	**50**	75 – 125	80 – 120	≤ 20	**5.0**	**1.0**
Antimony	6.28	25	**50**	75 – 125	80 – 120	≤ 20	**5.0**	**1.0**
Arsenic	3.33	25	**50**	75 – 125	80 – 120	≤ 20	**5.0**	**1.0**
Barium	1.33	1.5	**3.0**	75 – 125	80 – 120	≤ 20	**0.3**	**0.06**
Beryllium	0.16	0.5	**1.0**	75 – 125	80 – 120	≤ 20	**0.1**	**0.02**
Boron	7.39	10	**20**	75 – 125	80 – 120	≤ 20	**2.0**	**0.4**
Cadmium	0.18	0.5	**2.0**	75 – 125	80 – 120	≤ 20	**0.2**	**0.04**
Calcium	11.27	25	**50**	75 – 125	80 – 120	≤ 20	**5.0**	**1.0**
Chromium	1.24	2.5	**5.0**	75 – 125	80 – 120	≤ 20	**0.5**	**0.1**
Cobalt	0.27	1.5	**3.0**	75 – 125	80 – 120	≤ 20	**0.3**	**0.06**
Copper	0.92	1.0	**2.0**	75 – 125	80 – 120	≤ 20	**0.2**	**0.04**
Iron	7.50	25	**50**	75 – 125	80 – 120	≤ 20	**5.0**	**1.0**
Lead	1.55	10	**20**	75 – 125	80 – 120	≤ 20	**2.0**	**0.4**
Magnesium	9.61	25	**50**	75 – 125	80 – 120	≤ 20	**5.0**	**1.0**
Manganese	0.28	0.5	**1.0**	75 – 125	80 – 120	≤ 20	**0.1**	**0.02**
Molybdenum	0.79	2.5	**5.0**	75 – 125	80 – 120	≤ 20	**0.5**	**0.1**
Nickel	3.86	5.0	**10**	75 – 125	80 – 120	≤ 20	**0.1**	**0.02**
Potassium	65.70	250	**500**	75 – 125	80 – 120	≤ 20	**5.0**	**1.0**
Selenium	4.99	25	**50**	75 – 125	80 – 120	≤ 20	**0.5**	**0.01**
Silicon	8.17	30	**60**	75 – 125	80 – 120	≤ 20	**(6)**	**(6)**
Silver	0.43	1.5	**3.0**	75 – 125	80 – 120	≤ 20	**0.3**	**0.06**
Sodium	11.35	250	**500**	75 – 125	80 – 120	≤ 20	**5.0**	**1.0**
Strontium	0.09	1.0	**1.0**	75 – 125	80 – 120	≤ 20	**0.1**	**0.02**
Thallium	3.10	25	**50**	75 – 125	80 – 120	≤ 20	**5.0**	**1.0**
Tin	1.41	5.0	**10**	75 – 125	80 – 120	≤ 20	**1.0**	**0.2**
Titanium	2.11	2.5	**5.0**	75 – 125	80 – 120	≤ 20	**0.5**	**0.01**
Vanadium	0.27	1.5	**3.0**	75 – 125	80 – 120	≤ 20	**0.3**	**0.06**
Zinc	1.45	5.0	**10**	75 – 125	80 – 120	≤ 20	**1.0**	**0.2**

(1) Detection Limit (DL), Limit of Detection Limit (LOD) and Limit of Quantitation (LOQ) as defined in ARI SOP 1018S
(2) 50 mL sample and 50 mL final volume
(3) Solids LOQ based on 100% solids using 1.0 g sample with 100 mL final volume.
(4) Tissue is reported on an "as received" (wet weight) basis using 2.5 g sample with 50 mL final volume.
(5) Relative Percent Difference between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_O - C_D|}{\frac{C_O + C_D}{2}} x100$$

(6) ARI does not analyze for Silicon in solids or tissue samples

UC41 : 00020

Quality Control Parameters for Mercury Analysis using CVAA

	Aqueous Samples[2]			Spike Recovery		RPD[5]
	DL[1] µg/L	LOD[1] µg/L	LOQ[1] µg/L	Matrix Spike	LCS	
Mercury	0.0069	0.05	**0.10**[2]	75 – 125	80 – 120	≤ 20
Mercury (low level)	0.0026	0.01	**0.02**[3]	75 – 125	80 – 120	≤ 20
	Soil / Sediment / Tissue[4] Samples			**Spike Recovery**		**RPD[5]**
	DL[1] mg/kg	**LOD[1] mg/kg**	**LOQ[1] mg/kg**	**Matrix Spike**	**LCS**	
Mercury	0.0021	0.0125	**0.025**[3,4]	75 – 125	80 – 120	≤ 20

(1) Detection Limit (DL), Limit of Detection Limit (LOD) and Limit of Quantitation (LOQ) as defined in ARI SOP 1018S
(2) 20 mL sample with 20 mL final volume
(3) 0.2 g sample with 50 mL final volume assuming 100% dry weight. Soil and sediment are reported on a dry weight basis.
(4) Tissue LOQ is 0.005 mg/kg as received (wet weight) based on 1 g sample with 50 mL final volume.
(5) Relative Percent Difference between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_O - C_D|}{\frac{C_O + C_D}{2}} x100$$

UC41 : 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%

UC41 : 00022

Volatile Analysis
Report and Summary QC Forms

ARI Job ID: UC41, UC49

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122211-01**
 SAMPLE

Lab Sample ID: UC41A
LIMS ID: 11-29391
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 14:03

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	25	< 25	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122211-01**
 SAMPLE

Lab Sample ID: UC41A
LIMS ID: 11-29391
Matrix: Water
Date Analyzed: 12/28/11 14:03

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	Ethylene Dibromide	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	98.2%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	102%

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

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122211-02**
 SAMPLE

Lab Sample ID: UC41B
LIMS ID: 11-29392
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 14:30

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	25	< 25	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122211-02**
 SAMPLE

Lab Sample ID: UC41B
LIMS ID: 11-29392
Matrix: Water
Date Analyzed: 12/28/11 14:30

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	Ethylene Dibromide	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	109%
d8-Toluene	98.2%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	101%

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

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122211-03**
 SAMPLE

Lab Sample ID: UC41C
LIMS ID: 11-29393
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 14:57

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	25	< 25	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122211-03**
 SAMPLE

Lab Sample ID: UC41C
LIMS ID: 11-29393
Matrix: Water
Date Analyzed: 12/28/11 14:57

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

CAS Number	Analyte	RL	Result	Q
74-88-4	Methyl Iodide	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	Ethylene Dibromide	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	99.3%
Bromofluorobenzene	99.8%
d4-1,2-Dichlorobenzene	102%

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

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122211-04**
 SAMPLE

Lab Sample ID: UC41D
LIMS ID: 11-29394
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 09:48

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122211-04**
 SAMPLE

Lab Sample ID: UC41D
LIMS ID: 11-29394
Matrix: Water
Date Analyzed: 12/28/11 09:48

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	99.8%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	101%

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

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122211-05**
 SAMPLE

Lab Sample ID: UC41E
LIMS ID: 11-29395
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 10:14

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122211-05**
 SAMPLE

Lab Sample ID: UC41E
LIMS ID: 11-29395
Matrix: Water
Date Analyzed: 12/28/11 10:14

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	97.3%
Bromofluorobenzene	98.9%
d4-1,2-Dichlorobenzene	101%

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

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TB-122211**
 SAMPLE

Lab Sample ID: UC41F
LIMS ID: 11-29396
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 10:41

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TB-122211**
 SAMPLE

Lab Sample ID: UC41F
LIMS ID: 11-29396
Matrix: Water
Date Analyzed: 12/28/11 10:41

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	98.2%
Bromofluorobenzene	98.8%
d4-1,2-Dichlorobenzene	101%

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

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122311-01**
 SAMPLE

Lab Sample ID: UC49A
LIMS ID: 11-29412
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 20:18

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122311-01**
 SAMPLE

Lab Sample ID: UC49A
LIMS ID: 11-29412
Matrix: Water
Date Analyzed: 12/28/11 20:18

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	96.4%
Bromofluorobenzene	98.9%
d4-1,2-Dichlorobenzene	105%

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

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122311-02**
 SAMPLE

Lab Sample ID: UC49B
LIMS ID: 11-29413
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 20:44

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122311-02**
 SAMPLE

Lab Sample ID: UC49B
LIMS ID: 11-29413
Matrix: Water
Date Analyzed: 12/28/11 20:44

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	95.0%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	104%

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

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122311-03**
 SAMPLE

Lab Sample ID: UC49C
LIMS ID: 11-29414
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 21:11

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122311-03**
 SAMPLE

Lab Sample ID: UC49C
LIMS ID: 11-29414
Matrix: Water
Date Analyzed: 12/28/11 21:11

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	114%
d8-Toluene	96.1%
Bromofluorobenzene	98.5%
d4-1,2-Dichlorobenzene	104%

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

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122311-04**
 SAMPLE

Lab Sample ID: UC49D
LIMS ID: 11-29415
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 21:37

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122311-04**
 SAMPLE

Lab Sample ID: UC49D
LIMS ID: 11-29415
Matrix: Water
Date Analyzed: 12/28/11 21:37

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	113%
d8-Toluene	95.3%
Bromofluorobenzene	97.4%
d4-1,2-Dichlorobenzene	103%

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

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122311-05**
 SAMPLE

Lab Sample ID: UC49E
LIMS ID: 11-29416
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 22:04

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.5	< 0.5	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	**Methylene Chloride**	**1.0**	**1.3**	
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	0.2	< 0.2	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	**Toluene**	**0.2**	**1.4**	
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.2	< 0.2	U
179601-23-1	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: RP122311-05**
 SAMPLE

Lab Sample ID: UC49E
LIMS ID: 11-29416
Matrix: Water
Date Analyzed: 12/28/11 22:04

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	95.2%
Bromofluorobenzene	99.3%
d4-1,2-Dichlorobenzene	103%

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

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TB-122311**
 SAMPLE

Lab Sample ID: UC49F
LIMS ID: 11-29417
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 22:30

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TB-122311**
 SAMPLE

Lab Sample ID: UC49F
LIMS ID: 11-29417
Matrix: Water
Date Analyzed: 12/28/11 22:30

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	111%
d8-Toluene	95.5%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	106%

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

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-122811	Method Blank	10	105%	98.8%	102%	102%	0
LCS-122811	Lab Control	10	104%	102%	101%	101%	0
LCSD-122811	Lab Control Dup	10	101%	101%	99.5%	101%	0
UC41A	RP122211-01	10	105%	98.2%	102%	102%	0
UC41B	RP122211-02	10	109%	98.2%	100%	101%	0
UC41C	RP122211-03	10	108%	99.3%	99.8%	102%	0
MB-122811	Method Blank	10	100%	97.1%	102%	99.9%	0
LCS-122811	Lab Control	10	96.2%	96.7%	99.2%	105%	0
LCSD-122811	Lab Control Dup	10	96.8%	99.3%	98.8%	99.8%	0
UC41D	RP122211-04	10	110%	99.8%	102%	101%	0
UC41E	RP122211-05	10	108%	97.3%	98.9%	101%	0
UC41F	TB-122211	10	104%	98.2%	98.8%	101%	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: 11-29391 to 11-29396

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-122811	Method Blank	10	105%	98.8%	102%	102%	0
LCS-122811	Lab Control	10	104%	102%	101%	101%	0
LCSD-122811	Lab Control Dup	10	101%	101%	99.5%	101%	0
UC49A	RP122311-01	10	110%	96.4%	98.9%	105%	0
UC49B	RP122311-02	10	110%	95.0%	102%	104%	0
UC49C	RP122311-03	10	114%	96.1%	98.5%	104%	0
UC49D	RP122311-04	10	113%	95.3%	97.4%	103%	0
UC49E	RP122311-05	10	112%	95.2%	99.3%	103%	0
UC49F	TB-122311	10	111%	95.5%	100%	106%	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: 11-29412 to 11-29417

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-122811**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-122811
LIMS ID: 11-29394
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/PKC
LCSD: NT2/PKC
Date Analyzed LCS: 12/28/11 00:30
LCSD: 12/28/11 00:57

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	10.0	10.0	100%	9.3	10.0	93.0%	7.3%
Bromomethane	10.8	10.0	108%	9.5	10.0	95.0%	12.8%
Vinyl Chloride	10.1	10.0	101%	9.3	10.0	93.0%	8.2%
Chloroethane	11.2	10.0	112%	10.3	10.0	103%	8.4%
Methylene Chloride	10.2	10.0	102%	9.4	10.0	94.0%	8.2%
Acetone	53.6	50.0	107%	50.2	50.0	100%	6.6%
Carbon Disulfide	10.0	10.0	100%	9.1	10.0	91.0%	9.4%
1,1-Dichloroethene	10.1	10.0	101%	9.3	10.0	93.0%	8.2%
1,1-Dichloroethane	10.6	10.0	106%	9.8	10.0	98.0%	7.8%
trans-1,2-Dichloroethene	10.1	10.0	101%	9.4	10.0	94.0%	7.2%
cis-1,2-Dichloroethene	10.2	10.0	102%	9.7	10.0	97.0%	5.0%
Chloroform	10.4	10.0	104%	9.6	10.0	96.0%	8.0%
1,2-Dichloroethane	9.9	10.0	99.0%	9.8	10.0	98.0%	1.0%
2-Butanone	50.8	50.0	102%	52.6	50.0	105%	3.5%
1,1,1-Trichloroethane	10.1	10.0	101%	9.3	10.0	93.0%	8.2%
Carbon Tetrachloride	10.5	10.0	105%	9.1	10.0	91.0%	14.3%
Vinyl Acetate	10.0	10.0	100%	10.5	10.0	105%	4.9%
Bromodichloromethane	10.1	10.0	101%	10.0	10.0	100%	1.0%
1,2-Dichloropropane	10.2	10.0	102%	10.1	10.0	101%	1.0%
cis-1,3-Dichloropropene	9.6	10.0	96.0%	10.5	10.0	105%	9.0%
Trichloroethene	9.8	10.0	98.0%	9.4	10.0	94.0%	4.2%
Dibromochloromethane	10.3	10.0	103%	10.5	10.0	105%	1.9%
1,1,2-Trichloroethane	9.1	10.0	91.0%	9.7	10.0	97.0%	6.4%
Benzene	10.3	10.0	103%	9.8	10.0	98.0%	5.0%
trans-1,3-Dichloropropene	9.2	10.0	92.0%	10.3	10.0	103%	11.3%
2-Chloroethylvinylether	8.4	10.0	84.0%	9.8	10.0	98.0%	15.4%
Bromoform	10.0	10.0	100%	10.3	10.0	103%	3.0%
4-Methyl-2-Pentanone (MIBK)	52.1	50.0	104%	51.6	50.0	103%	1.0%
2-Hexanone	49.8	50.0	99.6%	51.0	50.0	102%	2.4%
Tetrachloroethene	10.1	10.0	101%	9.6	10.0	96.0%	5.1%
1,1,2,2-Tetrachloroethane	10.2	10.0	102%	10.0	10.0	100%	2.0%
Toluene	9.6	10.0	96.0%	9.8	10.0	98.0%	2.1%
Chlorobenzene	9.8	10.0	98.0%	9.7	10.0	97.0%	1.0%
Ethylbenzene	10.4	10.0	104%	9.9	10.0	99.0%	4.9%
Styrene	10.6	10.0	106%	10.6	10.0	106%	0.0%
Trichlorofluoromethane	10.6	10.0	106%	9.1	10.0	91.0%	15.2%
1,1,2-Trichloro-1,2,2-trifluoroetha	9.8	10.0	98.0%	9.2	10.0	92.0%	6.3%
m,p-Xylene	21.2	20.0	106%	20.3	20.0	102%	4.3%
o-Xylene	11.1	10.0	111%	10.3	10.0	103%	7.5%
1,2-Dichlorobenzene	10.1	10.0	101%	9.7	10.0	97.0%	4.0%
1,3-Dichlorobenzene	10.0	10.0	100%	9.6	10.0	96.0%	4.1%
1,4-Dichlorobenzene	9.7	10.0	97.0%	9.6	10.0	96.0%	1.0%
Acrolein	49.7	50.0	99.4%	49.1	50.0	98.2%	1.2%
Methyl Iodide	10.4	10.0	104%	9.5	10.0	95.0%	9.0%
Bromoethane	10.4	10.0	104%	9.5	10.0	95.0%	9.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-122811**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-122811
LIMS ID: 11-29394
Matrix: Water

