Analytical Resources, Incorporated
Analytical Chemists and Consultants

AMEC E&E
Received
OCT 10 2011
SEATTLE ORG. 5099

October 7, 2011

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

RE: Client Project: Former Rhone Poulenc- 8769 Shoreline Investigation
ARI Job Numbers: TM07, TM08

Dear John:

Please find enclosed the final data package for samples for the project referenced above. ARI received ten water samples and one trip blank on September 13, 2011.

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

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

Sincerely,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
-For-
Kelly Bottem
Client Services Manager
206/695-6211
kellyb@arilabs.com

Enclosures

cc: file TM07, TM08

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

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Client: AMEC Geomatrix

Project: 8769 FRP 2011 Shoreline Investigation

AMEC E&E Received OCT 10 2011 SEATTLE ORG. 6009

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Signature

September-21-2011
Date

Chain of Custody Documentation

ARI Job ID: TM07, TM08

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: TM07	Turn-around Requested: STANDARD
ARI Client Company: AMEC	Phone: (206) 342-1773
Client Contact: JOHN LONG / NICK BACHER	
Client Project Name: FMP 2011 SHORELINE INVESTIGATION	
Client Project #: 87609	Samplers: TREVOR COUVIERE, DEVIN O'REILLY

Page: 1 of 1

Date: 9/13/11 | Ice Present? Y

No. of Coolers: 2 | Cooler Temps: 5.5, 3.3

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	Total Mercury 6010B	Mercury 7470A	pH 150.1	VOCs 8260C	Cations Ca, Mg, Na, K 200.8	Anions Cl, NO3, SO4 300.0	Sulfide SM 4500	Ammonia 350.1	Alkalinity SM 2320	Specific Gravity ASTM D1298
FMP-091311-001	9/13/11	0935	H2O	5	X	X	X	X						
FMP-091311-002		1035		11	X	X	X	X	X	X	X	X	X	X
FMP-091311-003		1140		11	X	X	X	X	X	X	X	X	X	X
FMP-091311-004		1310		5	X	X	X	X						
FMP-091311-005		1315		5	X	X	X	X						
FMP-091311-006		1320		5	X	X	X	X						
FMP-091311-007		1420		5	X	X	X	X						
FMP-091311-008		1445		5	X	X	X	X						
FMP-091311-009		1525		5	X	X	X	X						
~~FMP-091311-010~~ TMP BLANK		1540		~~5~~ 2	X	X	X	X						

Comments/Special Instructions
METALS INCLUDE: Al, As, Ca, Cr, Cu, Pb, Ni, Se, Th, V, Zn
H2O VOAS NOT PRESERVED

Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)	(Signature)	(Signature)	(Signature)
Printed Name: DEVIN O'REILLY	Printed Name: Jennifer Millage	Printed Name:	Printed Name:
Company: AMEC	Company: ARI	Company:	Company:
Date & Time: 9/13/11 1635	Date & Time: 9/13/11 1635	Date & Time:	Date & Time:

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

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

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: AMEC

Project Name: FRP 2011 Shoreline Investigation

COC No(s): _____ (NA)

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

Assigned ARI Job No: TM07

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) 5.5 3.3 ___ ___ ___ ___

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

Temp Gun ID#: 90877952

Cooler Accepted by: JM Date: 9/13/11 Time: 1635

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	9/12/11	

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

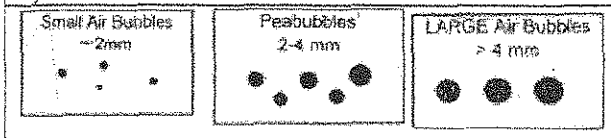
Samples Logged by: JM Date: 9/14/11 Time: 735

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:



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

PRESERVATION VERIFICATION 09/14/11

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **TM07**

PC: Kelly
VTSR: 09/13/11

Inquiry Number: NONE
Analysis Requested: 09/14/11
Contact: Long, John
Client: AMEC Geomatrix
Logged by: JM
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

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

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	AK102 <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
11-19883 **TM07A**	FRP-091311-001						TOT pass															
11-19884 **TM07B**	FRP-091311-002			pass			TOT						fail					S⁻	>12	~2 ml NaOH 6 N		9-14-11
11-19885 **TM07C**	FRP-091311-003			fail			TOT fail											NH3	<2	~1 ml H2SO4 1N		9-14-11
11-19886 **TM07D**	FRP-091311-004						TOT fail															
11-19887 **TM07E**	FRP-091311-005						TOT fail															
11-19888 **TM07F**	FRP-091311-006						TOT fail															
11-19889 **TM07G**	FRP-091311-007						TOT pass															
11-19890 **TM07H**	FRP-091311-008						TOT															
11-19891 **TM07I**	FRP-091311-009						TOT															
11-19892 **TM07J**	FRP-091311-010						TOT															
11-19894 **TM07L**	FRP-091311-002						DIS															
11-19895 **TM07M**	FRP-091311-003						DIS fail															

S2 only preserved with ZnOAC.

Checked By JM Date 9/14/11

PRESERVATION VERIFICATION 09/14/11

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **TM07**

PC: Kelly
VTSR: 09/13/11

Inquiry Number: NONE
Analysis Requested: 09/14/11
Contact: Long, John
Client: AMEC Geomatrix
Logged by: JM
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

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

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	AK102 <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
11-19883 **TM07A**	FRP-091311-001						TOT pass															
11-19884 **TM07B**	FRP-091311-002			pass			TOT						fail									
11-19885 **TM07C**	FRP-091311-003			fail			TOT fail												OK			
11-19886 **TM07D**	FRP-091311-004						TOT fail												<2	I7025	5mL	09.14.11 MJ
11-19887 **TM07E**	FRP-091311-005						TOT fail												OK			
11-19888 **TM07F**	FRP-091311-006						TOT fail												OK			
11-19889 **TM07G**	FRP-091311-007						TOT pass															
11-19890 **TM07H**	FRP-091311-008						TOT															
11-19891 **TM07I**	FRP-091311-009						TOT															
11-19892 **TM07J**	FRP-091311-010						TOT															
11-19894 **TM07L**	FRP-091311-002						DIS															
11-19895 **TM07M**	FRP-091311-003						DIS fail															

S2 only preserved with ZnOAC.

Checked By JM Date 9/14/11

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: AMEC

Project Name: FRP 2011 Shoreline Investigation

COC No(s): JM (NA)

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

Assigned ARI Job No: ~~TM07~~ TM08

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) 5.5 3.3 ____ ____ ____

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

Temp Gun ID#: 90877952

Cooler Accepted by: JM Date: 9/13/11 Time: 1635

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	9/12/11	

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

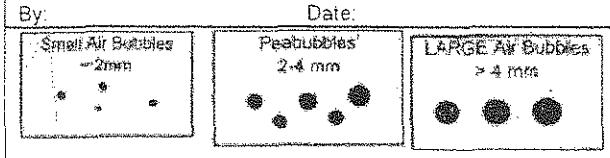
Samples Logged by: JM Date: 9/14/11 Time: 735

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:



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

PRESERVATION VERIFICATION 09/14/11
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **TM08**

Inquiry Number: NONE
Analysis Requested: 09/14/11
Contact: Long, John
Client: AMEC Geomatrix
Logged by: JM
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Kelly
VTSR: 09/13/11

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

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	AK102 <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
11-19896 **TM08A**	FRP-091311-001						TOT pass															
11-19897 **TM08B**	FRP-091311-002			JM ~~pass~~			TOT						~~Fail~~ ~~pass~~	JM								
11-19898 **TM08C**	FRP-091311-003			~~Fail~~			TOT fail						~~Fail~~						OK			
11-19899 **TM08D**	FRP-091311-004						TOT												<2	I7028	5mL	09.14.11 MJ
11-19900 **TM08E**	FRP-091311-005						TOT												OK			
11-19901 **TM08F**	FRP-091311-006						TOT												OK			
11-19902 **TM08G**	FRP-091311-007						TOT pass															
11-19903 **TM08H**	FRP-091311-008						TOT															
11-19904 **TM08I**	FRP-091311-009						TOT															
11-19905 **TM08J**	FRP-091311-010						TOT															

~~S2 only preserved with ZnOAc~~ JM

Checked By JM Date 9/14/11

AMEC E&I Received JAN 24 2012 SEATTLE OFC

Subject: FW: FRP Metals Changes
From: "Neirby, Crystal" <Crystal.Neirby@amec.com>
Date: 12/28/2011 10:33 AM
To: Eric Branson <eric@arilabs.com>
CC: Kelly Bottem <kellyb@arilabs.com>, "Long, John" <John.Long@amec.com>

Hi Eric,
First, can you send me the log-ins for the porewater samples? I want to make sure everything got logged in correctly.