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Acrylonitrile	10.5	10.0	105%	10.0	10.0	100%	4.9%
1,1-Dichloropropene	10.6	10.0	106%	9.7	10.0	97.0%	8.9%
Dibromomethane	10.1	10.0	101%	10.4	10.0	104%	2.9%
1,1,1,2-Tetrachloroethane	11.1	10.0	111%	10.1	10.0	101%	9.4%
1,2-Dibromo-3-chloropropane	11.1	10.0	111%	10.4	10.0	104%	6.5%
1,2,3-Trichloropropane	10.2	10.0	102%	10.2	10.0	102%	0.0%
trans-1,4-Dichloro-2-butene	10.5	10.0	105%	10.4	10.0	104%	1.0%
1,3,5-Trimethylbenzene	11.0	10.0	110%	10.4	10.0	104%	5.6%
1,2,4-Trimethylbenzene	11.0	10.0	110%	10.6	10.0	106%	3.7%
Hexachlorobutadiene	9.5	10.0	95.0%	8.6	10.0	86.0%	9.9%
Ethylene Dibromide	9.0	10.0	90.0%	9.9	10.0	99.0%	9.5%
Bromochloromethane	10.0	10.0	100%	9.8	10.0	98.0%	2.0%
2,2-Dichloropropane	9.4	10.0	94.0%	8.3	10.0	83.0%	12.4%
1,3-Dichloropropane	9.7	10.0	97.0%	10.4	10.0	104%	7.0%
Isopropylbenzene	10.9	10.0	109%	10.5	10.0	105%	3.7%
n-Propylbenzene	10.1	10.0	101%	10.0	10.0	100%	1.0%
Bromobenzene	9.6	10.0	96.0%	10.0	10.0	100%	4.1%
2-Chlorotoluene	10.3	10.0	103%	10.0	10.0	100%	3.0%
4-Chlorotoluene	9.9	10.0	99.0%	9.9	10.0	99.0%	0.0%
tert-Butylbenzene	10.9	10.0	109%	10.6	10.0	106%	2.8%
sec-Butylbenzene	10.8	10.0	108%	10.4	10.0	104%	3.8%
4-Isopropyltoluene	10.7	10.0	107%	10.4	10.0	104%	2.8%
n-Butylbenzene	8.7	10.0	87.0%	9.7	10.0	97.0%	10.9%
1,2,4-Trichlorobenzene	10.1	10.0	101%	9.4	10.0	94.0%	7.2%
Naphthalene	10.9	10.0	109%	10.3	10.0	103%	5.7%
1,2,3-Trichlorobenzene	10.4	10.0	104%	9.6	10.0	96.0%	8.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	96.2%	96.8%
d8-Toluene	96.7%	99.3%
Bromofluorobenzene	99.2%	98.8%
d4-1,2-Dichlorobenzene	105%	99.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-122811**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-122811
LIMS ID: 11-29391
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/PKC
LCSD: NT2/PKC
Date Analyzed LCS: 12/28/11 12:12
LCSD: 12/28/11 12:38

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

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	9.6	10.0	96.0%	10.2	10.0	102%	6.1%
Bromomethane	10.0	10.0	100%	11.1	10.0	111%	10.4%
Vinyl Chloride	9.8	10.0	98.0%	10.3	10.0	103%	5.0%
Chloroethane	10.3	10.0	103%	9.8	10.0	98.0%	5.0%
Methylene Chloride	9.8	10.0	98.0%	10.2	10.0	102%	4.0%
Acetone	47.8	50.0	95.6%	47.2	50.0	94.4%	1.3%
Carbon Disulfide	9.6	10.0	96.0%	7.8	10.0	78.0%	20.7%
1,1-Dichloroethene	9.6	10.0	96.0%	7.8	10.0	78.0%	20.7%
1,1-Dichloroethane	10.0	10.0	100%	10.5	10.0	105%	4.9%
trans-1,2-Dichloroethene	9.7	10.0	97.0%	10.2	10.0	102%	5.0%
cis-1,2-Dichloroethene	10.0	10.0	100%	10.2	10.0	102%	2.0%
Chloroform	10.0	10.0	100%	10.4	10.0	104%	3.9%
1,2-Dichloroethane	10.2	10.0	102%	10.1	10.0	101%	1.0%
2-Butanone	49.9	50.0	99.8%	48.1	50.0	96.2%	3.7%
1,1,1-Trichloroethane	9.9	10.0	99.0%	10.5	10.0	105%	5.9%
Carbon Tetrachloride	10.0	10.0	100%	10.4	10.0	104%	3.9%
Vinyl Acetate	10.2	10.0	102%	9.8	10.0	98.0%	4.0%
Bromodichloromethane	10.3	10.0	103%	10.6	10.0	106%	2.9%
1,2-Dichloropropane	10.3	10.0	103%	10.2	10.0	102%	1.0%
cis-1,3-Dichloropropene	10.7	10.0	107%	10.5	10.0	105%	1.9%
Trichloroethene	9.8	10.0	98.0%	9.9	10.0	99.0%	1.0%
Dibromochloromethane	10.2	10.0	102%	10.4	10.0	104%	1.9%
1,1,2-Trichloroethane	9.8	10.0	98.0%	9.8	10.0	98.0%	0.0%
Benzene	9.9	10.0	99.0%	10.1	10.0	101%	2.0%
trans-1,3-Dichloropropene	11.0	10.0	110%	10.7	10.0	107%	2.8%
2-Chloroethylvinylether	9.5	10.0	95.0%	9.9	10.0	99.0%	4.1%
Bromoform	10.3	10.0	103%	9.9	10.0	99.0%	4.0%
4-Methyl-2-Pentanone (MIBK)	51.8	50.0	104%	50.9	50.0	102%	1.8%
2-Hexanone	54.4	50.0	109%	51.8	50.0	104%	4.9%
Tetrachloroethene	9.9	10.0	99.0%	10.2	10.0	102%	3.0%
1,1,2,2-Tetrachloroethane	9.6	10.0	96.0%	9.6	10.0	96.0%	0.0%
Toluene	10.0	10.0	100%	10.2	10.0	102%	2.0%
Chlorobenzene	9.8	10.0	98.0%	9.9	10.0	99.0%	1.0%
Ethylbenzene	9.9	10.0	99.0%	10.2	10.0	102%	3.0%
Styrene	10.6	10.0	106%	10.7	10.0	107%	0.9%
Trichlorofluoromethane	10.7	10.0	107%	10.8	10.0	108%	0.9%
1,1,2-Trichloro-1,2,2-trifluoroetha	10.1	10.0	101%	9.5	10.0	95.0%	6.1%
m,p-Xylene	20.4	20.0	102%	20.8	20.0	104%	1.9%
o-Xylene	10.2	10.0	102%	10.5	10.0	105%	2.9%
1,2-Dichlorobenzene	9.6	10.0	96.0%	9.8	10.0	98.0%	2.1%
1,3-Dichlorobenzene	9.7	10.0	97.0%	9.9	10.0	99.0%	2.0%
1,4-Dichlorobenzene	9.5	10.0	95.0%	9.6	10.0	96.0%	1.0%
Acrolein	50.6	50.0	101%	51.3	50.0	103%	1.4%
Methyl Iodide	10.1	10.0	101%	10.6	10.0	106%	4.8%
Bromoethane	10.0	10.0	100%	10.5	10.0	105%	4.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-122811**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-122811
LIMS ID: 11-29391
Matrix: Water

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Acrylonitrile	9.8	10.0	98.0%	9.9	10.0	99.0%	1.0%
1,1-Dichloropropene	10.1	10.0	101%	10.2	10.0	102%	1.0%
Dibromomethane	10.7	10.0	107%	10.4	10.0	104%	2.8%
1,1,1,2-Tetrachloroethane	10.2	10.0	102%	10.6	10.0	106%	3.8%
1,2-Dibromo-3-chloropropane	9.8	10.0	98.0%	10.1	10.0	101%	3.0%
1,2,3-Trichloropropane	9.6	10.0	96.0%	9.8	10.0	98.0%	2.1%
trans-1,4-Dichloro-2-butene	11.3	10.0	113%	10.8	10.0	108%	4.5%
1,3,5-Trimethylbenzene	10.4	10.0	104%	10.6	10.0	106%	1.9%
1,2,4-Trimethylbenzene	10.4	10.0	104%	10.7	10.0	107%	2.8%
Hexachlorobutadiene	9.9	10.0	99.0%	9.8	10.0	98.0%	1.0%
Ethylene Dibromide	10.2	10.0	102%	10.2	10.0	102%	0.0%
Bromochloromethane	9.8	10.0	98.0%	10.1	10.0	101%	3.0%
2,2-Dichloropropane	10.0	10.0	100%	10.8	10.0	108%	7.7%
1,3-Dichloropropane	9.8	10.0	98.0%	9.8	10.0	98.0%	0.0%
Isopropylbenzene	10.3	10.0	103%	10.5	10.0	105%	1.9%
n-Propylbenzene	10.1	10.0	101%	10.1	10.0	101%	0.0%
Bromobenzene	9.7	10.0	97.0%	9.7	10.0	97.0%	0.0%
2-Chlorotoluene	9.8	10.0	98.0%	10.1	10.0	101%	3.0%
4-Chlorotoluene	10.0	10.0	100%	10.1	10.0	101%	1.0%
tert-Butylbenzene	10.4	10.0	104%	10.7	10.0	107%	2.8%
sec-Butylbenzene	10.5	10.0	105%	10.5	10.0	105%	0.0%
4-Isopropyltoluene	10.6	10.0	106%	10.7	10.0	107%	0.9%
n-Butylbenzene	10.4	10.0	104%	10.4	10.0	104%	0.0%
1,2,4-Trichlorobenzene	9.8	10.0	98.0%	10.0	10.0	100%	2.0%
Naphthalene	9.6	10.0	96.0%	9.6	10.0	96.0%	0.0%
1,2,3-Trichlorobenzene	9.7	10.0	97.0%	9.6	10.0	96.0%	1.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	104%	101%
d8-Toluene	102%	101%
Bromofluorobenzene	101%	99.5%
d4-1,2-Dichlorobenzene	101%	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-122811**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-122811
LIMS ID: 11-29412
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/PKC
LCSD: NT2/PKC
Date Analyzed LCS: 12/28/11 12:12
LCSD: 12/28/11 12:38

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

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	9.6	10.0	96.0%	10.2	10.0	102%	6.1%
Bromomethane	10.0	10.0	100%	11.1	10.0	111%	10.4%
Vinyl Chloride	9.8	10.0	98.0%	10.3	10.0	103%	5.0%
Chloroethane	10.3	10.0	103%	9.8	10.0	98.0%	5.0%
Methylene Chloride	9.8	10.0	98.0%	10.2	10.0	102%	4.0%
Acetone	47.8	50.0	95.6%	47.2	50.0	94.4%	1.3%
Carbon Disulfide	9.6	10.0	96.0%	7.8	10.0	78.0%	20.7%
1,1-Dichloroethene	9.6	10.0	96.0%	7.8	10.0	78.0%	20.7%
1,1-Dichloroethane	10.0	10.0	100%	10.5	10.0	105%	4.9%
trans-1,2-Dichloroethene	9.7	10.0	97.0%	10.2	10.0	102%	5.0%
cis-1,2-Dichloroethene	10.0	10.0	100%	10.2	10.0	102%	2.0%
Chloroform	10.0	10.0	100%	10.4	10.0	104%	3.9%
1,2-Dichloroethane	10.2	10.0	102%	10.1	10.0	101%	1.0%
2-Butanone	49.9	50.0	99.8%	48.1	50.0	96.2%	3.7%
1,1,1-Trichloroethane	9.9	10.0	99.0%	10.5	10.0	105%	5.9%
Carbon Tetrachloride	10.0	10.0	100%	10.4	10.0	104%	3.9%
Vinyl Acetate	10.2	10.0	102%	9.8	10.0	98.0%	4.0%
Bromodichloromethane	10.3	10.0	103%	10.6	10.0	106%	2.9%
1,2-Dichloropropane	10.3	10.0	103%	10.2	10.0	102%	1.0%
cis-1,3-Dichloropropene	10.7	10.0	107%	10.5	10.0	105%	1.9%
Trichloroethene	9.8	10.0	98.0%	9.9	10.0	99.0%	1.0%
Dibromochloromethane	10.2	10.0	102%	10.4	10.0	104%	1.9%
1,1,2-Trichloroethane	9.8	10.0	98.0%	9.8	10.0	98.0%	0.0%
Benzene	9.9	10.0	99.0%	10.1	10.0	101%	2.0%
trans-1,3-Dichloropropene	11.0	10.0	110%	10.7	10.0	107%	2.8%
2-Chloroethylvinylether	9.5	10.0	95.0%	9.9	10.0	99.0%	4.1%
Bromoform	10.3	10.0	103%	9.9	10.0	99.0%	4.0%
4-Methyl-2-Pentanone (MIBK)	51.8	50.0	104%	50.9	50.0	102%	1.8%
2-Hexanone	54.4	50.0	109%	51.8	50.0	104%	4.9%
Tetrachloroethene	9.9	10.0	99.0%	10.2	10.0	102%	3.0%
1,1,2,2-Tetrachloroethane	9.6	10.0	96.0%	9.6	10.0	96.0%	0.0%
Toluene	10.0	10.0	100%	10.2	10.0	102%	2.0%
Chlorobenzene	9.8	10.0	98.0%	9.9	10.0	99.0%	1.0%
Ethylbenzene	9.9	10.0	99.0%	10.2	10.0	102%	3.0%
Styrene	10.6	10.0	106%	10.7	10.0	107%	0.9%
Trichlorofluoromethane	10.7	10.0	107%	10.8	10.0	108%	0.9%
1,1,2-Trichloro-1,2,2-trifluoroetha	10.1	10.0	101%	9.5	10.0	95.0%	6.1%
m,p-Xylene	20.4	20.0	102%	20.8	20.0	104%	1.9%
o-Xylene	10.2	10.0	102%	10.5	10.0	105%	2.9%
1,2-Dichlorobenzene	9.6	10.0	96.0%	9.8	10.0	98.0%	2.1%
1,3-Dichlorobenzene	9.7	10.0	97.0%	9.9	10.0	99.0%	2.0%
1,4-Dichlorobenzene	9.5	10.0	95.0%	9.6	10.0	96.0%	1.0%
Acrolein	50.6	50.0	101%	51.3	50.0	103%	1.4%
Methyl Iodide	10.1	10.0	101%	10.6	10.0	106%	4.8%
Bromoethane	10.0	10.0	100%	10.5	10.0	105%	4.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-122811**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-122811
LIMS ID: 11-29412
Matrix: Water

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Acrylonitrile	9.8	10.0	98.0%	9.9	10.0	99.0%	1.0%
1,1-Dichloropropene	10.1	10.0	101%	10.2	10.0	102%	1.0%
Dibromomethane	10.7	10.0	107%	10.4	10.0	104%	2.8%
1,1,1,2-Tetrachloroethane	10.2	10.0	102%	10.6	10.0	106%	3.8%
1,2-Dibromo-3-chloropropane	9.8	10.0	98.0%	10.1	10.0	101%	3.0%
1,2,3-Trichloropropane	9.6	10.0	96.0%	9.8	10.0	98.0%	2.1%
trans-1,4-Dichloro-2-butene	11.3	10.0	113%	10.8	10.0	108%	4.5%
1,3,5-Trimethylbenzene	10.4	10.0	104%	10.6	10.0	106%	1.9%
1,2,4-Trimethylbenzene	10.4	10.0	104%	10.7	10.0	107%	2.8%
Hexachlorobutadiene	9.9	10.0	99.0%	9.8	10.0	98.0%	1.0%
Ethylene Dibromide	10.2	10.0	102%	10.2	10.0	102%	0.0%
Bromochloromethane	9.8	10.0	98.0%	10.1	10.0	101%	3.0%
2,2-Dichloropropane	10.0	10.0	100%	10.8	10.0	108%	7.7%
1,3-Dichloropropane	9.8	10.0	98.0%	9.8	10.0	98.0%	0.0%
Isopropylbenzene	10.3	10.0	103%	10.5	10.0	105%	1.9%
n-Propylbenzene	10.1	10.0	101%	10.1	10.0	101%	0.0%
Bromobenzene	9.7	10.0	97.0%	9.7	10.0	97.0%	0.0%
2-Chlorotoluene	9.8	10.0	98.0%	10.1	10.0	101%	3.0%
4-Chlorotoluene	10.0	10.0	100%	10.1	10.0	101%	1.0%
tert-Butylbenzene	10.4	10.0	104%	10.7	10.0	107%	2.8%
sec-Butylbenzene	10.5	10.0	105%	10.5	10.0	105%	0.0%
4-Isopropyltoluene	10.6	10.0	106%	10.7	10.0	107%	0.9%
n-Butylbenzene	10.4	10.0	104%	10.4	10.0	104%	0.0%
1,2,4-Trichlorobenzene	9.8	10.0	98.0%	10.0	10.0	100%	2.0%
Naphthalene	9.6	10.0	96.0%	9.6	10.0	96.0%	0.0%
1,2,3-Trichlorobenzene	9.7	10.0	97.0%	9.6	10.0	96.0%	1.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	104%	101%
d8-Toluene	102%	101%
Bromofluorobenzene	101%	99.5%
d4-1,2-Dichlorobenzene	101%	101%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB1227

Lab Name: ANALYTICAL RESOURCES INC

Client: AMEC GEOMATRIX

ARI Job No: UC41

Project: FRP SHORELINE

Lab File ID: MB1227X

Lab Sample ID: MB1227

Date Analyzed: 12/28/11

Time Analyzed: 0124

Instrument ID: NT2

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	LCS1227	LCS1227	LCS1227X	0030
02	LCS1227	LCS1227	LCS1227Y	0057
03	RP122211-04	UC41D	UC41D	0948
04	RP122211-05	UC41E	UC41E	1014
05	TB-122211	UC41F	UC41F	1041
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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-122811**
 METHOD BLANK

Lab Sample ID: MB-122811
LIMS ID: 11-29394
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 01:24

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-122811**
 METHOD BLANK

Lab Sample ID: MB-122811
LIMS ID: 11-29394
Matrix: Water
Date Analyzed: 12/28/11 01:24

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	97.1%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	99.9%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB1228

Lab Name: ANALYTICAL RESOURCES INC

Client: AMEC GEOMATRIX

ARI Job No: UC41

Project: FRP SHORELINE

Lab File ID: MB1228

Lab Sample ID: MB1228

Date Analyzed: 12/28/11

Time Analyzed: 1305

Instrument ID: NT2

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	LCS1228	LCS1228	LCS1228	1212
02	LCS1228	LCS1228	LCS1228A	1238
03	RP122211-01	UC41A	UC41A2	1403
04	RP122211-02	UC41B	UC41B2	1430
05	RP122211-03	UC41C	UC41C2	1457
06	RP122311-01	UC49A	UC49A	2018
07	RP122311-02	UC49B	UC49B	2044
08	RP122311-03	UC49C	UC49C	2111
09	RP122311-04	UC49D	UC49D	2137
10	RP122311-05	UC49E	UC49E	2204
11	TB-122311	UC49F	UC49F	2230
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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-122811**

METHOD BLANK

Lab Sample ID: MB-122811
LIMS ID: 11-29391
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 13:05

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-122811**
 METHOD BLANK

Lab Sample ID: MB-122811
LIMS ID: 11-29391
Matrix: Water
Date Analyzed: 12/28/11 13:05

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	98.8%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-122811**
 METHOD BLANK

Lab Sample ID: MB-122811
LIMS ID: 11-29412
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/PKC
Date Analyzed: 12/28/11 13:05

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-122811**
 METHOD BLANK

Lab Sample ID: MB-122811
LIMS ID: 11-29412
Matrix: Water
Date Analyzed: 12/28/11 13:05

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	98.8%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	102%

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP SHORELINE SDG No.: UC41

Lab File ID: BFB1227B BFB Injection Date: 12/27/11

Instrument ID: NT2 BFB Injection Time: 1123

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	19.4
75	30.0 - 66.0% of mass 95	50.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.2 (0.2)1
174	50.0 - 101.0% of mass 95	86.1
175	4.0 - 9.0% of mass 174	6.3 (7.3)1
176	93.0 - 101.0% of mass 174	84.2 (97.7)1
177	5.0 - 9.0% of mass 176	5.9 (7.0)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	IC0.2	IC0.2	0021227	12/27/11	1354
02	IC0.5	IC0.5	0051227	12/27/11	1420
03	IC01	IC01	0101227	12/27/11	1447
04	IC02	IC02	0201227	12/27/11	1514
05	IC10	IC10	1001227	12/27/11	1541
06	IC20	IC20	2001227	12/27/11	1607
07	IC40	IC40	4001227	12/27/11	1634
08	IC60	IC60	6001227	12/27/11	1701
09	ICV10	ICV10	ICV1227	12/27/11	1755
10					
11					
12					
13					
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16					
17					
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21					
22					

FORM V VOA OLM3.2M

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP SHORELINE SDG No.: UC41

Lab File ID: BFB1227Y BFB Injection Date: 12/27/11

Instrument ID: NT2 BFB Injection Time: 2339

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	18.6
75	30.0 - 66.0% of mass 95	48.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.7
173	Less than 2.0% of mass 174	0.2 (0.2)1
174	50.0 - 101.0% of mass 95	81.8
175	4.0 - 9.0% of mass 174	5.9 (7.2)1
176	93.0 - 101.0% of mass 174	82.1 (100.4)1
177	5.0 - 9.0% of mass 176	5.8 (7.0)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	CC1227	CC1227	CC1227X	12/28/11	0004
02	LCS1227	LCS1227	LCS1227X	12/28/11	0030
03	LCS1227	LCS1227	LCS1227Y	12/28/11	0057
04	MB1227	MB1227	MB1227X	12/28/11	0124
05	RP122211-04	UC41D	UC41D	12/28/11	0948
06	RP122211-05	UC41E	UC41E	12/28/11	1014
07	TB-122211	UC41F	UC41F	12/28/11	1041
08					
09					
10					
11					
12					
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22					

FORM V VOA OLM3.2M

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP SHORELINE SDG No.: UC41

Lab File ID: BFB1228 BFB Injection Date: 12/28/11

Instrument ID: NT2 BFB Injection Time: 1111

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	19.2
75	30.0 - 66.0% of mass 95	47.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.3
173	Less than 2.0% of mass 174	0.2 (0.2)1
174	50.0 - 101.0% of mass 95	86.4
175	4.0 - 9.0% of mass 174	5.8 (6.7)1
176	93.0 - 101.0% of mass 174	81.1 (93.8)1
177	5.0 - 9.0% of mass 176	6.1 (7.5)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	CC1228	CC1228	CC1228	12/28/11	1145
02	LCS1228	LCS1228	LCS1228	12/28/11	1212
03	LCS1228	LCS1228	LCS1228A	12/28/11	1238
04	MB1228	MB1228	MB1228	12/28/11	1305
05	RP122211-01	UC41A	UC41A2	12/28/11	1403
06	RP122211-02	UC41B	UC41B2	12/28/11	1430
07	RP122211-03	UC41C	UC41C2	12/28/11	1457
08	RP122311-01	UC49A	UC49A	12/28/11	2018
09	RP122311-02	UC49B	UC49B	12/28/11	2044
10	RP122311-03	UC49C	UC49C	12/28/11	2111
11	RP122311-04	UC49D	UC49D	12/28/11	2137
12	RP122311-05	UC49E	UC49E	12/28/11	2204
13	TB-122311	UC49F	UC49F	12/28/11	2230
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: UC41 Project: FRP SHORELINE

Instrument ID: NT2 Calibration Date: 12/27/11

LAB FILE ID: RF0.2: 0021227 RF0.5: 0051227 RF1: 0101227
RF2: 0201227 RF10: 1001227

COMPOUND	RF0.2	RF0.5	RF1	RF2	RF10
Chloromethane		0.984	0.868	0.736	0.867
Vinyl Chloride	0.920	0.807	0.808	0.668	0.809
Bromomethane		0.338	0.327	0.282	0.341
Chloroethane	0.400	0.396	0.341	0.301	0.352
Trichlorofluoromethane	0.577	0.660	0.662	0.581	0.738
Acrolein		0.051	0.058	0.043	0.051
112Trichloro122Trifluoroetha	0.594	0.586	0.571	0.473	0.593
Acetone			0.108	0.090	0.104
1,1-Dichloroethene	0.610	0.583	0.578	0.468	0.576
Bromoethane	0.372	0.479	0.460	0.375	0.475
Iodomethane			0.972	0.835	1.035
Methylene Chloride		0.677	0.609	0.519	0.644
Acrylonitrile		0.124	0.140	0.113	0.141
Carbon Disulfide	2.222	2.216	1.917	1.652	2.077
Trans-1,2-Dichloroethene	0.620	0.680	0.662	0.526	0.643
Vinyl Acetate		0.596	0.620	0.539	0.624
1,1-Dichloroethane	1.064	1.074	1.073	0.929	1.105
2-Butanone		0.133	0.148	0.124	0.135
2,2-Dichloropropane	0.716	0.772	0.738	0.605	0.797
Cis-1,2-Dichloroethene	0.590	0.654	0.613	0.519	0.643
Chloroform	0.965	1.002	0.983	0.838	1.004
Bromochloromethane	0.275	0.295	0.278	0.232	0.278
1,1,1-Trichloroethane	0.902	1.041	0.905	0.749	0.962
1,1-Dichloropropene	0.501	0.519	0.491	0.433	0.536
Carbon Tetrachloride	0.454	0.595	0.523	0.448	0.584
1,2-Dichloroethane	0.390	0.413	0.424	0.353	0.393
Benzene	1.335	1.459	1.440	1.234	1.484
Trichloroethene	0.421	0.415	0.382	0.333	0.388
1,2-Dichloropropane	0.266	0.318	0.336	0.274	0.330
Bromodichloromethane	0.316	0.421	0.389	0.335	0.399
Dibromomethane	0.111	0.155	0.156	0.138	0.155
2-Chloroethyl Vinyl Ether			0.094	0.080	0.087
4-Methyl-2-Pentanone		0.075	0.080	0.069	0.090
Cis 1,3-dichloropropene	0.330	0.364	0.399	0.353	0.409
Toluene	0.820	0.848	0.821	0.726	0.827
Trans 1,3-Dichloropropene	0.309	0.290	0.321	0.300	0.328
2-Hexanone		0.126	0.143	0.128	0.136

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: UC41 Project: FRP SHORELINE

Instrument ID: NT2 Calibration Date: 12/27/11

LAB FILE ID: RF0.2: 0021227 RF0.5: 0051227 RF1: 0101227
RF2: 0201227 RF10: 1001227

COMPOUND	RF0.2	RF0.5	RF1	RF2	RF10
1,1,2-Trichloroethane	0.220	0.204	0.224	0.180	0.198
1,3-Dichloropropane	0.370	0.372	0.385	0.349	0.360
Tetrachloroethene	0.387	0.448	0.434	0.355	0.416
Chlorodibromomethane	0.193	0.249	0.258	0.225	0.273
1,2-Dibromoethane	0.187	0.190	0.196	0.174	0.188
Chlorobenzene	0.972	1.006	1.004	0.863	0.953
Ethyl Benzene	0.511	0.528	0.516	0.465	0.547
1,1,1,2-Tetrachloroethane	0.296	0.388	0.362	0.320	0.420
m,p-xylene	0.598	0.627	0.642	0.563	0.686
o-Xylene	0.539	0.643	0.635	0.573	0.734
Styrene	0.743	0.777	0.885	0.800	1.008
Bromoform	0.204	0.214	0.230	0.208	0.244
1,1,2,2-Tetrachloroethane	0.423	0.421	0.421	0.383	0.442
1,2,3-Trichloropropane		0.137	0.148	0.130	0.139
Trans-1,4-Dichloro 2-Butene			0.037	0.044	0.055
N-Propyl Benzene	2.747	2.892	2.969	2.638	3.097
Bromobenzene	0.649	0.642	0.694	0.585	0.630
Isopropyl Benzene	2.178	2.356	2.550	2.275	2.865
2-Chloro Toluene	1.922	2.127	2.186	1.857	2.234
4-Chloro Toluene	1.795	1.838	1.980	1.698	1.920
T-Butyl Benzene	1.635	1.746	1.900	1.719	2.171
1,3,5-Trimethyl Benzene	1.882	2.122	2.255	1.996	2.505
1,2,4-Trimethylbenzene	1.765	2.029	2.285	2.028	2.537
S-Butyl Benzene	2.398	2.645	2.918	2.588	3.176
4-Isopropyl Toluene	2.068	2.162	2.360	2.128	2.686
1,3-Dichlorobenzene	1.415	1.428	1.450	1.248	1.380
1,4-Dichlorobenzene	1.503	1.507	1.494	1.284	1.401
N-Butyl Benzene	2.051	2.052	2.229	1.899	2.324
1,2-Dichlorobenzene	1.339	1.385	1.367	1.198	1.322
1,2-Dibromo 3-Chloropropane		0.063	0.071	0.058	0.073
1,2,4-Trichlorobenzene	0.863	0.862	0.847	0.740	0.922
Hexachloro 1,3-Butadiene		0.481	0.477	0.396	0.461
Naphthalene		1.164	1.180	1.070	1.409
1,2,3-Trichlorobenzene		0.675	0.668	0.590	0.696
Dichlorodifluoromethane	0.562	0.566	0.530	0.461	0.577
Methyl tert butyl ether	1.425	1.456	1.451	1.242	1.564

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: UC41 Project: FRP SHORELINE

Instrument ID: NT2 Calibration Date: 12/27/11

LAB FILE ID: RF0.2: 0021227 RF0.5: 0051227 RF1: 0101227
RF2: 0201227 RF10: 1001227

COMPOUND	RF0.2	RF0.5	RF1	RF2	RF10
d4-1,2-Dichloroethane	0.496	0.510	0.523	0.501	0.483
d8-Toluene	1.136	1.157	1.126	1.140	1.175
4-Bromofluorobenzene	0.522	0.536	0.522	0.529	0.527
d4-1,2-Dichlorobenzene	0.898	0.914	0.897	0.891	0.915
Dibromofluoromethane	0.501	0.509	0.508	0.496	0.512

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: UC41 Project: FRP SHORELINE

Instrument ID: NT2 Calibration Date: 12/27/11

LAB FILE ID: RF20: 2001227 RF40: 4001227 RF60: 6001227

COMPOUND	RF20	RF40	RF60
Chloromethane	0.863	0.812	0.800
Vinyl Chloride	0.819	0.782	0.760
Bromomethane	0.331	0.310	0.287
Chloroethane	0.362	0.298	
Trichlorofluoromethane	0.742	0.701	0.633
Acrolein	0.058	0.057	0.057
112Trichloro122Trifluoroetha	0.587	0.548	0.546
Acetone	0.110	0.103	0.100
1,1-Dichloroethene	0.573	0.531	0.533
Bromoethane	0.477	0.453	0.451
Iodomethane	1.034	0.954	0.955
Methylene Chloride	0.629	0.596	0.595
Acrylonitrile	0.148	0.142	0.145
Carbon Disulfide	2.074	1.908	1.891
Trans-1,2-Dichloroethene	0.659	0.621	0.614
Vinyl Acetate	0.715	0.756	0.780
1,1-Dichloroethane	1.126	1.076	1.070
2-Butanone	0.151	0.152	
2,2-Dichloropropane	0.798	0.741	0.698
Cis-1,2-Dichloroethene	0.646	0.621	0.619
Chloroform	1.028	0.987	0.975
Bromochloromethane	0.284	0.274	0.276
1,1,1-Trichloroethane	0.980	0.912	0.881
1,1-Dichloropropene	0.524	0.504	0.486
Carbon Tetrachloride	0.554	0.512	0.493
1,2-Dichloroethane	0.392	0.376	0.373
Benzene	1.441	1.380	1.335
Trichloroethene	0.383	0.375	0.363
1,2-Dichloropropane	0.334	0.326	0.322
Bromodichloromethane	0.414	0.415	0.411
Dibromomethane	0.156	0.153	0.153
2-Chloroethyl Vinyl Ether	0.103	0.118	0.120
4-Methyl-2-Pentanone	0.093	0.089	0.085
Cis 1,3-dichloropropene	0.464	0.476	0.470
Toluene	0.854	0.839	0.813
Trans 1,3-Dichloropropene	0.366	0.382	0.377
2-Hexanone	0.150	0.151	0.144