Second, I had emailed the below to Kelly and she said it could be done and asked me to forward the email along with the information to you. We would like iron and manganese added to the following five samples:
SDG TL89 – FRP-091211-003
SDG TM07 – FRP-091311-002 and FRP-091311-003
SDG TL76 – FRP-090911-002
SDG TM24 – FRP-091411-002

Hopefully there are very few affected pages. It is ok with me if you send revised pages to add into the existing packages. I will also need revised EDDs or just one EDD with the iron and manganese results for the above samples.

Thanks!
Crystal

Crystal Neirby | Project Scientist
AMEC | 600 University St, Suite 600 | Seattle, WA 98101
206.838.8469 (direct) | 781.724.1019 (cell) | crystal.neirby@amec.com

---

From: Neirby, Crystal
Sent: Wednesday, December 28, 2011 10:06 AM
To: 'Kelly Bottem'
Subject: FRP Metals Changes

Hi Kelly,
Are you in this week at all? I might need to change the metals list for five samples (collected in August and September). Possibly just adding iron and manganese. Is this feasible??

Let me know and we can discuss details.

Crystal

Crystal Neirby | Project Scientist
AMEC | 600 University St, Suite 600 | Seattle, WA 98101
206.838.8469 (direct) | 781.724.1019 (cell) | crystal.neirby@amec.com

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Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: TM07, TM08

Case Narrative

AMEC/Geomatrix
Client Project: Former Rhone Poulenc- 8769 Shoreline Investigation
ARI Job Numbers: TM07, TM08
October 7, 2011

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 ten water samples and one trip blank in good condition on 9/13/11. Please see the enclosed Cooler Receipt Form for further details.

Volatiles by 8260C

The samples were analyzed on 9/15/11 and 9/19/11, within the method recommended holding times.

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

Continuing calibration (s): The continuing calibration (CCAL) on 9/19/11 fell outside the 20% control limit low for Acrolein and 1,2,3-Trichlorobenzene. All detected results associated with this CCAL have been flagged with a "Q" qualifier.

LCS/LCSD/RPDs: All percent recoveries and RPDs were within compliance.

Surrogates: The surrogate percent recoveries of d4-1,2-Dichloroethane were outside the control limits high for samples **FRP-091311-001**, **FRP-091311-003**, **FRP-091311-004**, **FRP-091311-005**, and **FRP-091311-006**. All other surrogate percent recoveries were within control limits.

Method Blank (s): Hexachlorobutadiene, 1,2,4-Trichlorobenzene, Naphthalene, and 1,2,3-Trichlorobenzene were present in **MB-091511** at a level that was greater than ½ the reporting limit. All detected results associated with this method blank were flagged with a "B" qualifier.

Hexachlorobutadiene, n-Butylbenzene, 1,2,4-Trichlorobenzene, Naphthalene, and 1,2,3-Trichlorobenzene were present in **MB-091911** at a level that was greater than ½ the reporting limits. All detected results associated with this method blank have been flagged with a "B" qualifier.

Samples: There were no anomalies associated with these samples.

Metals Analysis (6010, 200.8 and 7000 series)

The samples were digested on 9/19/11 and 9/16/11 - within the method recommended holding time and analyzed between 9/20/11 and 10/3/11.

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

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

Case Narrative

AMEC/Geomatrix
Client Project: Former Rhone Poulenc- 8769 Shoreline Investigation
ARI Job Numbers: TM07, TM08
October 7, 2011

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): The matrix spike percent recovery of selenium fell outside the control limits low for sample **FRP-091311-002**. A post digestion was performed and the recovery was within control limits.

The duplicate RPDs were within control limits.

General Chemistry

The samples were analyzed between 9/13/11 and 9/20/11 within method recommended holding times.

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

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

Sample duplicate/ RPD(s): The RPD was within the control limit.

SRM(s): The percent recoveries were in control.

Geotechnical

A laboratory specific narrative follows.

TM07 : 00011

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: AMEC Geomatrix	**ARI Project No.:** TM07
Client Project: FRP 2011 Shoreline Investigation	**Client Project No.:** 8769

Case Narrative

1. Two samples were submitted for density of a liquid determination using a hydrometer on September 14, 2011, and were in good condition.
2. The density is dependent on the analysis temperature. All reported values have been corrected to 20°C.
3. The data is provided in a summary table.
4. There were no noted anomalies in this project.

Released by: _____ Date: Sept 24, 2011
Technician

Reviewed by: _____ Date: Sept. 24, 2011
Technician

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

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: TM07
Client: AMEC Geomatrix
Project Event: 8769
Project Name: FRP 2011 Shoreline Investigation

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	FRP-091311-001	TM07A	11-19883	Water	09/13/11 09:35	09/13/11 16:35
2.	FRP-091311-002	TM07B	11-19884	Water	09/13/11 10:35	09/13/11 16:35
3.	FRP-091311-003	TM07C	11-19885	Water	09/13/11 11:40	09/13/11 16:35
4.	FRP-091311-004	TM07D	11-19886	Water	09/13/11 13:10	09/13/11 16:35
5.	FRP-091311-005	TM07E	11-19887	Water	09/13/11 13:15	09/13/11 16:35
6.	FRP-091311-006	TM07F	11-19888	Water	09/13/11 13:20	09/13/11 16:35
7.	FRP-091311-007	TM07G	11-19889	Water	09/13/11 14:20	09/13/11 16:35
8.	FRP-091311-008	TM07H	11-19890	Water	09/13/11 14:45	09/13/11 16:35
9.	FRP-091311-009	TM07I	11-19891	Water	09/13/11 15:25	09/13/11 16:35
10.	FRP-091311-010	TM07J	11-19892	Water	09/13/11 15:40	09/13/11 16:35
11.	Trip Blank	TM07K	11-19893	Water	09/13/11	09/13/11 16:35
12.	FRP-091311-002	TM07L	11-19894	Water	09/13/11 10:35	09/13/11 16:35
13.	FRP-091311-003	TM07M	11-19895	Water	09/13/11 11:40	09/13/11 16:35

Printed 09/14/11

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: TM08
Client: AMEC Geomatrix
Project Event: 8769
Project Name: FRP 2011 Shoreline Investigation

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	FRP-091311-001	TM08A	11-19896	Water	09/13/11 09:35	09/13/11 16:35
2.	FRP-091311-002	TM08B	11-19897	Water	09/13/11 10:35	09/13/11 16:35
3.	FRP-091311-003	TM08C	11-19898	Water	09/13/11 11:40	09/13/11 16:35
4.	FRP-091311-004	TM08D	11-19899	Water	09/13/11 13:10	09/13/11 16:35
5.	FRP-091311-005	TM08E	11-19900	Water	09/13/11 13:15	09/13/11 16:35
6.	FRP-091311-006	TM08F	11-19901	Water	09/13/11 13:20	09/13/11 16:35
7.	FRP-091311-007	TM08G	11-19902	Water	09/13/11 14:20	09/13/11 16:35
8.	FRP-091311-008	TM08H	11-19903	Water	09/13/11 14:45	09/13/11 16:35
9.	FRP-091311-009	TM08I	11-19904	Water	09/13/11 15:25	09/13/11 16:35
10.	FRP-091311-010	TM08J	11-19905	Water	09/13/11 15:40	09/13/11 16:35

Printed 09/14/11

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

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

* Duplicate RPD is not within established control limits

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

N Matrix Spike recovery not within established control limits

NA Not Applicable, analyte not spiked

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

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

Organic Data

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

* Flagged value is not within established control limits

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

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

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

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

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

TM07 : 00015

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)**

TM07 : 00016

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

TM07 : 00017

SURR SOLUTIONS

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

TM07 : 00018

LCS SOLUTIONS

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

TM07 : 00019

LCS SOLUTIONS

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

TM07:00020

Analytical Resources, Incorporated
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Spike Recovery Control Limits for Analysis of Aqueous Samples Volatile Organic Compounds (VOA) EPA SW-846 Methods 8260C 5 mL Purge Volume [9]