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: UC41 Project: FRP SHORELINE

Instrument ID: NT2 Calibration Date: 12/27/11

LAB FILE ID: RF20: 2001227 RF40: 4001227 RF60: 6001227

COMPOUND	RF20	RF40	RF60
1,1,2-Trichloroethane	0.209	0.210	0.207
1,3-Dichloropropane	0.390	0.405	0.395
Tetrachloroethene	0.418	0.398	0.374
Chlorodibromomethane	0.301	0.306	0.300
1,2-Dibromoethane	0.201	0.207	0.207
Chlorobenzene	0.991	0.976	0.923
Ethyl Benzene	0.565	0.542	0.510
1,1,1,2-Tetrachloroethane	0.416	0.389	0.378
m,p-xylene	0.693	0.656	0.609
o-Xylene	0.738	0.699	0.668
Styrene	1.065	1.061	1.040
Bromoform	0.278	0.305	0.298
1,1,2,2-Tetrachloroethane	0.462	0.479	0.469
1,2,3-Trichloropropane	0.143	0.149	
Trans-1,4-Dichloro 2-Butene	0.074	0.087	0.086
N-Propyl Benzene	3.224	3.336	3.148
Bromobenzene	0.665	0.704	0.672
Isopropyl Benzene	3.019	3.121	2.997
2-Chloro Toluene	2.334	2.383	2.296
4-Chloro Toluene	2.025	2.150	2.063
T-Butyl Benzene	2.323	2.333	2.238
1,3,5-Trimethyl Benzene	2.616	2.612	2.492
1,2,4-Trimethylbenzene	2.622	2.634	2.513
S-Butyl Benzene	3.291	3.255	3.102
4-Isopropyl Toluene	2.812	2.770	2.623
1,3-Dichlorobenzene	1.429	1.419	1.351
1,4-Dichlorobenzene	1.436	1.438	1.370
N-Butyl Benzene	2.320	2.373	2.216
1,2-Dichlorobenzene	1.346	1.299	1.223
1,2-Dibromo 3-Chloropropane	0.076	0.074	0.068
1,2,4-Trichlorobenzene	0.948	0.867	0.792
Hexachloro 1,3-Butadiene	0.461	0.426	0.391
Naphthalene	1.497	1.404	1.288
1,2,3-Trichlorobenzene	0.716	0.652	0.599
Dichlorodifluoromethane	0.572	0.543	0.542
Methyl tert butyl ether	1.619	1.530	1.535

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: UC41 Project: FRP SHORELINE

Instrument ID: NT2 Calibration Date: 12/27/11

LAB FILE ID: RF20: 2001227 RF40: 4001227 RF60: 6001227

COMPOUND	RF20	RF40	RF60
d4-1,2-Dichloroethane	0.493	0.478	0.494
d8-Toluene	1.184	1.191	1.212
4-Bromofluorobenzene	0.513	0.514	0.508
d4-1,2-Dichlorobenzene	0.910	0.876	0.842
Dibromofluoromethane	0.520	0.502	0.521

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC | Client: AMEC GEOMATRIX

ARI Job No: UC41 | Project: FRP SHORELINE

Instrument ID: NT2 | Calibration Date: 12/27/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
Chloromethane	AVRG	0.847	9.1
Vinyl Chloride	AVRG	0.796	8.8
Bromomethane	AVRG	0.317	7.7
Chloroethane	AVRG	0.350	11.6
Trichlorofluoromethane	AVRG	0.662	9.6
Acrolein	AVRG	0.054	10.6
112Trichloro122Trifluoroetha	AVRG	0.562	7.2
Acetone	AVRG	0.103	6.7
1,1-Dichloroethene	AVRG	0.557	8.0
Bromoethane	AVRG	0.443	10.0
Iodomethane	AVRG	0.964	7.6
Methylene Chloride	AVRG	0.610	8.1
Acrylonitrile	AVRG	0.136	9.3
Carbon Disulfide	AVRG	1.995	9.6
Trans-1,2-Dichloroethene	AVRG	0.628	7.5
Vinyl Acetate	AVRG	0.662	13.6
1,1-Dichloroethane	AVRG	1.065	5.5
2-Butanone	AVRG	0.140	8.1
2,2-Dichloropropane	AVRG	0.733	8.6
Cis-1,2-Dichloroethene	AVRG	0.613	7.1
Chloroform	AVRG	0.973	6.0
Bromochloromethane	AVRG	0.274	6.6
1,1,1-Trichloroethane	AVRG	0.916	9.3
1,1-Dichloropropene	AVRG	0.499	6.3
Carbon Tetrachloride	AVRG	0.520	10.6
1,2-Dichloroethane	AVRG	0.389	5.8
Benzene	AVRG	1.388	6.0
Trichloroethene	AVRG	0.382	7.3
1,2-Dichloropropane	AVRG	0.313	8.8
Bromodichloromethane	AVRG	0.387	10.3
Dibromomethane	AVRG	0.147	10.7
2-Chloroethyl Vinyl Ether	AVRG	0.100	16.4
4-Methyl-2-Pentanone	AVRG	0.083	10.4
Cis 1,3-dichloropropene	AVRG	0.408	14.0
Toluene	AVRG	0.819	4.9
Trans 1,3-Dichloropropene	AVRG	0.334	10.8
2-Hexanone	AVRG	0.140	7.4

<- 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: UC41 — Project: FRP SHORELINE

Instrument ID: NT2 — Calibration Date: 12/27/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
1,1,2-Trichloroethane	AVRG	0.206	6.5
1,3-Dichloropropane	AVRG	0.378	5.0
Tetrachloroethene	AVRG	0.404	7.7
Chlorodibromomethane	AVRG	0.263	15.3
1,2-Dibromoethane	AVRG	0.194	5.8
Chlorobenzene	AVRG	0.961	5.0
Ethyl Benzene	AVRG	0.523	5.8
1,1,1,2-Tetrachloroethane	AVRG	0.371	11.8
m,p-xylene	AVRG	0.634	7.0
o-Xylene	AVRG	0.654	11.0
Styrene	AVRG	0.922	14.8
Bromoform	AVRG	0.248	16.6
1,1,2,2-Tetrachloroethane	AVRG	0.438	7.3
1,2,3-Trichloropropane	AVRG	0.141	4.9
Trans-1,4-Dichloro 2-Butene	2ORDR		0.9960
N-Propyl Benzene	AVRG	3.006	8.0
Bromobenzene	AVRG	0.655	5.8
Isopropyl Benzene	AVRG	2.670	14.0
2-Chloro Toluene	AVRG	2.167	8.8
4-Chloro Toluene	AVRG	1.934	7.8
T-Butyl Benzene	AVRG	2.008	14.4
1,3,5-Trimethyl Benzene	AVRG	2.310	12.4
1,2,4-Trimethylbenzene	AVRG	2.302	14.2
S-Butyl Benzene	AVRG	2.922	11.6
4-Isopropyl Toluene	AVRG	2.451	12.5
1,3-Dichlorobenzene	AVRG	1.390	4.7
1,4-Dichlorobenzene	AVRG	1.429	5.4
N-Butyl Benzene	AVRG	2.183	7.6
1,2-Dichlorobenzene	AVRG	1.310	5.1
1,2-Dibromo 3-Chloropropane	AVRG	0.069	9.3
1,2,4-Trichlorobenzene	AVRG	0.855	7.8
Hexachloro 1,3-Butadiene	AVRG	0.442	8.4
Naphthalene	AVRG	1.287	12.1
1,2,3-Trichlorobenzene	AVRG	0.657	7.2
Dichlorodifluoromethane	AVRG	0.544	6.8
Methyl tert butyl ether	AVRG	1.478	7.8

<- 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: UC41 Project: FRP SHORELINE

Instrument ID: NT2 Calibration Date: 12/27/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
d4-1,2-Dichloroethane	AVRG	0.497	2.9
d8-Toluene	AVRG	1.165	2.6
4-Bromofluorobenzene	AVRG	0.521	1.8
d4-1,2-Dichlorobenzene	AVRG	0.893	2.7
Dibromofluoromethane	AVRG	0.508	1.7

<- 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: UC41 — Project: FRP SHORELINE

Instrument ID: NT2 — Cont. Calib. Date: 12/28/11

Init. Calib. Date: 12/27/11 — Cont. Calib. Time: 0004

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Chloromethane	0.847	0.7764	0.100	AVRG	-8.3
Vinyl Chloride	0.797	0.7285	0.010	AVRG	-8.6
Bromomethane	0.316	0.2981	0.010	AVRG	-5.7
Chloroethane	0.350	0.3609	0.010	AVRG	3.1
Trichlorofluoromethane	0.662	0.6470	0.010	AVRG	-2.3
Acrolein	0.054	0.0510	0.010	AVRG	-5.6
112Trichloro122Trifluoroetha	0.562	0.5061	0.010	AVRG	-9.9
Acetone	0.102	0.1045	0.010	AVRG	2.4
1,1-Dichloroethene	0.556	0.5230	0.010	AVRG	-5.9
Bromoethane	0.443	0.4206	0.010	AVRG	-5.0
Iodomethane	0.964	0.9300	0.010	AVRG	-3.5
Methylene Chloride	0.610	0.5785	0.010	AVRG	-5.2
Acrylonitrile	0.136	0.1365	0.010	AVRG	0.4
Carbon Disulfide	1.995	1.8302	0.010	AVRG	-8.3
Trans-1,2-Dichloroethene	0.628	0.5885	0.010	AVRG	-6.3
Vinyl Acetate	0.661	0.6518	0.010	AVRG	-1.4
1,1-Dichloroethane	1.065	1.0514	0.100	AVRG	-1.3
2-Butanone	0.140	0.1407	0.010	AVRG	0.5
2,2-Dichloropropane	0.733	0.6292	0.010	AVRG	-14.2
Cis-1,2-Dichloroethene	0.613	0.5977	0.010	AVRG	-2.5
Chloroform	0.973	0.9498	0.010	AVRG	-2.4
Bromochloromethane	0.274	0.2611	0.010	AVRG	-4.7
1,1,1-Trichloroethane	0.916	0.8581	0.010	AVRG	-6.3
1,1-Dichloropropene	0.499	0.4913	0.010	AVRG	-1.5
Carbon Tetrachloride	0.520	0.4966	0.010	AVRG	-4.5
1,2-Dichloroethane	0.389	0.3796	0.010	AVRG	-2.4
Benzene	1.388	1.3750	0.010	AVRG	-0.9
Trichloroethene	0.382	0.3619	0.010	AVRG	-5.3
1,2-Dichloropropane	0.313	0.3128	0.010	AVRG	-0.1
Bromodichloromethane	0.388	0.3822	0.010	AVRG	-1.5
Dibromomethane	0.147	0.1463	0.010	AVRG	-0.5
2-Chloroethyl Vinyl Ether	0.100	0.0868	0.010	AVRG	-13.2
4-Methyl-2-Pentanone	0.083	0.0828	0.010	AVRG	-0.2
Cis 1,3-dichloropropene	0.408	0.3934	0.010	AVRG	-3.6
Toluene	0.818	0.7597	0.010	AVRG	-7.1
Trans 1,3-Dichloropropene	0.334	0.3129	0.010	AVRG	-6.3
2-Hexanone	0.140	0.1406	0.010	AVRG	0.4

<- 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: UC41 — Project: FRP SHORELINE

Instrument ID: NT2 — Cont. Calib. Date: 12/28/11

Init. Calib. Date: 12/27/11 — Cont. Calib. Time: 0004

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
1,1,2-Trichloroethane	0.206	0.1861	0.010	AVRG	-9.7
1,3-Dichloropropane	0.378	0.3670	0.010	AVRG	-2.9
Tetrachloroethene	0.404	0.3858	0.010	AVRG	-4.5
Chlorodibromomethane	0.263	0.2660	0.010	AVRG	1.1
1,2-Dibromoethane	0.194	0.1773	0.010	AVRG	-8.6
Chlorobenzene	0.961	0.9249	0.300	AVRG	-3.8
Ethyl Benzene	0.523	0.5267	0.010	AVRG	0.7
1,1,1,2-Tetrachloroethane	0.371	0.3961	0.010	AVRG	6.8
m,p-xylene	0.634	0.6491	0.010	AVRG	2.4
o-Xylene	0.654	0.6826	0.010	AVRG	4.4
Styrene	0.922	0.9932	0.010	AVRG	7.7
Bromoform	0.248	0.2407	0.100	AVRG	-2.9
1,1,2,2-Tetrachloroethane	0.438	0.4302	0.300	AVRG	-1.8
1,2,3-Trichloropropane	0.141	0.1369	0.010	AVRG	-2.9
Trans-1,4-Dichloro 2-Butene	10.000	10.244	0.010	2ORDR	2.4
N-Propyl Benzene	3.006	2.8893	0.010	AVRG	-3.9
Bromobenzene	0.655	0.6137	0.010	AVRG	-6.3
Isopropyl Benzene	2.670	2.7116	0.010	AVRG	1.6
2-Chloro Toluene	2.167	2.0954	0.010	AVRG	-3.3
4-Chloro Toluene	1.934	1.8311	0.010	AVRG	-5.3
T-Butyl Benzene	2.008	2.0542	0.010	AVRG	2.3
1,3,5-Trimethyl Benzene	2.310	2.3483	0.010	AVRG	1.6
1,2,4-Trimethylbenzene	2.302	2.3687	0.010	AVRG	2.9
S-Butyl Benzene	2.922	2.9217	0.010	AVRG	-0.0
4-Isopropyl Toluene	2.451	2.4564	0.010	AVRG	0.2
1,3-Dichlorobenzene	1.390	1.2921	0.010	AVRG	-7.0
1,4-Dichlorobenzene	1.429	1.3269	0.010	AVRG	-7.1
N-Butyl Benzene	2.183	2.0843	0.010	AVRG	-4.5
1,2-Dichlorobenzene	1.310	1.2565	0.010	AVRG	-4.1
1,2-Dibromo 3-Chloropropane	0.069	0.0712	0.010	AVRG	3.2
1,2,4-Trichlorobenzene	0.855	0.8038	0.010	AVRG	-6.0
Hexachloro 1,3-Butadiene	0.442	0.3819	0.010	AVRG	-13.6
Naphthalene	1.287	1.3152	0.010	AVRG	2.2
1,2,3-Trichlorobenzene	0.656	0.6359	0.010	AVRG	-3.1
Dichlorodifluoromethane	0.544	0.4871	0.010	AVRG	-10.4
Methyl tert butyl ether	1.478	1.4297	0.010	AVRG	-3.3

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

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: UC41 — Project: FRP SHORELINE

Instrument ID: NT2 — Cont. Calib. Date: 12/28/11

Init. Calib. Date: 12/27/11 — Cont. Calib. Time: 0004

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.497	0.4748	0.010	AVRG	-4.5
d8-Toluene	1.165	1.1238	0.010	AVRG	-3.5
4-Bromofluorobenzene	0.521	0.5236	0.010	AVRG	0.5
d4-1,2-Dichlorobenzene	0.893	0.9052	0.010	AVRG	1.4
Dibromofluoromethane	0.509	0.5024	0.010	AVRG	-1.3

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

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: UC41 — Project: FRP SHORELINE

Instrument ID: NT2 — Cont. Calib. Date: 12/28/11

Init. Calib. Date: 12/27/11 — Cont. Calib. Time: 1145

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Chloromethane	0.847	0.8035	0.100	AVRG	-5.1
Vinyl Chloride	0.797	0.7670	0.010	AVRG	-3.8
Bromomethane	0.316	0.3223	0.010	AVRG	2.0
Chloroethane	0.350	0.3476	0.010	AVRG	-0.7
Trichlorofluoromethane	0.662	0.6653	0.010	AVRG	0.5
Acrolein	0.054	0.0515	0.010	AVRG	-4.6
112Trichloro122Trifluoroetha	0.562	0.5634	0.010	AVRG	0.2
Acetone	0.102	0.0930	0.010	AVRG	-8.8
1,1-Dichloroethene	0.556	0.5351	0.010	AVRG	-3.8
Bromoethane	0.443	0.4278	0.010	AVRG	-3.4
Iodomethane	0.964	0.9469	0.010	AVRG	-1.8
Methylene Chloride	0.610	0.5766	0.010	AVRG	-5.5
Acrylonitrile	0.136	0.1241	0.010	AVRG	-8.8
Carbon Disulfide	1.995	1.8816	0.010	AVRG	-5.7
Trans-1,2-Dichloroethene	0.628	0.5968	0.010	AVRG	-5.0
Vinyl Acetate	0.661	0.6272	0.010	AVRG	-5.1
1,1-Dichloroethane	1.065	1.0517	0.100	AVRG	-1.2
2-Butanone	0.140	0.1336	0.010	AVRG	-4.6
2,2-Dichloropropane	0.733	0.7434	0.010	AVRG	1.4
Cis-1,2-Dichloroethene	0.613	0.5896	0.010	AVRG	-3.8
Chloroform	0.973	0.9610	0.010	AVRG	-1.2
Bromochloromethane	0.274	0.2604	0.010	AVRG	-5.0
1,1,1-Trichloroethane	0.916	0.9047	0.010	AVRG	-1.2
1,1-Dichloropropene	0.499	0.5032	0.010	AVRG	0.8
Carbon Tetrachloride	0.520	0.5134	0.010	AVRG	-1.3
1,2-Dichloroethane	0.389	0.3855	0.010	AVRG	-0.9
Benzene	1.388	1.3699	0.010	AVRG	-1.3
Trichloroethene	0.382	0.3773	0.010	AVRG	-1.2
1,2-Dichloropropane	0.313	0.3181	0.010	AVRG	1.6
Bromodichloromethane	0.388	0.3990	0.010	AVRG	2.8
Dibromomethane	0.147	0.1487	0.010	AVRG	1.2
2-Chloroethyl Vinyl Ether	0.100	0.0984	0.010	AVRG	-1.6
4-Methyl-2-Pentanone	0.083	0.0820	0.010	AVRG	-1.2
Cis 1,3-dichloropropene	0.408	0.4413	0.010	AVRG	8.2
Toluene	0.818	0.8232	0.010	AVRG	0.6
Trans 1,3-Dichloropropene	0.334	0.3664	0.010	AVRG	9.7
2-Hexanone	0.140	0.1433	0.010	AVRG	2.4

<- 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: UC41 — Project: FRP SHORELINE

Instrument ID: NT2 — Cont. Calib. Date: 12/28/11

Init. Calib. Date: 12/27/11 — Cont. Calib. Time: 1145

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
1,1,2-Trichloroethane	0.206	0.2020	0.010	AVRG	-1.9
1,3-Dichloropropane	0.378	0.3745	0.010	AVRG	-0.9
Tetrachloroethene	0.404	0.4132	0.010	AVRG	2.3
Chlorodibromomethane	0.263	0.2714	0.010	AVRG	3.2
1,2-Dibromoethane	0.194	0.1890	0.010	AVRG	-2.6
Chlorobenzene	0.961	0.9569	0.300	AVRG	-0.4
Ethyl Benzene	0.523	0.5344	0.010	AVRG	2.2
1,1,1,2-Tetrachloroethane	0.371	0.3787	0.010	AVRG	2.1
m,p-xylene	0.634	0.6630	0.010	AVRG	4.6
o-Xylene	0.654	0.6723	0.010	AVRG	2.8
Styrene	0.922	1.0120	0.010	AVRG	9.8
Bromoform	0.248	0.2489	0.100	AVRG	0.4
1,1,2,2-Tetrachloroethane	0.438	0.4223	0.300	AVRG	-3.6
1,2,3-Trichloropropane	0.141	0.1338	0.010	AVRG	-5.1
Trans-1,4-Dichloro 2-Butene	10.000	10.917	0.010	2ORDR	9.2
N-Propyl Benzene	3.006	3.0988	0.010	AVRG	3.1
Bromobenzene	0.655	0.6400	0.010	AVRG	-2.3
Isopropyl Benzene	2.670	2.8023	0.010	AVRG	5.0
2-Chloro Toluene	2.167	2.2032	0.010	AVRG	1.7
4-Chloro Toluene	1.934	1.9815	0.010	AVRG	2.4
T-Butyl Benzene	2.008	2.1493	0.010	AVRG	7.0
1,3,5-Trimethyl Benzene	2.310	2.4504	0.010	AVRG	6.1
1,2,4-Trimethylbenzene	2.302	2.4751	0.010	AVRG	7.5
S-Butyl Benzene	2.922	3.0937	0.010	AVRG	5.9
4-Isopropyl Toluene	2.451	2.6192	0.010	AVRG	6.9
1,3-Dichlorobenzene	1.390	1.3750	0.010	AVRG	-1.1
1,4-Dichlorobenzene	1.429	1.3972	0.010	AVRG	-2.2
N-Butyl Benzene	2.183	2.3184	0.010	AVRG	6.2
1,2-Dichlorobenzene	1.310	1.2680	0.010	AVRG	-3.2
1,2-Dibromo 3-Chloropropane	0.069	0.0661	0.010	AVRG	-4.2
1,2,4-Trichlorobenzene	0.855	0.8375	0.010	AVRG	-2.0
Hexachloro 1,3-Butadiene	0.442	0.4342	0.010	AVRG	-1.8
Naphthalene	1.287	1.1906	0.010	AVRG	-7.5
1,2,3-Trichlorobenzene	0.656	0.6095	0.010	AVRG	-7.1
Dichlorodifluoromethane	0.544	0.5422	0.010	AVRG	-0.3
Methyl tert butyl ether	1.478	1.3944	0.010	AVRG	-5.6

<- 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: UC41 — Project: FRP SHORELINE

Instrument ID: NT2 — Cont. Calib. Date: 12/28/11

Init. Calib. Date: 12/27/11 — Cont. Calib. Time: 1145

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.497	0.4970	0.010	AVRG	0.0
d8-Toluene	1.165	1.1669	0.010	AVRG	0.2
4-Bromofluorobenzene	0.521	0.5169	0.010	AVRG	-0.8
d4-1,2-Dichlorobenzene	0.893	0.8906	0.010	AVRG	-0.3
Dibromofluoromethane	0.509	0.5005	0.010	AVRG	-1.7

<- 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: UC41 — Project: FRP SHORELINE

Ical Midpoint ID: 1001227 — Ical Date: 12/27/11

Instrument ID: NT2 — Project Run Date: 12/28/11

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	133314	5.45	190332	5.85	176686	7.92
	UPPER LIMIT	266628	5.95	380664	6.35	353372	8.42
	LOWER LIMIT	66657	4.95	95166	5.35	88343	7.42
	Sample ID						
01	LCS1227	137735	5.45	202463	5.84	176566	7.92
02	LCS1227	146697	5.45	223766	5.85	203446	7.92
03	MB1227	140498	5.45	215528	5.85	199226	7.92
04	RP122211-04	121434	5.45	185210	5.85	176841	7.92
05	RP122211-05	124311	5.45	191323	5.85	182225	7.92
06	TB-122211	130768	5.45	198690	5.85	188819	7.92
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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: UC41 — Project: FRP SHORELINE

Ical Midpoint ID: 1001227 — Ical Date: 12/27/11

Instrument ID: NT2 — Project Run Date: 12/28/11

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	126048	9.62				
	UPPER LIMIT	252096	10.12				
	LOWER LIMIT	63024	9.12				
	Sample ID						
01	LCS1227	122815	9.62				
02	LCS1227	133606	9.62				
03	MB1227	137770	9.62				
04	RP122211-04	123905	9.62				
05	RP122211-05	124328	9.62				
06	TB-122211	126593	9.62				
07							
08							
09							
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18							
19							
20							
21							
22							

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

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

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: UC41 — Project: FRP SHORELINE

Ical Midpoint ID: 1001227 — Ical Date: 12/27/11

Instrument ID: NT2 — Project Run Date: 12/28/11

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	133314	5.45	190332	5.85	176686	7.92
	UPPER LIMIT	266628	5.95	380664	6.35	353372	8.42
	LOWER LIMIT	66657	4.95	95166	5.35	88343	7.42
	Sample ID						
01	LCS1228	132278	5.45	201765	5.85	192959	7.92
02	LCS1228	127878	5.45	198401	5.84	188600	7.92
03	MB1228	117994	5.45	181412	5.85	175129	7.92
04	RP122211-01	121308	5.45	180746	5.85	172576	7.92
05	RP122211-02	121435	5.45	185377	5.85	180888	7.92
06	RP122211-03	123983	5.45	192275	5.85	184627	7.92
07	RP122311-01	112178	5.45	167782	5.84	154194	7.92
08	RP122311-02	109008	5.45	162020	5.84	149586	7.92
09	RP122311-03	115446	5.45	178882	5.84	168863	7.92
10	RP122311-04	115363	5.45	182194	5.84	169320	7.92
11	RP122311-05	107009	5.45	164261	5.84	151257	7.92
12	TB-122311	103318	5.45	151945	5.84	141392	7.92
13							
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19							
20							
21							
22							

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

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

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: UC41 — Project: FRP SHORELINE

Ical Midpoint ID: 1001227 — Ical Date: 12/27/11

Instrument ID: NT2 — Project Run Date: 12/28/11

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	126048	9.62				
	UPPER LIMIT	252096	10.12				
	LOWER LIMIT	63024	9.12				
	Sample ID						
01	LCS1228	130107	9.62				
02	LCS1228	129010	9.62				
03	MB1228	124386	9.62				
04	RP122211-01	123099	9.62				
05	RP122211-02	124970	9.62				
06	RP122211-03	124444	9.62				
07	RP122311-01	112086	9.62				
08	RP122311-02	110915	9.62				
09	RP122311-03	114232	9.62				
10	RP122311-04	113625	9.62				
11	RP122311-05	109161	9.62				
12	TB-122311	105166	9.62				
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.

Metals Analysis
Report and Summary QC Forms

ARI Job ID: UC41, UC49

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: UC41

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
RP122211-01	UC41A	11-29391	
RP122211-01D	UC41ADUP	11-29391	
RP122211-01S	UC41ASPK	11-29391	
RP122211-02	UC41B	11-29392	
PBW	UC41MB1	11-29392	
LCSW	UC41MB1SPK	11-29392	
RP122211-03	UC41C	11-29393	
RP122211-04	UC41D	11-29394	
RP122211-05	UC41E	11-29395	
RP122311-01	UC49A	11-29412	
RP122311-02	UC49B	11-29413	
RP122311-03	UC49C	11-29414	
RP122311-04	UC49D	11-29415	
RP122311-05	UC49E	11-29416	

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: 1/6/12 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RP122211-01
SAMPLE

Lab Sample ID: UC41A
LIMS ID: 11-29391
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
3010A	01/03/12	6010B	01/05/12	**7429-90-5**	**Aluminum**	50	**480**	
200.8	01/03/12	200.8	01/04/12	**7440-38-2**	**Arsenic**	0.5	**4.4**	
3010A	01/03/12	6010B	01/05/12	7440-43-9	Cadmium	2	2	U
3010A	01/03/12	6010B	01/05/12	**7440-47-3**	**Chromium**	5	**25**	
3010A	01/03/12	6010B	01/05/12	**7440-50-8**	**Copper**	2	**6**	
200.8	01/03/12	200.8	01/04/12	**7439-92-1**	**Lead**	0.1	**1.1**	
7470A	01/03/12	7470A	01/04/12	7439-97-6	Mercury	0.1	0.1	U
3010A	01/03/12	6010B	01/05/12	7440-02-0	Nickel	10	10	U
3010A	01/03/12	6010B	01/05/12	7782-49-2	Selenium	50	50	U
3010A	01/03/12	6010B	01/05/12	7440-28-0	Thallium	50	50	U
3010A	01/03/12	6010B	01/05/12	**7440-62-2**	**Vanadium**	3	**129**	
3010A	01/03/12	6010B	01/05/12	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RP122211-01
DUPLICATE

Lab Sample ID: UC41A
LIMS ID: 11-29391
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Aluminum	6010B	480	480	0.0%	+/- 20%	
Arsenic	200.8	4.4	4.4	0.0%	+/- 20%	
Cadmium	6010B	2 U	2 U	0.0%	+/- 2	L
Chromium	6010B	25	23	8.3%	+/- 5	L
Copper	6010B	6	6	0.0%	+/- 2	L
Lead	200.8	1.1	1.1	0.0%	+/- 20%	
Mercury	7470A	0.1 U	0.1 U	0.0%	+/- 0.1	L
Nickel	6010B	10 U	10 U	0.0%	+/- 10	L
Selenium	6010B	50 U	50 U	0.0%	+/- 50	L
Thallium	6010B	50 U	50 U	0.0%	+/- 50	L
Vanadium	6010B	129	127	1.6%	+/- 20%	
Zinc	6010B	10 U	10 U	0.0%	+/- 10	L

Reported in µg/L

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RP122211-01
MATRIX SPIKE

Lab Sample ID: UC41A
LIMS ID: 11-29391
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Aluminum	6010B	483	2,580	2,000	105%	
Arsenic	200.8	4.42	30.5	25.0	104%	
Cadmium	6010B	2.00 U	570	500	114%	
Chromium	6010B	24.6	541	500	103%	
Copper	6010B	6.03	555	500	110%	
Lead	200.8	1.08	24.8	25.0	94.9%	
Mercury	7470A	0.100 U	1.03	1.00	103%	
Nickel	6010B	10.0 U	483	500	96.6%	
Selenium	6010B	50.0 U	2,190	2,000	110%	
Thallium	6010B	50.0 U	1,830	2,000	91.5%	
Vanadium	6010B	129	665	500	107%	
Zinc	6010B	10.0 U	492	500	98.4%	

Reported in µg/L

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

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RP122211-02
SAMPLE

Lab Sample ID: UC41B
LIMS ID: 11-29392
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
3010A	01/03/12	6010B	01/05/12	**7429-90-5**	**Aluminum**	50	**450**	
200.8	01/03/12	200.8	01/04/12	**7440-38-2**	**Arsenic**	0.5	**4.4**	
3010A	01/03/12	6010B	01/05/12	7440-43-9	Cadmium	2	2	U
3010A	01/03/12	6010B	01/05/12	**7440-47-3**	**Chromium**	5	**30**	
3010A	01/03/12	6010B	01/05/12	**7440-50-8**	**Copper**	2	**7**	
200.8	01/03/12	200.8	01/04/12	**7439-92-1**	**Lead**	0.1	**0.8**	
7470A	01/03/12	7470A	01/04/12	7439-97-6	Mercury	0.1	0.1	U
3010A	01/03/12	6010B	01/05/12	7440-02-0	Nickel	10	10	U
3010A	01/03/12	6010B	01/05/12	7782-49-2	Selenium	50	50	U
3010A	01/03/12	6010B	01/05/12	7440-28-0	Thallium	50	50	U
3010A	01/03/12	6010B	01/05/12	**7440-62-2**	**Vanadium**	3	**178**	
3010A	01/03/12	6010B	01/05/12	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RP122211-03
SAMPLE