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

Extraction Method:	ARI[1] Control Limits	ARI[1,2] ME Limits	DoD[6] Control Limits	DoD[2,6] ME Limits
LCS Spike Recovery [8]				-
Dichlorodifluoromethane	48 - 147	32 - 164	30 - 155	10 - 175
Chloromethane	66 - 130	55 - 141	40 - 125	25 - 140
Vinyl Chloride	73 - 130	64 - 140	50 - 145	35 - 165
Bromomethane	60 - 138	47 - 151	30 - 145	10 - 165
Chloroethane	52 - 151	36 - 168	60 - 135	50 - 145
Trichlorofluoromethane	36 - 175	13 - 198	60 - 145	45 - 160
Acrolein	34 - 164	12 - 186	(4)	(4)
1,1,2-Trichloro-1,2,2-trifluoroethane	69 - 132	59 - 143	(4)	(4)
Acetone	60 - 144	46 - 158	40 - 140	20 - 160
1,1-Dichloroethene	73 - 124	65 - 133	70 - 130	55 - 140
Bromoethane	70 - 133	60 - 144	(4)	(4)
Methyl Iodide	57 - 149	42 - 164	(4)	(4)
Methylene Chloride	74 - 121	66 - 129	55 - 140	40 - 155
Acrylonitrile	75 - 141	64 - 152	(4)	(4)
Methyl tert-Butyl Ether	79 - 127	71 - 135	65 - 125	55 - 135
Carbon Disulfide	67 - 133	56 - 144	35 - 160	15 - 185
trans-1,2-Dichloroethene	80 - **120**	74 - 126	60 - 140	45 - 150
Vinyl Acetate	61 - 145	47 - 159	(4)	(4)
1,1-Dichloroethane	80 - 123	73 - 130	70 - 135	60 - 145
2-Butanone	64 - 149	50 - 163	30 - 150	10 - 170
2,2-Dichloropropane	72 - 136	61 - 147	70 - 135	60 - 150
cis-1,2-Dichloroethene	**80 - 120**	78 - 125	70 - 125	60 - 135
Chloroform	80 - 121	73 - 128	65 - 135	50 - 150
Bromodichloromethane	80 - 122	73 - 129	75 - 120	70 - 130
1,1,1-Trichloroethane	80 - 124	73 - 131	65 - 130	55 - 145
1,1-Dichloropropene	**80** - 123	76 - 130	75 - 130	65 - 140
Carbon Tetrachloride	77 - 123	69 - 131	65 - 140	55 - 150
1,2-Dichloroethane	78 - 121	71 - 128	70 - 130	60 - 140
Benzene	**80 - 120**	80 - 124	80 - 120	75 - 130
Trichloroethene	**80 - 120**	76 - 124	70 - 125	60 - 135
1,2-Dichloropropane	**80** - 120	76 - 126	75 - 125	65 - 135
Bromochloromethane	**80** - 120	77 - 126	65 - 130	55 - 140
Dibromomethane	**80 - 120**	76 - 122	75 - 125	65 - 135
2-Chloroethylvinylether	59 - 136	46 - 149	(4)	(4)
4-Methyl-2-Pentanone	68 - 138	56 - 150	60 - 135	45 - 145
cis-1,3-Dichloropropene	74 - 127	65 - 136	70 - 130	60 - 140

TM07 : 00021

Analytical Resources, Incorporated
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Spike Recovery Control Limits for Analysis of Aqueous Samples Volatile Organic Compounds (VOA) EPA SW-846 Methods 8260C 5 mL Purge Volume [9]

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

Extraction Method:	ARI[1] Control Limits	ARI[1,2] ME Limits	DoD[6] Control Limits	DoD[2,6] ME Limits
Toluene	**80 - 120**	78 - 122	75 - 120	70 - 130
trans-1,3-Dichloropropene	68 - 131	58 - 142	55 - 140	40 - 155
2-Hexanone	70 - 136	59 - 147	55 - 130	45 - 140
1,1,2-Trichloroethane	**80 - 120**	79 - 120	75 - 125	65 - 135
1,3-Dichloropropane	**80** - 120	76 - 126	75 - 125	65 - 135
Tetrachloroethene	79 - **120**	73 - 125	45 - 150	25 - 165
Dibromochloromethane	77 - 123	69 - 131	60 - 135	45 - 145
Ethylene Dibromide	**80** - 121	76 - 128	(4)	(4)
Chlorobenzene	**80 - 120**	77 - 121	80 - 120	75 - 130
Ethylbenzene	83 - 122	77 - 129	75 - 125	65 - 135
1,1,2,2-Tetrachloroethane	**80** - 121	74 - 128	65 - 130	55 - 140
m,p-Xylene	**80** - 123	79 - 129	75 - 130	65 - 135
o-Xylene	**80** - 125	75 - 132	80 - 120	75 - 130
Styrene	72 - 130	62 - 140	65 - 135	55 - 145
Isopropylbenzene	**80** - 129	78 - 136	75 - 125	65 - 135
Bromoform	71 - **120**	63 - 126	70 - 130	60 - 140
1,1,1,2-Tetrachloroethane	77 - 122	70 - 130	80 - 130	75 - 135
1,2,3-Trichloropropane	**80** - 120	76 - 126	75 - 125	65 - 130
trans-1,4-Dichloro-2-butene	62 - 146	48 - 160	(4)	(4)
n-Propylbenzene	**80** - 128	78 - 135	70 - 130	65 - 140
Bromobenzene	**80 - 120**	78 - 122	75 - 125	70 - 130
1,3,5-Trimethylbenzene	**80** - 129	77 - 137	75 - 130	65 - 140
2-Chlorotoluene	**80** - 124	75 - 131	75 - 125	65 - 135
4-Chlorotoluene	**80** - 124	75 - 131	75 - 130	65 - 135
tert-Butylbenzene	**80** - 128	76 - 136	70 - 130	60 - 140
1,2,4-Trimethylbenzene	**80** - 130	75 - 138	75 - 130	65 - 140
sec-Butylbenzene	**80** - 129	78 - 136	70 - 125	65 - 135
4-Isopropyltoluene	**80** - 133	75 - 141	75 - 130	65 - 140
1,3-Dichlorobenzene	**80 - 120**	76 - 124	75 - 125	65 - 130
1,4-Dichlorobenzene	**80 - 120**	75 - 122	75 - 125	65 - 130
n-Butylbenzene	78 - 140	**68** - 150	70 - 135	55 - 150
1,2-Dichlorobenzene	**80 - 120**	77 - 121	70 - 120	60 - 130
1,2-Dibromo-3-chloropropane	72 - 131	62 - 141	50 - 130	35 - 145
1,2,4-Trichlorobenzene	75 - 130	66 - 139	65 - 135	55 - 145
Hexachloro-1,3-butadiene	73 - 129	64 - 138	50 - 140	35 - 160
Naphthalene	66 - 140	54 - 152	55 - 140	40 - 150
1,2,3-Trichlorobenzene	74 - 130	65 - 139	55 - 140	45 - 155

TM07 : 00022

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Spike Recovery Control Limits for Analysis of Aqueous Samples Volatile Organic Compounds (VOA) EPA SW-846 Methods 8260C 5 mL Purge Volume [9]

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

Extraction Method:	ARI[1] Control Limits	ARI[1,2] ME Limits	DoD[6] Control Limits	DoD[2,6] ME Limits
MB/LCS Surrogate Recovery				
Dibromofluoromethane	**80 - 120**	(3)	85 - 115	(3)
d4-1,2-Dichloroethane	**80** - 122	(3)	70 - 120	(3)
d8-Toluene	**80 - 120**	(3)	85 - 120	(3)
4-Bromofluorobenzene	**80 - 120**	(3)	75 - 120	(3)
d4-1,2-Dichlorobenzene	**80 - 120**	(3)	(4)	(3)(4)
Sample Surrogate Recovery				
Dibromofluoromethane	30 - 160 [7]	(3)	85 - 115	(3)
d4-1,2-Dichloroethane	**80** - 125	(3)	70 - 120	(3)
d8-Toluene	**80 - 120**	(3)	85 - 120	(3)
4-Bromofluorobenzene	**80 - 120**	(3)	75 - 120	(3)
D4-1,2-Dichlorobenzene	**80 - 120**	(3)	(4)	(3)(4)

(1) Control Limits calculated using all data generated 1/1/08 through 12/31/08.
(2) **ME** = A **marginal exceedance** defined in the NELAC Standard[5] as beyond the LCS-CL but still within the ME limits. ME limits are between 3 and 4 standard deviations around the mean. A maximum of four marginal exceedances are acceptable. Five or more marginal exceedances require corrective action.
(3) Marginal Exceedances not allowed for surrogate standards.
(4) The DoD-QSM [6] does not list recovery limits for these compounds.
(5) **2003 NELAC Standard (EPA/600/R-04/003), July 2003**, Chapter 5, pages 251-252.
(6) Page 182 of: **Department of Defense Quality Systems Manual for Environmental Laboratories, Version 3 Final, March 2005** Prepared By Environmental Data Quality Workgroup, Department of Navy, Lead Service (Based On National Environmental Laboratory Accreditation Conference (NELAC) Chapter 5 (Quality Systems) NELAC Voted Version – 5 June 2003
(7) 30 – 160 are default, advisory control limits used when there is insufficient data to calculate historic control limits. **DO NOT** use these limits as the sole reason to reject the data from a batch of analyses
(8) Laboratory Control Sample (LCS) spike recovery control limits also used as advisory control limits for sample matrix spike (MS) analyzes. MS recovery values are advisory and not used to assess the acceptability of an analytical batch.
(9) Highlighted control limits (**bold font**) are adjusted from the calculated values as follows:

a) ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit.
b) Control limits for analyzes with no separate preparation procedure are adjusted to reflect the minimum uncertainty in the calibration of the instrument allowed by the referenced analytical method.