Lab Sample ID: UC41C
LIMS ID: 11-29393
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
3010A	01/03/12	6010B	01/05/12	**7429-90-5**	**Aluminum**	50	**1,080**	
200.8	01/03/12	200.8	01/04/12	**7440-38-2**	**Arsenic**	0.5	**4.6**	
3010A	01/03/12	6010B	01/05/12	7440-43-9	Cadmium	2	2	U
3010A	01/03/12	6010B	01/05/12	**7440-47-3**	**Chromium**	5	**30**	
3010A	01/03/12	6010B	01/05/12	**7440-50-8**	**Copper**	2	**8**	
200.8	01/03/12	200.8	01/04/12	**7439-92-1**	**Lead**	0.1	**1.2**	
7470A	01/03/12	7470A	01/04/12	7439-97-6	Mercury	0.1	0.1	U
3010A	01/03/12	6010B	01/05/12	7440-02-0	Nickel	10	10	U
3010A	01/03/12	6010B	01/05/12	7782-49-2	Selenium	50	50	U
3010A	01/03/12	6010B	01/05/12	7440-28-0	Thallium	50	50	U
3010A	01/03/12	6010B	01/05/12	**7440-62-2**	**Vanadium**	3	**177**	
3010A	01/03/12	6010B	01/05/12	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RP122211-04
SAMPLE

Lab Sample ID: UC41D
LIMS ID: 11-29394
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
3010A	01/03/12	6010B	01/05/12	**7429-90-5**	**Aluminum**	50	**250**	
200.8	01/03/12	200.8	01/04/12	**7440-38-2**	**Arsenic**	0.5	**2.3**	
3010A	01/03/12	6010B	01/05/12	7440-43-9	Cadmium	2	2	U
3010A	01/03/12	6010B	01/05/12	7440-47-3	Chromium	5	5	U
3010A	01/03/12	6010B	01/05/12	**7440-50-8**	**Copper**	2	**2**	
200.8	01/03/12	200.8	01/04/12	**7439-92-1**	**Lead**	0.1	**0.8**	
7470A	01/03/12	7470A	01/04/12	7439-97-6	Mercury	0.1	0.1	U
3010A	01/03/12	6010B	01/05/12	7440-02-0	Nickel	10	10	U
3010A	01/03/12	6010B	01/05/12	7782-49-2	Selenium	50	50	U
3010A	01/03/12	6010B	01/05/12	7440-28-0	Thallium	50	50	U
3010A	01/03/12	6010B	01/05/12	**7440-62-2**	**Vanadium**	3	**8**	
3010A	01/03/12	6010B	01/05/12	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RP122211-05
SAMPLE

Lab Sample ID: UC41E
LIMS ID: 11-29395
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
3010A	01/03/12	6010B	01/05/12	7429-90-5	Aluminum	50	50	U
200.8	01/03/12	200.8	01/04/12	7440-38-2	Arsenic	0.2	0.2	U
3010A	01/03/12	6010B	01/05/12	7440-43-9	Cadmium	2	2	U
3010A	01/03/12	6010B	01/05/12	7440-47-3	Chromium	5	5	U
3010A	01/03/12	6010B	01/05/12	7440-50-8	Copper	2	2	U
200.8	01/03/12	200.8	01/04/12	7439-92-1	Lead	0.1	0.1	U
7470A	01/03/12	7470A	01/04/12	7439-97-6	Mercury	0.1	0.1	U
3010A	01/03/12	6010B	01/05/12	7440-02-0	Nickel	10	10	U
3010A	01/03/12	6010B	01/05/12	7782-49-2	Selenium	50	50	U
3010A	01/03/12	6010B	01/05/12	7440-28-0	Thallium	50	50	U
3010A	01/03/12	6010B	01/05/12	7440-62-2	Vanadium	3	3	U
3010A	01/03/12	6010B	01/05/12	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: UC41MB
LIMS ID: 11-29392
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
3010A	01/03/12	6010B	01/05/12	7429-90-5	Aluminum	50	50	U
200.8	01/03/12	200.8	01/04/12	7440-38-2	Arsenic	0.2	0.2	U
3010A	01/03/12	6010B	01/05/12	7440-43-9	Cadmium	2	2	U
3010A	01/03/12	6010B	01/05/12	7440-47-3	Chromium	5	5	U
3010A	01/03/12	6010B	01/05/12	7440-50-8	Copper	2	2	U
200.8	01/03/12	200.8	01/04/12	7439-92-1	Lead	0.1	0.1	U
7470A	01/03/12	7470A	01/04/12	7439-97-6	Mercury	0.1	0.1	U
3010A	01/03/12	6010B	01/05/12	7440-02-0	Nickel	10	10	U
3010A	01/03/12	6010B	01/05/12	7782-49-2	Selenium	50	50	U
3010A	01/03/12	6010B	01/05/12	7440-28-0	Thallium	50	50	U
3010A	01/03/12	6010B	01/05/12	7440-62-2	Vanadium	3	3	U
3010A	01/03/12	6010B	01/05/12	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: UC41LCS
LIMS ID: 11-29392
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC41-AMEC Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Aluminum	6010B	2070	2000	104%	
Arsenic	200.8	28.2	25.0	113%	
Cadmium	6010B	522	500	104%	
Chromium	6010B	522	500	104%	
Copper	6010B	516	500	103%	
Lead	200.8	27.6	25.0	110%	
Mercury	7470A	2.2	2.0	110%	
Nickel	6010B	490	500	98.0%	
Selenium	6010B	2030	2000	102%	
Thallium	6010B	2020	2000	101%	
Vanadium	6010B	521	500	104%	
Zinc	6010B	500	500	100%	

Reported in µg/L

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RP122311-01
SAMPLE

Lab Sample ID: UC49A
LIMS ID: 11-29412
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
3010A	01/03/12	6010B	01/05/12	**7429-90-5**	**Aluminum**	50	**1,630**	
200.8	01/03/12	200.8	01/05/12	**7440-38-2**	**Arsenic**	1	**2**	
3010A	01/03/12	6010B	01/05/12	7440-43-9	Cadmium	2	2	U
3010A	01/03/12	6010B	01/05/12	7440-47-3	Chromium	5	5	U
3010A	01/03/12	6010B	01/05/12	**7440-50-8**	**Copper**	2	**5**	
200.8	01/03/12	200.8	01/04/12	**7439-92-1**	**Lead**	0.1	**2.3**	
7470A	01/03/12	7470A	01/04/12	7439-97-6	Mercury	0.1	0.1	U
3010A	01/03/12	6010B	01/05/12	7440-02-0	Nickel	10	10	U
3010A	01/03/12	6010B	01/05/12	7782-49-2	Selenium	50	50	U
3010A	01/03/12	6010B	01/05/12	7440-28-0	Thallium	50	50	U
3010A	01/03/12	6010B	01/05/12	**7440-62-2**	**Vanadium**	3	**10**	
3010A	01/03/12	6010B	01/05/12	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RP122311-02
SAMPLE

Lab Sample ID: UC49B
LIMS ID: 11-29413
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
3010A	01/03/12	6010B	01/05/12	**7429-90-5**	**Aluminum**	50	**250**	
200.8	01/03/12	200.8	01/05/12	**7440-38-2**	**Arsenic**	1	**2**	
3010A	01/03/12	6010B	01/05/12	7440-43-9	Cadmium	2	2	U
3010A	01/03/12	6010B	01/05/12	7440-47-3	Chromium	5	5	U
3010A	01/03/12	6010B	01/05/12	7440-50-8	Copper	2	2	U
200.8	01/03/12	200.8	01/04/12	**7439-92-1**	**Lead**	0.1	**0.4**	
7470A	01/03/12	7470A	01/04/12	7439-97-6	Mercury	0.1	0.1	U
3010A	01/03/12	6010B	01/05/12	7440-02-0	Nickel	10	10	U
3010A	01/03/12	6010B	01/05/12	7782-49-2	Selenium	50	50	U
3010A	01/03/12	6010B	01/05/12	7440-28-0	Thallium	50	50	U
3010A	01/03/12	6010B	01/05/12	**7440-62-2**	**Vanadium**	3	**5**	
3010A	01/03/12	6010B	01/05/12	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RP122311-03
SAMPLE

Lab Sample ID: UC49C
LIMS ID: 11-29414
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
3010A	01/03/12	6010B	01/05/12	**7429-90-5**	**Aluminum**	50	**1,460**	
200.8	01/03/12	200.8	01/05/12	**7440-38-2**	**Arsenic**	1	**2**	
3010A	01/03/12	6010B	01/05/12	7440-43-9	Cadmium	2	2	U
3010A	01/03/12	6010B	01/05/12	7440-47-3	Chromium	5	5	U
3010A	01/03/12	6010B	01/05/12	**7440-50-8**	**Copper**	2	**5**	
200.8	01/03/12	200.8	01/04/12	**7439-92-1**	**Lead**	0.1	**3.0**	
7470A	01/03/12	7470A	01/04/12	7439-97-6	Mercury	0.1	0.1	U
3010A	01/03/12	6010B	01/05/12	7440-02-0	Nickel	10	10	U
3010A	01/03/12	6010B	01/05/12	7782-49-2	Selenium	50	50	U
3010A	01/03/12	6010B	01/05/12	7440-28-0	Thallium	50	50	U
3010A	01/03/12	6010B	01/05/12	**7440-62-2**	**Vanadium**	3	**12**	
3010A	01/03/12	6010B	01/05/12	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RP122311-04
SAMPLE

Lab Sample ID: UC49D
LIMS ID: 11-29415
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
3010A	01/03/12	6010B	01/05/12	7429-90-5	Aluminum	50	50	U
200.8	01/03/12	200.8	01/05/12	**7440-38-2**	**Arsenic**	1	**4**	
3010A	01/03/12	6010B	01/05/12	7440-43-9	Cadmium	2	2	U
3010A	01/03/12	6010B	01/05/12	7440-47-3	Chromium	5	5	U
3010A	01/03/12	6010B	01/05/12	7440-50-8	Copper	2	2	U
200.8	01/03/12	200.8	01/04/12	**7439-92-1**	**Lead**	0.1	**0.1**	
7470A	01/03/12	7470A	01/04/12	7439-97-6	Mercury	0.1	0.1	U
3010A	01/03/12	6010B	01/05/12	7440-02-0	Nickel	10	10	U
3010A	01/03/12	6010B	01/05/12	7782-49-2	Selenium	50	50	U
3010A	01/03/12	6010B	01/05/12	7440-28-0	Thallium	50	50	U
3010A	01/03/12	6010B	01/05/12	**7440-62-2**	**Vanadium**	3	**6**	
3010A	01/03/12	6010B	01/05/12	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RP122311-05
SAMPLE

Lab Sample ID: UC49E
LIMS ID: 11-29416
Matrix: Water
Data Release Authorized:
Reported: 01/06/12

QC Report No: UC49-Amec Geomatrix
Project: FRP Shoreline Investigation PoreH2O
8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
3010A	01/03/12	6010B	01/05/12	7429-90-5	Aluminum	50	50	U
200.8	01/03/12	200.8	01/04/12	7440-38-2	Arsenic	0.2	0.2	U
3010A	01/03/12	6010B	01/05/12	7440-43-9	Cadmium	2	2	U
3010A	01/03/12	6010B	01/05/12	7440-47-3	Chromium	5	5	U
3010A	01/03/12	6010B	01/05/12	7440-50-8	Copper	2	2	U
200.8	01/03/12	200.8	01/04/12	7439-92-1	Lead	0.1	0.1	U
7470A	01/03/12	7470A	01/04/12	7439-97-6	Mercury	0.1	0.1	U
3010A	01/03/12	6010B	01/05/12	7440-02-0	Nickel	10	10	U
3010A	01/03/12	6010B	01/05/12	7782-49-2	Selenium	50	50	U
3010A	01/03/12	6010B	01/05/12	7440-28-0	Thallium	50	50	U
3010A	01/03/12	6010B	01/05/12	7440-62-2	Vanadium	3	3	U
3010A	01/03/12	6010B	01/05/12	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS: ug/L

SDG: UC41

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Aluminum	AL	ICP	IP010571	2000.0	1981.58	99.1	2000.0	1968.95	98.4	1944.79	97.2	1945.39	97.3	1955.08	97.8		
Arsenic	AS	PMS	MS010481	50.0	51.38	102.8	50.0	49.94	99.9	49.50	99.0	49.79	99.6	50.09	100.2	49.80	99.6
Cadmium	CD	ICP	IP010571	1000.0	1066.90	106.7	1000.0	1046.72	104.7	1040.05	104.0	1039.88	104.0	1046.50	104.7		
Chromium	CR	ICP	IP010571	1000.0	1029.25	102.9	1000.0	1022.01	102.2	1015.31	101.5	1016.85	101.7	1013.58	101.4		
Copper	CU	ICP	IP010571	1000.0	1019.83	102.0	1000.0	1009.06	100.9	1001.83	100.2	1002.39	100.2	1004.87	100.5		
Lead	PB	PMS	MS010481	50.0	51.13	102.3	50.0	50.35	100.7	50.71	101.4	50.27	100.5	49.67	99.3	49.22	98.4
Mercury	HG	CVA	HG010402	8.0	7.96	99.5	4.0	4.18	104.5	4.13	103.3	4.18	104.5				
Nickel	NI	ICP	IP010571	1000.0	994.46	99.4	1000.0	974.91	97.5	962.87	96.3	962.81	96.3	958.88	95.9		
Selenium	SE	ICP	IP010571	2000.0	2000.00	100.0	2000.0	1931.45	96.6	1940.30	97.0	1934.82	96.7	1933.48	96.7		
Thallium	TL	ICP	IP010571	2000.0	1967.39	98.4	2000.0	1902.42	95.1	1897.44	94.9	1898.06	94.9	1901.05	95.1		
Vanadium	V	ICP	IP010571	1000.0	1017.45	101.7	1000.0	1005.83	100.6	1001.51	100.2	1001.22	100.1	1003.06	100.3		
Zinc	ZN	ICP	IP010571	1000.0	991.31	99.1	1000.0	977.32	97.7	979.64	98.0	976.53	97.7	972.67	97.3		

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

UC41.00102

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: UC41

UNITS:ug/L

ANALYTE	EL	M	RUN	CCVTV	CCV6	%R	CCV7	%R	CCV8	%R	CCV9	%R	CCV10	%R	CCV11	%R
Aluminum	AL	ICP	IP010571	2000.0												
Arsenic	AS	PMS	MS010481	50.0	50.26	100.5	50.28	100.6								
Cadmium	CD	ICP	IP010571	1000.0												
Chromium	CR	ICP	IP010571	1000.0												
Copper	CU	ICP	IP010571	1000.0												
Lead	PB	PMS	MS010481	50.0	49.60	99.2	47.03	94.1								
Mercury	HG	CVA	HG010402	4.0												
Nickel	NI	ICP	IP010571	1000.0												
Selenium	SE	ICP	IP010571	2000.0												
Thallium	TL	ICP	IP010571	2000.0												
Vanadium	V	ICP	IP010571	1000.0												
Zinc	ZN	ICP	IP010571	1000.0												

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

UC41 : 00103

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS: ug/L

SDG: UC41

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Arsenic	AS	PMS	MS010581	50.0	50.59	101.2	50.0	50.03	100.1	49.47	98.9	49.84	99.7	50.12	100.2	49.74	99.5

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

UC41:00104

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS: ug/L

SDG: UC41

ANALYTE	EL	M	RUN	CCVTV	CCV6	%R	CCV7	%R	CCV8	%R	CCV9	%R	CCV10	%R	CCV11	%R
Arsenic	AS	PMS	MS010581	50.0	49.91	99.8	50.21	100.4	50.12	100.2						

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

FORM II (1)

UC41 : 00105

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS: ug/L

SDG: UC41

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	IP010571	50.0	59.25	**118.5**	63.08	**126.2**								
Arsenic	AS	PMS	MS010481	0.2	0.22	**110.0**										
Cadmium	CD	ICP	IP010571	2.0	2.08	**104.0**	2.15	**107.5**								
Chromium	CR	ICP	IP010571	5.0	5.43	**108.6**	5.57	**111.4**								
Copper	CU	ICP	IP010571	2.0	2.19	**109.5**	2.37	**118.5**								
Lead	PB	PMS	MS010481	0.1	0.10	**100.0**										
Mercury	HG	CVA	HG010402	0.1	0.09	**90.0**										
Nickel	NI	ICP	IP010571	10.0	9.88	**98.8**	9.79	**97.9**								
Selenium	SE	ICP	IP010571	50.0	57.39	**114.8**	55.57	**111.1**								
Thallium	TL	ICP	IP010571	50.0	50.06	**100.1**	47.48	**95.0**								
Vanadium	V	ICP	IP010571	3.0	2.81	**93.7**	2.81	**93.7**								
Zinc	ZN	ICP	IP010571	10.0	10.75	**107.5**	10.76	**107.6**								