TM07 : 00023

Analytical Resources, Incorporated
Analytical Chemists and Consultants

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

Effective 5/1/09

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

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

TM07 : 00024

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%

TM07 : 00025

Volatile Analysis
Report and Summary QC Forms

ARI Job ID: TM07, TM08

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-001**
 SAMPLE

Lab Sample ID: TM07A
LIMS ID: 11-19883
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/15/11 14:55

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.10	0.5	< 0.5 U
74-83-9	Bromomethane	0.04	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.08	0.2	< 0.2 U
75-00-3	Chloroethane	0.15	0.2	< 0.2 U
75-09-2	Methylene Chloride	0.39	0.5	< 0.5 U
67-64-1	**Acetone**	**0.72**	**5.0**	~~1.1 J~~ 5.0 U
75-15-0	Carbon Disulfide	0.09	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.09	0.2	< 0.2 U
75-34-3	1,1-Dichloroethane	0.05	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.08	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.10	0.2	< 0.2 U
67-66-3	Chloroform	0.08	0.2	< 0.2 U
107-06-2	1,2-Dichloroethane	0.08	0.2	< 0.2 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.09	0.2	< 0.2 U
56-23-5	Carbon Tetrachloride	0.08	0.2	< 0.2 U
108-05-4	Vinyl Acetate	0.07	1.0	< 1.0 U
75-27-4	Bromodichloromethane	0.05	0.2	< 0.2 U
78-87-5	1,2-Dichloropropane	0.09	0.2	< 0.2 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.2	< 0.2 U
79-01-6	Trichloroethene	0.08	0.2	< 0.2 U
124-48-1	Dibromochloromethane	0.09	0.2	< 0.2 U
79-00-5	1,1,2-Trichloroethane	0.04	0.2	< 0.2 U
71-43-2	Benzene	0.06	0.2	< 0.2 U
10061-02-6	trans-1,3-Dichloropropene	0.06	0.2	< 0.2 U
110-75-8	2-Chloroethylvinylether	0.09	1.0	< 1.0 U
75-25-2	Bromoform	0.07	0.2	< 0.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.38	5.0	< 5.0 U
591-78-6	2-Hexanone	0.31	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.09	0.2	< 0.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.07	0.2	< 0.2 U R
108-88-3	Toluene	0.06	0.2	< 0.2 U
108-90-7	Chlorobenzene	0.04	0.2	< 0.2 U
100-41-4	Ethylbenzene	0.09	0.2	< 0.2 U
100-42-5	Styrene	0.07	0.2	< 0.2 U
75-69-4	Trichlorofluoromethane	0.09	0.2	< 0.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.11	0.2	< 0.2 U
179601-23-1	m,p-Xylene	0.14	0.4	< 0.4 U
95-47-6	o-Xylene	0.06	0.2	< 0.2 U
95-50-1	1,2-Dichlorobenzene	0.06	0.2	< 0.2 U
541-73-1	1,3-Dichlorobenzene	0.04	0.2	< 0.2 U
106-46-7	1,4-Dichlorobenzene	0.06	0.2	< 0.2 U
107-02-8	Acrolein	0.29	5.0	< 5.0 U
74-88-4	Methyl Iodide	0.04	1.0	< 1.0 U
74-96-4	Bromoethane	0.09	0.2	< 0.2 U
107-13-1	Acrylonitrile	0.18	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.09	0.2	< 0.2 U
74-95-3	Dibromomethane	0.08	0.2	< 0.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.07	0.2	< 0.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.21	0.5	< 0.5 U

TM07:00027

ANALYTICAL RESOURCES INCORPORATED

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

Sample ID: FRP-091311-001
SAMPLE

Lab Sample ID: TM07A
LIMS ID: 11-19883
Matrix: Water
Date Analyzed: 09/15/11 14:55

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	122%
d8-Toluene	97.3%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	103%

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-002**
 SAMPLE

Lab Sample ID: TM07B
LIMS ID: 11-19884
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/15/11 15:22

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

CN 2/29/12

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-002**
 SAMPLE

Lab Sample ID: TM07B
LIMS ID: 11-19884
Matrix: Water
Date Analyzed: 09/15/11 15:22

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	118%
d8-Toluene	98.7%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	107%

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-003**
 SAMPLE

Lab Sample ID: TM07C
LIMS ID: 11-19885
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/15/11 15:48

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.10	0.5	< 0.5 U
74-83-9	Bromomethane	0.04	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.08	0.2	< 0.2 U
75-00-3	Chloroethane	0.15	0.2	< 0.2 U
75-09-2	Methylene Chloride	0.39	0.5	< 0.5 U
67-64-1	Acetone	0.72	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.09	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.09	0.2	< 0.2 U
75-34-3	1,1-Dichloroethane	0.05	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.08	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.10	0.2	< 0.2 U
67-66-3	Chloroform	0.08	0.2	< 0.2 U
107-06-2	1,2-Dichloroethane	0.08	0.2	< 0.2 U
78-93-3	**2-Butanone**	**0.81**	**5.0**	~~**4.6 J**~~ 5.0U
71-55-6	1,1,1-Trichloroethane	0.09	0.2	< 0.2 U
56-23-5	Carbon Tetrachloride	0.08	0.2	< 0.2 U
108-05-4	Vinyl Acetate	0.07	1.0	< 1.0 U
75-27-4	Bromodichloromethane	0.05	0.2	< 0.2 U
78-87-5	1,2-Dichloropropane	0.09	0.2	< 0.2 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.2	< 0.2 U
79-01-6	Trichloroethene	0.08	0.2	< 0.2 U
124-48-1	Dibromochloromethane	0.09	0.2	< 0.2 U
79-00-5	1,1,2-Trichloroethane	0.04	0.2	< 0.2 U
71-43-2	**Benzene**	**0.06**	**0.2**	**0.3** J
10061-02-6	trans-1,3-Dichloropropene	0.06	0.2	< 0.2 U
110-75-8	2-Chloroethylvinylether	0.09	1.0	< 1.0 U
75-25-2	Bromoform	0.07	0.2	< 0.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.38	5.0	< 5.0 U
591-78-6	2-Hexanone	0.31	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.09	0.2	< 0.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.07	0.2	< 0.2 U R
108-88-3	**Toluene**	**0.06**	**0.2**	**150 E** DNR
108-90-7	Chlorobenzene	0.04	0.2	< 0.2 U
100-41-4	Ethylbenzene	0.09	0.2	< 0.2 U
100-42-5	Styrene	0.07	0.2	< 0.2 U
75-69-4	Trichlorofluoromethane	0.09	0.2	< 0.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.11	0.2	< 0.2 U
179601-23-1	m,p-Xylene	0.14	0.4	< 0.4 U
95-47-6	o-Xylene	0.06	0.2	< 0.2 U
95-50-1	1,2-Dichlorobenzene	0.06	0.2	< 0.2 U
541-73-1	1,3-Dichlorobenzene	0.04	0.2	< 0.2 U
106-46-7	1,4-Dichlorobenzene	0.06	0.2	< 0.2 U
107-02-8	Acrolein	0.29	5.0	< 5.0 U
74-88-4	Methyl Iodide	0.04	1.0	< 1.0 U
74-96-4	Bromoethane	0.09	0.2	< 0.2 U
107-13-1	Acrylonitrile	0.18	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.09	0.2	< 0.2 U
74-95-3	Dibromomethane	0.08	0.2	< 0.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.07	0.2	< 0.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.21	0.5	< 0.5 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-003**
 SAMPLE

Lab Sample ID: TM07C
LIMS ID: 11-19885
Matrix: Water
Date Analyzed: 09/15/11 15:48

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	120%
d8-Toluene	102%
Bromofluorobenzene	90.3%
d4-1,2-Dichlorobenzene	94.6%

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-003**
 DILUTION

Lab Sample ID: TM07C
LIMS ID: 11-19885
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/19/11 12:58