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

UC41:00106

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: UC41

UNITS: ug/L

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
Arsenic	AS	PMS	MS010581	0.2	0.20	100.0										

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

FORM II (2)

UC41.00187

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS: ug/L

SDG: UC41

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Aluminum	AL	ICP	IP010571	200.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U		
Arsenic	AS	PMS	MS010481	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	IP010571	5.0	2.0	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U		
Chromium	CR	ICP	IP010571	10.0	5.0	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U		
Copper	CU	ICP	IP010571	25.0	2.0	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U		
Lead	PB	PMS	MS010481	3.0	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Mercury	HG	CVA	HG010402	0.2	0.1	0.1	U	0.1	U	0.1	U	0.1	U				
Nickel	NI	ICP	IP010571	40.0	10.0	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U		
Selenium	SE	ICP	IP010571	5.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U		
Thallium	TL	ICP	IP010571	10.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U		
Vanadium	V	ICP	IP010571	50.0	3.0	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U		
Zinc	ZN	ICP	IP010571	20.0	10.0	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U		

UC41.00108

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS: ug/L

SDG: UC41

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB6	C	CCB7	C	CCB8	C	CCB9	C	CCB10	C	CCB11	C
Aluminum	AL	ICP	IP010571	200.0	50.0												
Arsenic	AS	PMS	MS010481	10.0	0.2	0.2	U	0.2	U								
Cadmium	CD	ICP	IP010571	5.0	2.0												
Chromium	CR	ICP	IP010571	10.0	5.0												
Copper	CU	ICP	IP010571	25.0	2.0												
Lead	PB	PMS	MS010481	3.0	0.1	0.1	U	0.1	U								
Mercury	HG	CVA	HG010402	0.2	0.1												
Nickel	NI	ICP	IP010571	40.0	10.0												
Selenium	SE	ICP	IP010571	5.0	50.0												
Thallium	TL	ICP	IP010571	10.0	50.0												
Vanadium	V	ICP	IP010571	50.0	3.0												
Zinc	ZN	ICP	IP010571	20.0	10.0												

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS:ug/L

SDG: UC41

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Arsenic	AS	PMS	MS010581	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U

UC41 00110

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS: ug/L

SDG: UC41

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB6	C	CCB7	C	CCB8	C	CCB9	C	CCB10	C	CCB11	C
Arsenic	AS	PMS	MS010581	10.0	0.2	0.2	U	0.2	U	0.2	U						

UC41.00111

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: UC41

ICS SOURCE: I.V.

RUNID: IP010571

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	195587.1	194787.1	**97.4**	193760.8	193957.5	**97.0**			
Antimony		1000	-4.5	958.2	**95.8**	-5.6	956.0	**95.6**			
Arsenic		1000	3.8	994.2	**99.4**	2.6	983.2	**98.3**			
Barium		1000	0.9	995.3	**99.5**	0.2	992.6	**99.3**			
Beryllium		1000	0.0	967.6	**96.8**	0.0	947.8	**94.8**			
Boron			-13.5	-11.2		-14.9	-14.5				
Cadmium		1000	1.4	1028.0	**102.8**	1.3	1031.0	**103.1**			
Calcium	100000	100000	99445.3	99957.6	**100.0**	98995.5	99440.1	**99.4**			
Chromium		1000	0.0	1006.4	**100.6**	-0.1	1012.3	**101.2**			
Cobalt		1000	1.5	953.5	**95.4**	1.4	955.2	**95.5**			
Copper		1000	-0.2	1040.9	**104.1**	0.0	1042.0	**104.2**			
Iron	200000	200000	192769.5	193644.6	**96.8**	191309.1	191640.8	**95.8**			
Lead		1000	-2.6	943.3	**94.3**	-3.1	942.8	**94.3**			
Magnesium	100000	100000	100280.0	97215.6	**97.2**	100548.0	97112.0	**97.1**			
Manganese		1000	0.2	942.5	**94.3**	0.1	928.5	**92.9**			
Molybdenum			6.0	5.8		5.7	5.8				
Nickel		1000	-0.1	919.1	**91.9**	-0.6	912.2	**91.2**			
Potassium			40.9	225.0		68.7	241.1				
Selenium		1000	12.4	995.6	**99.6**	13.9	985.0	**98.5**			
Silicon			-13.2	-11.6		1.7	-9.1				
Silver		1000	-0.6	1029.2	**102.9**	-0.7	1023.1	**102.3**			
Sodium			-9.8	-13.3		128.7	124.4				
Strontium			9.9	10.0		9.9	9.9				
Thallium		1000	5.9	931.5	**93.2**	4.6	930.1	**93.0**			
Tin			-16.4	-17.1		-17.2	-17.9				
Titanium			2.0	2.1		1.8	1.9				
Vanadium		1000	2.4	1006.6	**100.7**	1.9	1009.7	**101.0**			
Zinc		1000	-2.8	921.4	**92.1**	-3.0	923.4	**92.3**			

UC41.00212

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: UC41

ICS SOURCE: I.V.

RUNID: MS010481

INSTRUMENT ID: PE ELAN 6000

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Antimony			0.0	0.1							
Arsenic		20	0.0	20.1	**100.5**						
Cadmium		20	0.0	20.4	**102.0**						
Chromium		20	0.8	21.0	**105.0**						
Cobalt		20	0.0	20.0	**100.0**						
Copper		20	0.5	20.7	**103.5**						
Lead			0.1	0.1							
Manganese		20	0.1	20.2	**101.0**						
Molybdenum	400	400	387.7	384.6	**96.2**						
Nickel		20	0.6	20.0	**100.0**						
Selenium			0.0	-0.1							
Silver		20	0.0	20.2	**101.0**						
Thallium			0.3	0.3							
Vanadium			0.0	-0.3							
Zinc		20	1.0	20.8	**104.0**						

UC41:00113

ICP Interference
Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: UC41

ICS SOURCE: I.V.

RUNID: MS010581

INSTRUMENT ID: PE ELAN 6000

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Antimony			0.0	0.1							
Arsenic		20	0.0	20.0	**100.0**						
Cadmium		20	0.0	20.7	**103.5**						
Chromium		20	0.7	20.7	**103.5**						
Cobalt		20	0.0	19.5	**97.5**						
Copper		20	0.5	20.0	**100.0**						
Lead			0.1	0.1							
Manganese		20	0.1	20.3	**101.5**						
Molybdenum	400	400	385.1	386.4	**96.6**						
Nickel		20	0.6	19.7	**98.5**						
Silver		20	0.0	20.2	**101.0**						
Thallium			0.1	0.1							
Vanadium			0.1	-0.2							
Zinc		20	1.0	20.1	**100.5**						

UC41:00114

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

ANALYSIS METHOD: ICP

SDG: UC41

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	MATRIX	RUNID	INITIAL SAMPLE RESULT (I)	C	SERIAL DILUTION RESULT (S)	C	% DIFFER-ENCE	Q
Aluminum	RP122211-01L	UC41A-L	Water	IP010571	482.62		499.80	B	3.6	
Cadmium	RP122211-01L	UC41A-L	Water	IP010571	0.22	U	10.00	U		
Chromium	RP122211-01L	UC41A-L	Water	IP010571	24.59		25.00	U	100.0	
Copper	RP122211-01L	UC41A-L	Water	IP010571	6.03	B	10.00	U	100.0	
Nickel	RP122211-01L	UC41A-L	Water	IP010571	4.80	U	50.00	U		
Selenium	RP122211-01L	UC41A-L	Water	IP010571	9.50	U	250.00	U		
Thallium	RP122211-01L	UC41A-L	Water	IP010571	1.83	U	250.00	U		
Vanadium	RP122211-01L	UC41A-L	Water	IP010571	128.95		128.45	B	0.4	
Zinc	RP122211-01L	UC41A-L	Water	IP010571	3.86	U	50.00	U		

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

ANALYSIS METHOD: PMS

SDG: UC41

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	MATRIX	RUNID	INITIAL SAMPLE RESULT (I)	C	SERIAL DILUTION RESULT (S)	C	% DIFFER-ENCE	Q
Arsenic	RP122211-01L	UC41A-L	Water	MS010481	4.42	B	6.95	B	10.1	
Lead	RP122211-01L	UC41A-L	Water	MS010481	1.08	B	1.10	B	1.9	

IDLs and ICP Linear Ranges

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: UC41 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	PMS	PE ELAN 6000 MS	0.00		3	0.1	4/1/2011		
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: 11/29/2011

SDG: UC41

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	0.3891270	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	10.6149000	0.0000000	0.1208350
Arsenic	188.98	0.0000000	0.0000000	0.0000000	0.0000000	0.0339516	0.0000000	-0.8345790	1.1215100	0.0000000	0.0000000
Barium	233.53	0.0000000	0.0000000	0.0000000	0.0000000	-0.0076716	0.0000000	-0.1892080	0.0000000	0.0000000	0.0522067
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	0.0242504	0.0000000	0.0000000	0.0000000	0.0000000	-0.0377814
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	-0.0584929
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	-0.2018030	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-2.3072100	1.2452600	0.0540270
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-1.6380600	-1.2519300	0.0000000	0.5652870
Manganese	257.61	0.0071394	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.0051324
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0123608	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	-0.2053280	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.3514040	0.0000000	0.0000000	-0.1233420
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	0.0108199	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	1.7836600	0.3510820	0.0000000	-0.1141760
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	0.0000000	0.0000000	0.0387268	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	0.0730907
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0258303	0.0000000	0.0000000	-0.1475900	0.0000000	0.0000000

UC41.00118

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

IEC DATE: 11/29/2011

SDG: UC41

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	0.0405628	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	0.0057432	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	0.0041261	0.0000000	0.0000000	0.0000000	-0.2175850	0.0000000	0.0000000	0.0000000	-0.0271775	0.0000000
Molybdenum	202.03	0.0107429	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	0.0736777	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	288.16	0.0000000	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	42.4230000	0.0000000	0.0000000	18.1570000
Thallium	190.80	0.0000000	-1.4179000	1.9562000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	1.2892100	0.0000000
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.5848020	-0.3044710	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	0.9873960	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	-0.1398510	-0.6804250	0.0000000	0.0000000	0.0000000	0.6004670	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.2377960	0.0000000	-0.0708227	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ANALYSIS METHOD: ICP

PROJECT: FRP Shoreline Invest

ARI PREP CODE: TWC

SDG: UC41

PREPDATE: 1/3/2012

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
RP122211-01	UC41A	0.000	50.0	50.0
RP122211-01D	UC41ADUP	0.000	50.0	50.0
RP122211-01S	UC41ASPK	0.000	50.0	50.0
RP122211-02	UC41B	0.000	50.0	50.0
RP122211-03	UC41C	0.000	50.0	50.0
RP122211-04	UC41D	0.000	50.0	50.0
RP122211-05	UC41E	0.000	50.0	50.0
PBW	UC41MB1	0.000	50.0	50.0
LCSW	UC41MB1SPK	0.000	50.0	50.0
RP122311-01	UC49A	0.000	50.0	50.0
RP122311-02	UC49B	0.000	50.0	50.0
RP122311-03	UC49C	0.000	50.0	50.0
RP122311-04	UC49D	0.000	50.0	50.0
RP122311-05	UC49E	0.000	50.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: UC41

ANALYSIS METHOD: PMS

ARI PREP CODE: REN

PREPDATE: 1/3/2012

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
RP122211-01	UC41A	0.000	50.0	25.0
RP122211-01D	UC41ADUP	0.000	50.0	25.0
RP122211-01S	UC41ASPK	0.000	50.0	25.0
RP122211-02	UC41B	0.000	50.0	25.0
RP122211-03	UC41C	0.000	50.0	25.0
RP122211-04	UC41D	0.000	50.0	25.0
RP122211-05	UC41E	0.000	50.0	25.0
PBW	UC41MB1	0.000	50.0	25.0
LCSW	UC41MB1SPK	0.000	50.0	25.0
RP122311-01	UC49A	0.000	50.0	25.0
RP122311-02	UC49B	0.000	50.0	25.0
RP122311-03	UC49C	0.000	50.0	25.0
RP122311-04	UC49D	0.000	50.0	25.0
RP122311-05	UC49E	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: UC41

PREPDATE: 1/3/2012

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
RP122211-01	UC41A	0.000	20.0	20.0
RP122211-01D	UC41ADUP	0.000	20.0	20.0
RP122211-01S	UC41ASPK	0.000	20.0	20.0
RP122211-02	UC41B	0.000	20.0	20.0
RP122211-03	UC41C	0.000	20.0	20.0
RP122211-04	UC41D	0.000	20.0	20.0
RP122211-05	UC41E	0.000	20.0	20.0
PBW	UC41MB1	0.000	20.0	20.0
LCSW	UC41MB1SPK	0.000	20.0	20.0
RP122311-01	UC49A	0.000	20.0	20.0
RP122311-02	UC49B	0.000	20.0	20.0
RP122311-03	UC49C	0.000	20.0	20.0
RP122311-04	UC49D	0.000	20.0	20.0
RP122311-05	UC49E	0.000	20.0	20.0

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: OPTIMA ICP 2 START DATE: 1/5/2012

SDG: UC41 RUNID: IP010571 METHOD: ICP END DATE: 1/5/2012

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	08345			X						X		X	X								X			X				X		X	X
S2	S2	1.00	08390									X		X	X																	X	
S3	S3	1.00	08404																				X			X				X			X
S4	S4	1.00	08432																														
S5	S5	1.00	08453			X																											
ICV	ICV	1.00	08490			X						X		X	X								X			X				X		X	X
ICB	ICB	1.00	08530			X						X		X	X								X			X				X		X	X
ZZZZZZ	ZZZZZZ	1.00	08572																														
CRI	CRII	1.00	09043			X						X		X	X								X			X				X		X	X
ICSA	ICSAI	1.00	09085			X						X		X	X								X			X				X		X	X
ICSAB	ICSABI	1.00	09130			X						X		X	X								X			X				X		X	X
CCV	CCV1	1.00	09181			X						X		X	X								X			X				X		X	X
CCB	CCB1	1.00	09221			X						X		X	X								X			X				X		X	X
PBW	UC41MB1	1.00	09262			X						X		X	X								X			X				X		X	X
ZZZZZZ	MDLCKMB	1.00	09304																														
ZZZZZZ	MDLCK1	1.00	09345																														
ZZZZZZ	MDLCK2	1.00	09390																														
ZZZZZZ	MCLCK3	1.00	09432																														
RP122211-01L	UC41A-L	5.00	09473			X						X		X	X								X			X				X		X	X
RP122211-01	UC41A	1.00	09521			X						X		X	X								X			X				X		X	X
RP122211-01D	UC41ADUP	1.00	09565			X						X		X	X								X			X				X		X	X
RP122211-01S	UC41ASPK	1.00	10014			X						X		X	X								X			X				X		X	X
LCSW	UC41MB1SPK	1.00	10061			X						X		X	X								X			X				X		X	X
CCV	CCV2	1.00	10100			X						X		X	X								X			X				X		X	X
CCB	CCB2	1.00	10141			X						X		X	X								X			X				X		X	X
RP122211-02	UC41B	1.00	10182			X						X		X	X								X			X				X		X	X
RP122211-03	UC41C	1.00	10230			X						X		X	X								X			X				X		X	X
RP122211-04	UC41D	1.00	10273			X						X		X	X								X			X				X		X	X
RP122211-05	UC41E	1.00	10321			X						X		X	X								X			X				X		X	X
RP122311-01	UC49A	1.00	10362			X						X		X	X								X			X				X		X	X
RP122311-02	UC49B	1.00	10410			X						X		X	X								X			X				X		X	X
RP122311-03	UC49C	1.00	10454			X						X		X	X								X			X				X		X	X
RP122311-04	UC49D	1.00	10502			X						X		X	X								X			X				X		X	X
RP122311-05	UC49E	1.00	10543			X						X		X	X								X			X				X		X	X
CCV	CCV3	1.00	10585			X						X		X	X								X			X				X		X	X