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.49	2.5	< 2.5 U DNR
74-83-9	Bromomethane	0.22	5.0	< 5.0 U
75-01-4	Vinyl Chloride	0.38	1.0	< 1.0 U
75-00-3	Chloroethane	0.76	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	2.5	< 2.5 U
67-64-1	Acetone	3.6	25	< 25 U
75-15-0	**Carbon Disulfide**	**0.44**	**1.0**	**1.4**
75-35-4	1,1-Dichloroethene	0.46	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	0.26	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	0.42	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	0.50	1.0	< 1.0 U
67-66-3	Chloroform	0.40	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	0.38	1.0	< 1.0 U
78-93-3	2-Butanone	4.0	25	< 25 U
71-55-6	1,1,1-Trichloroethane	0.44	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	0.38	1.0	< 1.0 U
108-05-4	Vinyl Acetate	0.34	5.0	< 5.0 U
75-27-4	Bromodichloromethane	0.26	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	0.46	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	0.29	1.0	< 1.0 U
79-01-6	Trichloroethene	0.38	1.0	< 1.0 U
124-48-1	Dibromochloromethane	0.45	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	0.18	1.0	< 1.0 U
71-43-2	Benzene	0.28	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	0.30	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	0.43	5.0	< 5.0 U
75-25-2	Bromoform	0.35	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	1.9	25	< 25 U
591-78-6	2-Hexanone	1.6	25	< 25 U
127-18-4	Tetrachloroethene	0.44	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	0.34	1.0	< 1.0 U
108-88-3	**Toluene**	**0.28**	**1.0**	**160**
108-90-7	Chlorobenzene	0.21	1.0	< 1.0 U DNR
100-41-4	Ethylbenzene	0.47	1.0	< 1.0 U
100-42-5	Styrene	0.33	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	0.46	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.54	1.0	< 1.0 U
179601-23-1	m,p-Xylene	0.72	2.0	< 2.0 U
95-47-6	o-Xylene	0.28	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	0.28	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.20	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.28	1.0	< 1.0 U
107-02-8	Acrolein	1.5	25	< 25 U
74-88-4	Methyl Iodide	0.20	5.0	< 5.0 U
74-96-4	Bromoethane	0.45	1.0	< 1.0 U
107-13-1	Acrylonitrile	0.92	5.0	< 5.0 U
563-58-6	1,1-Dichloropropene	0.46	1.0	< 1.0 U
74-95-3	Dibromomethane	0.40	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	0.34	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	1.1	2.5	< 2.5 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-003**
 DILUTION

Lab Sample ID: TM07C
LIMS ID: 11-19885
Matrix: Water
Date Analyzed: 09/19/11 12:58

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	1.1	2.5	< 2.5 U DNR
110-57-6	trans-1,4-Dichloro-2-butene	1.2	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	0.32	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	0.29	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	0.56	2.5	< 2.5 U
106-93-4	Ethylene Dibromide	0.38	1.0	< 1.0 U
74-97-5	Bromochloromethane	0.34	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	0.42	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	0.10	1.0	< 1.0 U
98-82-8	Isopropylbenzene	0.31	1.0	< 1.0 U
103-65-1	n-Propylbenzene	0.40	1.0	< 1.0 U
108-86-1	Bromobenzene	0.26	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	0.21	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	0.36	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	0.30	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	0.38	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	0.38	1.0	< 1.0 U
104-51-8	n-Butylbenzene	0.54	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	0.50	2.5	< 2.5 U
91-20-3	Naphthalene	0.35	2.5	< 2.5 U
87-61-6	1,2,3-Trichlorobenzene	0.44	2.5	< 2.5 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	99.6%
Bromofluorobenzene	98.8%
d4-1,2-Dichlorobenzene	99.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-004**
 SAMPLE

Lab Sample ID: TM07D
LIMS ID: 11-19886
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/15/11 16:15

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	**Chloromethane**	**0.10**	**0.5**	**0.6** J
74-83-9	Bromomethane	0.04	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.08	0.2	< 0.2 U
75-00-3	Chloroethane	0.15	0.2	< 0.2 U
75-09-2	Methylene Chloride	0.39	0.5	< 0.5 U
67-64-1	**Acetone**	**0.72**	**5.0**	**5.8** V
75-15-0	Carbon Disulfide	0.09	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.09	0.2	< 0.2 U
75-34-3	1,1-Dichloroethane	0.05	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.08	0.2	< 0.2 U
156-59-2	**cis-1,2-Dichloroethene**	**0.10**	**0.2**	**0.4** J
67-66-3	Chloroform	0.08	0.2	< 0.2 U
107-06-2	1,2-Dichloroethane	0.08	0.2	< 0.2 U
78-93-3	**2-Butanone**	**0.81**	**5.0**	~~**1.2** J~~ 5.0 U
71-55-6	1,1,1-Trichloroethane	0.09	0.2	< 0.2 U
56-23-5	Carbon Tetrachloride	0.08	0.2	< 0.2 U
108-05-4	Vinyl Acetate	0.07	1.0	< 1.0 U
75-27-4	Bromodichloromethane	0.05	0.2	< 0.2 U
78-87-5	1,2-Dichloropropane	0.09	0.2	< 0.2 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.2	< 0.2 U
79-01-6	Trichloroethene	0.08	0.2	< 0.2 U
124-48-1	Dibromochloromethane	0.09	0.2	< 0.2 U
79-00-5	1,1,2-Trichloroethane	0.04	0.2	< 0.2 U
71-43-2	**Benzene**	**0.06**	**0.2**	**0.1 J**
10061-02-6	trans-1,3-Dichloropropene	0.06	0.2	< 0.2 U
110-75-8	2-Chloroethylvinylether	0.09	1.0	< 1.0 U
75-25-2	Bromoform	0.07	0.2	< 0.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.38	5.0	< 5.0 U
591-78-6	2-Hexanone	0.31	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.09	0.2	< 0.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.07	0.2	< 0.2 U R
108-88-3	**Toluene**	**0.06**	**0.2**	**0.1 J**
108-90-7	Chlorobenzene	0.04	0.2	< 0.2 U
100-41-4	Ethylbenzene	0.09	0.2	< 0.2 U
100-42-5	Styrene	0.07	0.2	< 0.2 U
75-69-4	Trichlorofluoromethane	0.09	0.2	< 0.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.11	0.2	< 0.2 U
179601-23-1	m,p-Xylene	0.14	0.4	< 0.4 U
95-47-6	o-Xylene	0.06	0.2	< 0.2 U
95-50-1	1,2-Dichlorobenzene	0.06	0.2	< 0.2 U
541-73-1	1,3-Dichlorobenzene	0.04	0.2	< 0.2 U
106-46-7	1,4-Dichlorobenzene	0.06	0.2	< 0.2 U
107-02-8	Acrolein	0.29	5.0	< 5.0 U
74-88-4	Methyl Iodide	0.04	1.0	< 1.0 U
74-96-4	Bromoethane	0.09	0.2	< 0.2 U
107-13-1	Acrylonitrile	0.18	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.09	0.2	< 0.2 U
74-95-3	Dibromomethane	0.08	0.2	< 0.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.07	0.2	< 0.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.21	0.5	< 0.5 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-004**
 SAMPLE

Lab Sample ID: TM07D
LIMS ID: 11-19886
Matrix: Water
Date Analyzed: 09/15/11 16:15

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.23	0.5	< 0.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.24	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.06	0.2	< 0.2 U
95-63-6	1,2,4-Trimethylbenzene	0.06	0.2	< 0.2 U
87-68-3	Hexachlorobutadiene	0.11	0.5	< 0.5 U
106-93-4	Ethylene Dibromide	0.08	0.2	< 0.2 U
74-97-5	Bromochloromethane	0.07	0.2	< 0.2 U
594-20-7	2,2-Dichloropropane	0.08	0.2	< 0.2 U
142-28-9	1,3-Dichloropropane	0.02	0.2	< 0.2 U
98-82-8	Isopropylbenzene	0.06	0.2	< 0.2 U
103-65-1	n-Propylbenzene	0.08	0.2	< 0.2 U
108-86-1	Bromobenzene	0.05	0.2	< 0.2 U
95-49-8	2-Chlorotoluene	0.04	0.2	< 0.2 U
106-43-4	4-Chlorotoluene	0.07	0.2	< 0.2 U
98-06-6	tert-Butylbenzene	0.06	0.2	< 0.2 U
135-98-8	sec-Butylbenzene	0.08	0.2	< 0.2 U
99-87-6	4-Isopropyltoluene	0.08	0.2	< 0.2 U
104-51-8	n-Butylbenzene	0.11	0.2	< 0.2 U
120-82-1	1,2,4-Trichlorobenzene	0.10	0.5	< 0.5 U
91-20-3	**Naphthalene**	**0.07**	**0.5**	**6.0 J**
87-61-6	1,2,3-Trichlorobenzene	0.09	0.5	< 0.5 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	129%
d8-Toluene	99.7%
Bromofluorobenzene	105%
d4-1,2-Dichlorobenzene	107%

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-004**
 DILUTION

Lab Sample ID: TM07D
LIMS ID: 11-19886
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/19/11 13:25