FORM XIV

UC41-08125

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: OPTIMA ICP 2 START DATE: 1/5/2012

SDG: UC41 RUNID: IP010571 METHOD: ICP END DATE: 1/5/2012

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	11025			X						X		X	X								X			X				X		X	X
CRI	CRIF	1.00	11070			X						X		X	X								X			X				X		X	X
ICSA	ICSAF	1.00	11112			X						X		X	X								X			X				X		X	X
ICSAB	ICSABF	1.00	11153			X						X		X	X								X			X				X		X	X
CCV	CCV4	1.00	11203			X						X		X	X								X			X				X		X	X
CCB	CCB4	1.00	11243			X						X		X	X								X			X				X		X	X

UC41 : 00121

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest | INSTRUMENT ID: PE ELAN 6000 MS | START DATE: 1/4/2012

SDG: UC41 | RUNID: MS010481 METHOD: PMS | END DATE: 1/4/2012

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	15000				X																	X									
S1	S1	1.00	15060				X																	X									
S2	S2	1.00	15120				X																	X									
S3	S3	1.00	15180				X																	X									
S4	S4	1.00	15240				X																	X									
ZZZZZZ	Rinse Sampl	1.00	15310																														
S0	S0	1.00	15390				X																	X									
ICV	MICV	1.00	15450				X																	X									
ICB	ICB	1.00	15520				X																	X									
CCV	MCCV1	1.00	15570				X																	X									
CCB	CCB1	1.00	16040				X																	X									
CRI	MCRI	1.00	16100				X																	X									
ICSA	ICSAI	1.00	16160				X																	X									
ICSAB	ICSABI	1.00	16220				X																	X									
ZZZZZZ	LR200	1.00	16280																														
ZZZZZZ	LR300	1.00	16350																														
CCV	MCCV2	1.00	16410				X																	X									
CCB	CCB2	1.00	16480				X																	X									
ZZZZZZ	UB08RMB1	2.00	16540																														
ZZZZZZ	UB08RMB1SPK	2.00	17000																														
ZZZZZZ	UB08RADUP	2.00	17060																														
ZZZZZZ	UB08RA	2.00	17120																														
ZZZZZZ	UB08RASPK	2.00	17180																														
ZZZZZZ	UB08RB	2.00	17250																														
ZZZZZZ	UB08RC	2.00	17310																														
ZZZZZZ	UB08RD	2.00	17370																														
ZZZZZZ	UB08RE	2.00	17440																														
ZZZZZZ	UC25C	10.00	17500																														
CCV	MCCV3	1.00	17560				X																	X									
CCB	CCB3	1.00	18030				X																	X									
ZZZZZZ	UC29MB1	2.00	18090																														
ZZZZZZ	UC29MB1SPK	2.00	18140																														
ZZZZZZ	UC29MB1SPD	2.00	18210																														
ZZZZZZ	UC29B	2.00	18270																														
ZZZZZZ	UC29C	2.00	18330																														

FORM XIV

UC41-00125

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: PE ELAN 6000 MS START DATE: 1/4/2012

SDG: UC41 RUNID: MS010481 METHOD: PMS END DATE: 1/4/2012

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	UC29D	2.00	18390																														
ZZZZZZ	UC29E	2.00	18460																														
ZZZZZZ	UC29F	2.00	18520																														
ZZZZZZ	UC19C	2.00	18580																														
ZZZZZZ	UC19F	2.00	19050																														
CCV	MCCV4	1.00	19110				X																	X									
CCB	CCB4	1.00	19180				X																	X									
ZZZZZZ	UC29MB2	2.00	19230																														
ZZZZZZ	UC47MB2	20.00	19290																														
ZZZZZZ	UC47MB2SPK	20.00	19350																														
ZZZZZZ	UC29MB2SPK	2.00	19410																														
ZZZZZZ	UC29MB2SPD	2.00	19470																														
ZZZZZZ	UC29G	2.00	19540																														
ZZZZZZ	UC47BDUP	20.00	20000																														
ZZZZZZ	UC47B	20.00	20060																														
ZZZZZZ	UC47BSPK	20.00	20130																														
ZZZZZZ	UC47C	20.00	20190																														
CCV	MCCV5	1.00	20250				X																	X									
CCB	CCB5	1.00	20320				X																	X									
PBW	UC41MB1	2.00	20380				X																	X									
LCSW	UC41MB1SPK	2.00	20430				X																	X									
RP122211-01L	UC41A-L	10.00	20500				X																	X									
RP122211-01	UC41A	2.00	20560				X																	X									
RP122211-01D	UC41ADUP	2.00	21020				X																	X									
RP122211-01S	UC41ASPK	2.00	21080				X																	X									
ZZZZZZ	ZZZZZZ	2.00	21150																														
RP122211-02	UC41B	2.00	21210				X																	X									
RP122211-03	UC41C	2.00	21270				X																	X									
RP122211-04	UC41D	2.00	21330				X																	X									
CCV	MCCV6	1.00	21400				X																	X									
CCB	CCB6	1.00	21460				X																	X									
ZZZZZZ	UC47MB1	2.00	21520																														
ZZZZZZ	UC47MB1SPK	2.00	21580																														
RP122211-05	UC41E	2.00	22040				X																	X									
RP122311-01	UC49A	2.00	22110																					X									

FORM XIV

UC41:00126

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest | INSTRUMENT ID: PE ELAN 6000 MS | START DATE: 1/4/2012

SDG: UC41 | RUNID: MS010481 METHOD: PMS | END DATE: 1/4/2012

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
RP122311-02	UC49B	2.00	22170																					X									
RP122311-03	UC49C	2.00	22230																					X									
RP122311-04	UC49D	2.00	22290																					X									
RP122311-05	UC49E	2.00	22360				X																	X									
ZZZZZZ	UC47A	20.00	22420																														
ZZZZZZ	UC91E	2.00	22480																														
CCV	MCCV7	1.00	22540				X																	X									
CCB	CCB7	1.00	23010				X																	X									

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest | INSTRUMENT ID: PE ELAN 6000 MS | START DATE: 1/5/2012

SDG: UC41 | RUNID: MS010581 METHOD: PMS | END DATE: 1/5/2012

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	11040				X																										
S1	S1	1.00	11100				X																										
S2	S2	1.00	11160				X																										
S3	S3	1.00	11220				X																										
S4	S4	1.00	11280				X																										
ZZZZZZ	Rinse Sampl	1.00	11350																														
S0	S0	1.00	11420				X																										
ICV	MICV	1.00	11490				X																										
ICB	ICB	1.00	11550				X																										
CCV	MCCV1	1.00	12010				X																										
CCB	CCB1	1.00	12080				X																										
CRI	MCRI	1.00	12130				X																										
ICSA	ICSAI	1.00	12190				X																										
ICSAB	ICSABI	1.00	12260				X																										
ZZZZZZ	LR200	1.00	12320																														
ZZZZZZ	ZZZZZZ	1.00	12380																														
ZZZZZZ	LR300	1.00	12470																														
CCV	MCCV2	1.00	12530				X																										
CCB	CCB2	1.00	13000				X																										
S0	S0	1.00	13070				X																										
CCV	MCCV3	1.00	13130				X																										
CCB	CCB3	1.00	13200				X																										
ZZZZZZ	UC67MB1	2.00	13260																														
ZZZZZZ	UC67MB2	2.00	13310																														
ZZZZZZ	UC67MB2SPK	2.00	13370																														
ZZZZZZ	UC67MB1SPK	2.00	13440																														
ZZZZZZ	UB08RA	2.00	13500																														
ZZZZZZ	UC19C	5.00	13560																														
ZZZZZZ	UC47A	100.00	14020																														
ZZZZZZ	UC67A	2.00	14090																														
ZZZZZZ	UC67B	2.00	14150																														
ZZZZZZ	UC67C	2.00	14210																														
CCV	MCCV4	1.00	14270				X																										
CCB	CCB4	1.00	14340				X																										
ZZZZZZ	UC78MB1	2.00	14430																														

FORM XIV

UC11.00128

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: PE ELAN 6000 MS START DATE: 1/5/2012

SDG: UC41 RUNID: MS010581 METHOD: PMS END DATE: 1/5/2012

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	UC78MB2	2.00	14490																														
ZZZZZZ	UC78MB2SPK	2.00	14550																														
ZZZZZZ	UC78MB1SPK	2.00	15010																														
ZZZZZZ	UC78ADUP	2.00	15070																														
ZZZZZZ	UC78A	2.00	15140																														
ZZZZZZ	UC78ASPK	2.00	15200																														
ZZZZZZ	UC78B	2.00	15260																														
ZZZZZZ	UC78C	2.00	15330																														
ZZZZZZ	UC67D	2.00	15390																														
CCV	MCCV5	1.00	15450				X																										
CCB	CCB5	1.00	15520				X																										
S0	S0	1.00	15580				X																										
CCV	MCCV6	1.00	16040				X																										
CCB	CCB6	1.00	16100				X																										
ZZZZZZ	UC69MB1	2.00	16160																														
ZZZZZZ	UC69MB1SPK	2.00	16220																														
ZZZZZZ	UC78DDUP	2.00	16280																														
ZZZZZZ	UC78D	2.00	16340																														
ZZZZZZ	UC78DSPK	2.00	16410																														
ZZZZZZ	UC78E	2.00	16470																														
ZZZZZZ	UC78F	2.00	16530																														
ZZZZZZ	UC69A	2.00	17000																														
ZZZZZZ	UC69B	2.00	17060																														
ZZZZZZ	UC69C	2.00	17120																														
CCV	MCCV7	1.00	17190				X																										
CCB	CCB7	1.00	17250				X																										
ZZZZZZ	UC69MB2	2.00	17310																														
ZZZZZZ	UC69MB2SPK	2.00	17370																														
ZZZZZZ	UC69D	2.00	17430																														
RP122311-01	UC49A	5.00	17500				X																										
RP122311-02	UC49B	5.00	17560				X																										
RP122311-03	UC49C	5.00	18020				X																										
RP122311-04	UC49D	5.00	18090				X																										
ZZZZZZ	UC51ADUP	20.00	18150																														
ZZZZZZ	UC51A	20.00	18210																														

FORM XIV

UC41 : 00129

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: PE ELAN 6000 MS START DATE: 1/5/2012

SDG: UC41 RUNID: MS010581 METHOD: PMS END DATE: 1/5/2012

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	UC51ASPK	20.00	18270																														
CCV	MCCV8	1.00	18340				X																										
CCB	CCB8	1.00	18400				X																										

UC41 : 00180

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: CETAC MERCURY START DATE: 1/4/2012

SDG: UC41 RUNID: HG010402 METHOD: CVA END DATE: 1/4/2012

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	14070														X																
S0.1	S0.1	1.00	14084														X																
S0.5	S0.5	1.00	14101														X																
S1	S1	1.00	14115														X																
S2	S2	1.00	14133														X																
S5	S5	1.00	14151														X																
S10	S10	1.00	14165														X																
ICV	AICV	1.00	14195														X																
ICB	ICB	1.00	14213														X																
CCV	ACCV1	1.00	14231														X																
CCB	CCB1	1.00	14245														X																
CRA	CRA	1.00	14262														X																
PBW	UC41MB1	1.00	14280														X																
LCSW	UC41MB1SPK	1.00	14293														X																
RP122211-01	UC41A	1.00	14311														X																
RP122211-01D	UC41ADUP	1.00	14325														X																
RP122211-01S	UC41ASPK	1.00	14342														X																
RP122211-02	UC41B	1.00	14360														X																
RP122211-03	UC41C	1.00	14374														X																
RP122211-04	UC41D	1.00	14392														X																
RP122211-05	UC41E	1.00	14405														X																
CCV	ACCV2	1.00	14423														X																
CCB	CCB2	1.00	14441														X																
RP122311-01	UC49A	1.00	14455														X																
RP122311-02	UC49B	1.00	14473														X																
RP122311-03	UC49C	1.00	14490														X																
RP122311-04	UC49D	1.00	14504														X																
RP122311-05	UC49E	1.00	14521														X																
CCV	ACCV3	1.00	14535														X																
CCB	CCB3	1.00	14553														X																

UC41-00131

General Chemistry Analysis
Report and Summary QC Forms

ARI Job ID: UC41, UC49

SAMPLE RESULTS-CONVENTIONALS
UC41-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 12/27/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Client ID: RP122211-01
ARI ID: 11-29391 UC41A

Analyte	Date Batch	Method	Units	RL	Sample
pH	12/23/11 122311#1	EPA 150.1	std units	0.01	7.15

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UC41-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/27/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Client ID: RP122211-02
ARI ID: 11-29392 UC41B

Analyte	Date Batch	Method	Units	RL	Sample
pH	12/23/11 122311#1	EPA 150.1	std units	0.01	7.05

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UC41-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/27/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Client ID: RP122211-03
ARI ID: 11-29393 UC41C

Analyte	Date Batch	Method	Units	RL	Sample
pH	12/23/11 122311#1	EPA 150.1	std units	0.01	6.99

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UC41-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: DMB
Reported: 12/27/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Client ID: RP122211-04
ARI ID: 11-29394 UC41D

Analyte	Date Batch	Method	Units	RL	Sample
pH	12/23/11 122311#1	EPA 150.1	std units	0.01	6.86

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UC41-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: MB
Reported: 12/27/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Client ID: RP122211-05
ARI ID: 11-29395 UC41E

Analyte	Date Batch	Method	Units	RL	Sample
pH	12/23/11 122311#1	EPA 150.1	std units	0.01	5.87

RL Analytical reporting limit
U Undetected at reported detection limit

LAB CONTROL RESULTS-CONVENTIONALS
UC41-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/27/11

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

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
pH EPA 150.1	ICVL	12/23/11	std units	6.98	7.00	0.02

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

REPLICATE RESULTS-CONVENTIONALS
UC41-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/27/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: 12/22/11
Date Received: 12/23/11

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: UC41A Client ID: RP122211-01						
pH	EPA 150.1	12/23/11	std units	7.15	7.15	0.00

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

SAMPLE RESULTS-CONVENTIONALS
UC49-Amec Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/30/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Client ID: RP122311-01
ARI ID: 11-29412 UC49A

Analyte	Date Batch	Method	Units	RL	Sample
pH	12/27/11 122711#1	EPA 150.1	std units	0.01	6.46

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UC49-Amec Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: JMB
Reported: 12/30/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Client ID: RP122311-02
ARI ID: 11-29413 UC49B

Analyte	Date Batch	Method	Units	RL	Sample
pH	12/27/11 122711#1	EPA 150.1	std units	0.01	6.54

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UC49-Amec Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/30/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Client ID: RP122311-03
ARI ID: 11-29414 UC49C

Analyte	Date Batch	Method	Units	RL	Sample
pH	12/27/11 122711#1	EPA 150.1	std units	0.01	7.21

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UC49-Amec Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/30/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Client ID: RP122311-04
ARI ID: 11-29415 UC49D

Analyte	Date Batch	Method	Units	RL	Sample
pH	12/27/11 122711#1	EPA 150.1	std units	0.01	7.13

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
UC49-Amec Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/30/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Client ID: RP122311-05
ARI ID: 11-29416 UC49E

Analyte	Date Batch	Method	Units	RL	Sample
pH	12/27/11 122711#1	EPA 150.1	std units	0.01	5.37

RL Analytical reporting limit
U Undetected at reported detection limit

LAB CONTROL RESULTS-CONVENTIONALS
UC49-Amec Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/30/11

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

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
pH EPA 150.1	ICVL	12/27/11	std units	6.99	7.00	0.01

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

REPLICATE RESULTS-CONVENTIONALS
UC49-Amec Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: MB
Reported: 12/30/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: 12/23/11
Date Received: 12/27/11

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: UC49A Client ID: RP122311-01						
pH	EPA 150.1	12/27/11	std units	6.46	6.47	0.01

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