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.49	2.5	< 2.5 U
74-83-9	Bromomethane	0.22	5.0	< 5.0 U
75-01-4	Vinyl Chloride	0.38	1.0	< 1.0 U
75-00-3	Chloroethane	0.76	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	2.5	< 2.5 U
67-64-1	Acetone	3.6	25	< 25 U
75-15-0	Carbon Disulfide	0.44	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	0.46	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	0.26	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	0.42	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	0.50	1.0	< 1.0 U
67-66-3	Chloroform	0.40	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	0.38	1.0	< 1.0 U
78-93-3	2-Butanone	4.0	25	< 25 U
71-55-6	1,1,1-Trichloroethane	0.44	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	0.38	1.0	< 1.0 U
108-05-4	Vinyl Acetate	0.34	5.0	< 5.0 U
75-27-4	Bromodichloromethane	0.26	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	0.46	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	0.29	1.0	< 1.0 U
79-01-6	Trichloroethene	0.38	1.0	< 1.0 U
124-48-1	Dibromochloromethane	0.45	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	0.18	1.0	< 1.0 U
71-43-2	Benzene	0.28	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	0.30	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	0.43	5.0	< 5.0 U
75-25-2	Bromoform	0.35	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	1.9	25	< 25 U
591-78-6	2-Hexanone	1.6	25	< 25 U
127-18-4	Tetrachloroethene	0.44	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	0.34	1.0	< 1.0 U
108-88-3	Toluene	0.28	1.0	< 1.0 U
108-90-7	Chlorobenzene	0.21	1.0	< 1.0 U
100-41-4	Ethylbenzene	0.47	1.0	< 1.0 U
100-42-5	Styrene	0.33	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	0.46	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.54	1.0	< 1.0 U
179601-23-1	m,p-Xylene	0.72	2.0	< 2.0 U
95-47-6	o-Xylene	0.28	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	0.28	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.20	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.28	1.0	< 1.0 U
107-02-8	Acrolein	1.5	25	< 25 U
74-88-4	Methyl Iodide	0.20	5.0	< 5.0 U
74-96-4	Bromoethane	0.45	1.0	< 1.0 U
107-13-1	Acrylonitrile	0.92	5.0	< 5.0 U
563-58-6	1,1-Dichloropropene	0.46	1.0	< 1.0 U
74-95-3	Dibromomethane	0.40	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	0.34	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	1.1	2.5	< 2.5 U

DNR

DNR

CM 2/21/12

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-004**
 DILUTION

Lab Sample ID: TM07D
LIMS ID: 11-19886
Matrix: Water
Date Analyzed: 09/19/11 13:25

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	1.1	2.5	< 2.5 U DNQ
110-57-6	trans-1,4-Dichloro-2-butene	1.2	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	0.32	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	0.29	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	0.56	2.5	< 2.5 U
106-93-4	Ethylene Dibromide	0.38	1.0	< 1.0 U
74-97-5	Bromochloromethane	0.34	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	0.42	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	0.10	1.0	< 1.0 U
98-82-8	Isopropylbenzene	0.31	1.0	< 1.0 U
103-65-1	n-Propylbenzene	0.40	1.0	< 1.0 U
108-86-1	Bromobenzene	0.26	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	0.21	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	0.36	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	0.30	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	0.38	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	0.38	1.0	< 1.0 U
104-51-8	n-Butylbenzene	0.54	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	0.50	2.5	< 2.5 U
91-20-3	**Naphthalene**	**0.35**	**2.5**	**5.4 B**
87-61-6	1,2,3-Trichlorobenzene	0.44	2.5	< 2.5 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	102%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	101%

TM07:00038

CM 2/24/12

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-005**
 SAMPLE

Lab Sample ID: TM07E
LIMS ID: 11-19887
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/15/11 16:41

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	**Chloromethane**	**0.10**	**0.5**	**0.6** J
74-83-9	Bromomethane	0.04	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.08	0.2	< 0.2 U
75-00-3	Chloroethane	0.15	0.2	< 0.2 U
75-09-2	Methylene Chloride	0.39	0.5	< 0.5 U
67-64-1	**Acetone**	**0.72**	**5.0**	**5.8**
75-15-0	Carbon Disulfide	0.09	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.09	0.2	< 0.2 U
75-34-3	1,1-Dichloroethane	0.05	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.08	0.2	< 0.2 U
156-59-2	**cis-1,2-Dichloroethene**	**0.10**	**0.2**	**0.4** J
67-66-3	Chloroform	0.08	0.2	< 0.2 U
107-06-2	1,2-Dichloroethane	0.08	0.2	< 0.2 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.09	0.2	< 0.2 U
56-23-5	Carbon Tetrachloride	0.08	0.2	< 0.2 U
108-05-4	Vinyl Acetate	0.07	1.0	< 1.0 U
75-27-4	Bromodichloromethane	0.05	0.2	< 0.2 U
78-87-5	1,2-Dichloropropane	0.09	0.2	< 0.2 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.2	< 0.2 U
79-01-6	Trichloroethene	0.08	0.2	< 0.2 U
124-48-1	Dibromochloromethane	0.09	0.2	< 0.2 U
79-00-5	1,1,2-Trichloroethane	0.04	0.2	< 0.2 U
71-43-2	Benzene	0.06	0.2	< 0.2 U
10061-02-6	trans-1,3-Dichloropropene	0.06	0.2	< 0.2 U
110-75-8	2-Chloroethylvinylether	0.09	1.0	< 1.0 U
75-25-2	Bromoform	0.07	0.2	< 0.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.38	5.0	< 5.0 U
591-78-6	2-Hexanone	0.31	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.09	0.2	< 0.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.07	0.2	< 0.2 UR
108-88-3	Toluene	0.06	0.2	< 0.2 U
108-90-7	Chlorobenzene	0.04	0.2	< 0.2 U
100-41-4	Ethylbenzene	0.09	0.2	< 0.2 U
100-42-5	Styrene	0.07	0.2	< 0.2 U
75-69-4	Trichlorofluoromethane	0.09	0.2	< 0.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.11	0.2	< 0.2 U
179601-23-1	m,p-Xylene	0.14	0.4	< 0.4 U
95-47-6	o-Xylene	0.06	0.2	< 0.2 U
95-50-1	1,2-Dichlorobenzene	0.06	0.2	< 0.2 U
541-73-1	1,3-Dichlorobenzene	0.04	0.2	< 0.2 U
106-46-7	1,4-Dichlorobenzene	0.06	0.2	< 0.2 U
107-02-8	Acrolein	0.29	5.0	< 5.0 U
74-88-4	Methyl Iodide	0.04	1.0	< 1.0 U
74-96-4	Bromoethane	0.09	0.2	< 0.2 U
107-13-1	Acrylonitrile	0.18	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.09	0.2	< 0.2 U
74-95-3	Dibromomethane	0.08	0.2	< 0.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.07	0.2	< 0.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.21	0.5	< 0.5 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-005**
 SAMPLE

Lab Sample ID: TM07E
LIMS ID: 11-19887
Matrix: Water
Date Analyzed: 09/15/11 16:41

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.23	0.5	< 0.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.24	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.06	0.2	< 0.2 U
95-63-6	1,2,4-Trimethylbenzene	0.06	0.2	< 0.2 U
87-68-3	Hexachlorobutadiene	0.11	0.5	< 0.5 U
106-93-4	Ethylene Dibromide	0.08	0.2	< 0.2 U
74-97-5	Bromochloromethane	0.07	0.2	< 0.2 U
594-20-7	2,2-Dichloropropane	0.08	0.2	< 0.2 U
142-28-9	1,3-Dichloropropane	0.02	0.2	< 0.2 U
98-82-8	Isopropylbenzene	0.06	0.2	< 0.2 U
103-65-1	n-Propylbenzene	0.08	0.2	< 0.2 U
108-86-1	Bromobenzene	0.05	0.2	< 0.2 U
95-49-8	2-Chlorotoluene	0.04	0.2	< 0.2 U
106-43-4	4-Chlorotoluene	0.07	0.2	< 0.2 U
98-06-6	tert-Butylbenzene	0.06	0.2	< 0.2 U
135-98-8	sec-Butylbenzene	0.08	0.2	< 0.2 U
99-87-6	4-Isopropyltoluene	0.08	0.2	< 0.2 U
104-51-8	n-Butylbenzene	0.11	0.2	< 0.2 U
120-82-1	1,2,4-Trichlorobenzene	0.10	0.5	< 0.5 U
91-20-3	**Naphthalene**	**0.07**	**0.5**	**4.8** J
87-61-6	1,2,3-Trichlorobenzene	0.09	0.5	< 0.5 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	124%
d8-Toluene	101%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	106%

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-005**
 DILUTION

Lab Sample ID: TM07E
LIMS ID: 11-19887
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/19/11 13:52

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.49	2.5	< 2.5 U DNQ
74-83-9	Bromomethane	0.22	5.0	< 5.0 U
75-01-4	Vinyl Chloride	0.38	1.0	< 1.0 U
75-00-3	Chloroethane	0.76	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	2.5	< 2.5 U
67-64-1	Acetone	3.6	25	< 25 U
75-15-0	Carbon Disulfide	0.44	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	0.46	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	0.26	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	0.42	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	0.50	1.0	< 1.0 U
67-66-3	Chloroform	0.40	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	0.38	1.0	< 1.0 U
78-93-3	2-Butanone	4.0	25	< 25 U
71-55-6	1,1,1-Trichloroethane	0.44	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	0.38	1.0	< 1.0 U
108-05-4	Vinyl Acetate	0.34	5.0	< 5.0 U
75-27-4	Bromodichloromethane	0.26	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	0.46	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	0.29	1.0	< 1.0 U
79-01-6	Trichloroethene	0.38	1.0	< 1.0 U
124-48-1	Dibromochloromethane	0.45	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	0.18	1.0	< 1.0 U
71-43-2	Benzene	0.28	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	0.30	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	0.43	5.0	< 5.0 U
75-25-2	Bromoform	0.35	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	1.9	25	< 25 U
591-78-6	2-Hexanone	1.6	25	< 25 U
127-18-4	Tetrachloroethene	0.44	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	0.34	1.0	< 1.0 U
108-88-3	Toluene	0.28	1.0	< 1.0 U DNR
108-90-7	Chlorobenzene	0.21	1.0	< 1.0 U
100-41-4	Ethylbenzene	0.47	1.0	< 1.0 U
100-42-5	Styrene	0.33	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	0.46	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.54	1.0	< 1.0 U
179601-23-1	m,p-Xylene	0.72	2.0	< 2.0 U
95-47-6	o-Xylene	0.28	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	0.28	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.20	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.28	1.0	< 1.0 U
107-02-8	Acrolein	1.5	25	< 25 U
74-88-4	Methyl Iodide	0.20	5.0	< 5.0 U
74-96-4	Bromoethane	0.45	1.0	< 1.0 U
107-13-1	Acrylonitrile	0.92	5.0	< 5.0 U
563-58-6	1,1-Dichloropropene	0.46	1.0	< 1.0 U
74-95-3	Dibromomethane	0.40	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	0.34	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	1.1	2.5	< 2.5 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-005**
 DILUTION

Lab Sample ID: TM07E
LIMS ID: 11-19887
Matrix: Water
Date Analyzed: 09/19/11 13:52

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	1.1	2.5	< 2.5 U
110-57-6	trans-1,4-Dichloro-2-butene	1.2	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	0.32	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	0.29	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	0.56	2.5	< 2.5 U
106-93-4	Ethylene Dibromide	0.38	1.0	< 1.0 U
74-97-5	Bromochloromethane	0.34	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	0.42	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	0.10	1.0	< 1.0 U
98-82-8	Isopropylbenzene	0.31	1.0	< 1.0 U
103-65-1	n-Propylbenzene	0.40	1.0	< 1.0 U
108-86-1	Bromobenzene	0.26	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	0.21	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	0.36	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	0.30	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	0.38	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	0.38	1.0	< 1.0 U
104-51-8	n-Butylbenzene	0.54	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	0.50	2.5	< 2.5 U
91-20-3	**Naphthalene**	**0.35**	**2.5**	**4.8 B**
87-61-6	1,2,3-Trichlorobenzene	0.44	2.5	< 2.5 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	101%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	98.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-006**
 SAMPLE

Lab Sample ID: TM07F
LIMS ID: 11-19888
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/15/11 17:08

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	**Chloromethane**	**0.10**	**0.5**	**~~0.5 J~~** 0.5 U
74-83-9	Bromomethane	0.04	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.08	0.2	< 0.2 U
75-00-3	Chloroethane	0.15	0.2	< 0.2 U
75-09-2	Methylene Chloride	0.39	0.5	< 0.5 U
67-64-1	**Acetone**	**0.72**	**5.0**	**~~4.3 J~~** 5.0 U
75-15-0	**Carbon Disulfide**	**0.09**	**0.2**	**0.2** J
75-35-4	1,1-Dichloroethene	0.09	0.2	< 0.2 U
75-34-3	1,1-Dichloroethane	0.05	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.08	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.10	0.2	< 0.2 U
67-66-3	Chloroform	0.08	0.2	< 0.2 U
107-06-2	1,2-Dichloroethane	0.08	0.2	< 0.2 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.09	0.2	< 0.2 U
56-23-5	Carbon Tetrachloride	0.08	0.2	< 0.2 U
108-05-4	Vinyl Acetate	0.07	1.0	< 1.0 U
75-27-4	Bromodichloromethane	0.05	0.2	< 0.2 U
78-87-5	1,2-Dichloropropane	0.09	0.2	< 0.2 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.2	< 0.2 U
79-01-6	Trichloroethene	0.08	0.2	< 0.2 U
124-48-1	Dibromochloromethane	0.09	0.2	< 0.2 U
79-00-5	1,1,2-Trichloroethane	0.04	0.2	< 0.2 U
71-43-2	**Benzene**	**0.06**	**0.2**	**0.2 J**
10061-02-6	trans-1,3-Dichloropropene	0.06	0.2	< 0.2 U
110-75-8	2-Chloroethylvinylether	0.09	1.0	< 1.0 U
75-25-2	Bromoform	0.07	0.2	< 0.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.38	5.0	< 5.0 U
591-78-6	2-Hexanone	0.31	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.09	0.2	< 0.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.07	0.2	< 0.2 UR
108-88-3	**Toluene**	**0.06**	**0.2**	**0.4** R
108-90-7	Chlorobenzene	0.04	0.2	< 0.2 U
100-41-4	Ethylbenzene	0.09	0.2	< 0.2 U
100-42-5	Styrene	0.07	0.2	< 0.2 U
75-69-4	Trichlorofluoromethane	0.09	0.2	< 0.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.11	0.2	< 0.2 U
179601-23-1	m,p-Xylene	0.14	0.4	< 0.4 U
95-47-6	o-Xylene	0.06	0.2	< 0.2 U
95-50-1	1,2-Dichlorobenzene	0.06	0.2	< 0.2 U
541-73-1	1,3-Dichlorobenzene	0.04	0.2	< 0.2 U
106-46-7	1,4-Dichlorobenzene	0.06	0.2	< 0.2 U
107-02-8	Acrolein	0.29	5.0	< 5.0 U
74-88-4	Methyl Iodide	0.04	1.0	< 1.0 U
74-96-4	Bromoethane	0.09	0.2	< 0.2 U
107-13-1	Acrylonitrile	0.18	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.09	0.2	< 0.2 U
74-95-3	Dibromomethane	0.08	0.2	< 0.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.07	0.2	< 0.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.21	0.5	< 0.5 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-006**
 SAMPLE

Lab Sample ID: TM07F
LIMS ID: 11-19888
Matrix: Water
Date Analyzed: 09/15/11 17:08

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	123%
d8-Toluene	99.0%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	105%

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-006**
 DILUTION

Lab Sample ID: TM07F
LIMS ID: 11-19888
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/19/11 14:19

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.49	2.5	< 2.5 U DNR
74-83-9	Bromomethane	0.22	5.0	< 5.0 U
75-01-4	Vinyl Chloride	0.38	1.0	< 1.0 U
75-00-3	Chloroethane	0.76	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	2.5	< 2.5 U
67-64-1	Acetone	3.6	25	< 25 U
75-15-0	**Carbon Disulfide**	**0.44**	**1.0**	**0.7 J**
75-35-4	1,1-Dichloroethene	0.46	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	0.26	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	0.42	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	0.50	1.0	< 1.0 U
67-66-3	Chloroform	0.40	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	0.38	1.0	< 1.0 U
78-93-3	2-Butanone	4.0	25	< 25 U
71-55-6	1,1,1-Trichloroethane	0.44	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	0.38	1.0	< 1.0 U
108-05-4	Vinyl Acetate	0.34	5.0	< 5.0 U
75-27-4	Bromodichloromethane	0.26	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	0.46	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	0.29	1.0	< 1.0 U
79-01-6	Trichloroethene	0.38	1.0	< 1.0 U
124-48-1	Dibromochloromethane	0.45	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	0.18	1.0	< 1.0 U
71-43-2	Benzene	0.28	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	0.30	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	0.43	5.0	< 5.0 U
75-25-2	Bromoform	0.35	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	1.9	25	< 25 U
591-78-6	2-Hexanone	1.6	25	< 25 U
127-18-4	Tetrachloroethene	0.44	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	0.34	1.0	< 1.0 U
108-88-3	Toluene	0.28	1.0	< 1.0 U
108-90-7	Chlorobenzene	0.21	1.0	< 1.0 U DNR
100-41-4	Ethylbenzene	0.47	1.0	< 1.0 U
100-42-5	Styrene	0.33	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	0.46	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.54	1.0	< 1.0 U
179601-23-1	m,p-Xylene	0.72	2.0	< 2.0 U
95-47-6	o-Xylene	0.28	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	0.28	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.20	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.28	1.0	< 1.0 U
107-02-8	Acrolein	1.5	25	< 25 U
74-88-4	Methyl Iodide	0.20	5.0	< 5.0 U
74-96-4	Bromoethane	0.45	1.0	< 1.0 U
107-13-1	Acrylonitrile	0.92	5.0	< 5.0 U
563-58-6	1,1-Dichloropropene	0.46	1.0	< 1.0 U
74-95-3	Dibromomethane	0.40	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	0.34	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	1.1	2.5	< 2.5 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-006**
 DILUTION

Lab Sample ID: TM07F
LIMS ID: 11-19888
Matrix: Water
Date Analyzed: 09/19/11 14:19

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	1.1	2.5	< 2.5 U DNQ
110-57-6	trans-1,4-Dichloro-2-butene	1.2	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	0.32	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	0.29	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	0.56	2.5	< 2.5 U
106-93-4	Ethylene Dibromide	0.38	1.0	< 1.0 U
74-97-5	Bromochloromethane	0.34	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	0.42	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	0.10	1.0	< 1.0 U
98-82-8	Isopropylbenzene	0.31	1.0	< 1.0 U
103-65-1	n-Propylbenzene	0.40	1.0	< 1.0 U
108-86-1	Bromobenzene	0.26	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	0.21	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	0.36	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	0.30	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	0.38	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	0.38	1.0	< 1.0 U
104-51-8	n-Butylbenzene	0.54	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	0.50	2.5	< 2.5 U
91-20-3	Naphthalene	0.35	2.5	< 2.5 U
87-61-6	1,2,3-Trichlorobenzene	0.44	2.5	< 2.5 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.7%
d8-Toluene	104%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	101%

TM07:00045

2/20/12

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-007**
 SAMPLE

Lab Sample ID: TM07G
LIMS ID: 11-19889
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/15/11 17:34

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-007**
 SAMPLE

Lab Sample ID: TM07G
LIMS ID: 11-19889
Matrix: Water
Date Analyzed: 09/15/11 17:34

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	93.0%
d8-Toluene	97.4%
Bromofluorobenzene	96.0%
d4-1,2-Dichlorobenzene	109%

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-008**
 SAMPLE

Lab Sample ID: TM07H
LIMS ID: 11-19890
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/15/11 18:01

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	**Chloromethane**	**0.10**	**0.5**	**0.5** U
74-83-9	Bromomethane	0.04	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.08	0.2	< 0.2 U
75-00-3	Chloroethane	0.15	0.2	< 0.2 U
75-09-2	Methylene Chloride	0.39	0.5	< 0.5 U
67-64-1	**Acetone**	**0.72**	**5.0**	**5.5** U
75-15-0	**Carbon Disulfide**	**0.09**	**0.2**	**0.3**
75-35-4	1,1-Dichloroethene	0.09	0.2	< 0.2 U
75-34-3	1,1-Dichloroethane	0.05	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.08	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.10	0.2	< 0.2 U
67-66-3	Chloroform	0.08	0.2	< 0.2 U
107-06-2	1,2-Dichloroethane	0.08	0.2	< 0.2 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.09	0.2	< 0.2 U
56-23-5	Carbon Tetrachloride	0.08	0.2	< 0.2 U
108-05-4	Vinyl Acetate	0.07	1.0	< 1.0 U
75-27-4	Bromodichloromethane	0.05	0.2	< 0.2 U
78-87-5	1,2-Dichloropropane	0.09	0.2	< 0.2 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.2	< 0.2 U
79-01-6	Trichloroethene	0.08	0.2	< 0.2 U
124-48-1	Dibromochloromethane	0.09	0.2	< 0.2 U
79-00-5	1,1,2-Trichloroethane	0.04	0.2	< 0.2 U
71-43-2	**Benzene**	**0.06**	**0.2**	**0.2**
10061-02-6	trans-1,3-Dichloropropene	0.06	0.2	< 0.2 U
110-75-8	2-Chloroethylvinylether	0.09	1.0	< 1.0 U
75-25-2	Bromoform	0.07	0.2	< 0.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.38	5.0	< 5.0 U
591-78-6	2-Hexanone	0.31	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.09	0.2	< 0.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.07	0.2	< 0.2 UR
108-88-3	**Toluene**	**0.06**	**0.2**	**24**
108-90-7	Chlorobenzene	0.04	0.2	< 0.2 U
100-41-4	Ethylbenzene	0.09	0.2	< 0.2 U
100-42-5	Styrene	0.07	0.2	< 0.2 U
75-69-4	Trichlorofluoromethane	0.09	0.2	< 0.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.11	0.2	< 0.2 U
179601-23-1	**m,p-Xylene**	**0.14**	**0.4**	**0.2 J**
95-47-6	o-Xylene	0.06	0.2	< 0.2 U
95-50-1	1,2-Dichlorobenzene	0.06	0.2	< 0.2 U
541-73-1	1,3-Dichlorobenzene	0.04	0.2	< 0.2 U
106-46-7	1,4-Dichlorobenzene	0.06	0.2	< 0.2 U
107-02-8	Acrolein	0.29	5.0	< 5.0 U
74-88-4	Methyl Iodide	0.04	1.0	< 1.0 U
74-96-4	Bromoethane	0.09	0.2	< 0.2 U
107-13-1	Acrylonitrile	0.18	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.09	0.2	< 0.2 U
74-95-3	Dibromomethane	0.08	0.2	< 0.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.07	0.2	< 0.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.21	0.5	< 0.5 U

ANALYTICAL RESOURCES INCORPORATED

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

Sample ID: FRP-091311-008
SAMPLE

Lab Sample ID: TM07H
LIMS ID: 11-19890
Matrix: Water
Date Analyzed: 09/15/11 18:01

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.23	0.5	< 0.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.24	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.06	0.2	< 0.2 U
95-63-6	1,2,4-Trimethylbenzene	0.06	0.2	< 0.2 U
87-68-3	Hexachlorobutadiene	0.11	0.5	< 0.5 U
106-93-4	Ethylene Dibromide	0.08	0.2	< 0.2 U
74-97-5	Bromochloromethane	0.07	0.2	< 0.2 U
594-20-7	2,2-Dichloropropane	0.08	0.2	< 0.2 U
142-28-9	1,3-Dichloropropane	0.02	0.2	< 0.2 U
98-82-8	Isopropylbenzene	0.06	0.2	< 0.2 U
103-65-1	n-Propylbenzene	0.08	0.2	< 0.2 U
108-86-1	Bromobenzene	0.05	0.2	< 0.2 U
95-49-8	2-Chlorotoluene	0.04	0.2	< 0.2 U
106-43-4	4-Chlorotoluene	0.07	0.2	< 0.2 U
98-06-6	tert-Butylbenzene	0.06	0.2	< 0.2 U
135-98-8	sec-Butylbenzene	0.08	0.2	< 0.2 U
99-87-6	**4-Isopropyltoluene**	**0.08**	**0.2**	**0.3**
104-51-8	n-Butylbenzene	0.11	0.2	< 0.2 U
120-82-1	1,2,4-Trichlorobenzene	0.10	0.5	< 0.5 U
91-20-3	Naphthalene	0.07	0.5	< 0.5 U
87-61-6	1,2,3-Trichlorobenzene	0.09	0.5	< 0.5 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	120%
d8-Toluene	98.0%
Bromofluorobenzene	97.7%
d4-1,2-Dichlorobenzene	99.3%

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-009**
SAMPLE

Lab Sample ID: TM07I
LIMS ID: 11-19891
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/15/11 18:27

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	**Chloromethane**	**0.10**	**0.5**	~~**0.5 J**~~ 0.5U
74-83-9	Bromomethane	0.04	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.08	0.2	< 0.2 U
75-00-3	Chloroethane	0.15	0.2	< 0.2 U
75-09-2	Methylene Chloride	0.39	0.5	< 0.5 U
67-64-1	**Acetone**	**0.72**	**5.0**	~~**3.0 J**~~ 5.0U
75-15-0	Carbon Disulfide	0.09	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.09	0.2	< 0.2 U
75-34-3	1,1-Dichloroethane	0.05	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.08	0.2	< 0.2 U
156-59-2	**cis-1,2-Dichloroethene**	**0.10**	**0.2**	**0.2**
67-66-3	Chloroform	0.08	0.2	< 0.2 U
107-06-2	1,2-Dichloroethane	0.08	0.2	< 0.2 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.09	0.2	< 0.2 U
56-23-5	Carbon Tetrachloride	0.08	0.2	< 0.2 U
108-05-4	Vinyl Acetate	0.07	1.0	< 1.0 U
75-27-4	Bromodichloromethane	0.05	0.2	< 0.2 U
78-87-5	1,2-Dichloropropane	0.09	0.2	< 0.2 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.2	< 0.2 U
79-01-6	Trichloroethene	0.08	0.2	< 0.2 U
124-48-1	Dibromochloromethane	0.09	0.2	< 0.2 U
79-00-5	1,1,2-Trichloroethane	0.04	0.2	< 0.2 U
71-43-2	Benzene	0.06	0.2	< 0.2 U
10061-02-6	trans-1,3-Dichloropropene	0.06	0.2	< 0.2 U
110-75-8	2-Chloroethylvinylether	0.09	1.0	< 1.0 U
75-25-2	Bromoform	0.07	0.2	< 0.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.38	5.0	< 5.0 U
591-78-6	2-Hexanone	0.31	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.09	0.2	< 0.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.07	0.2	< 0.2 UR
108-88-3	Toluene	0.06	0.2	< 0.2 U
108-90-7	Chlorobenzene	0.04	0.2	< 0.2 U
100-41-4	Ethylbenzene	0.09	0.2	< 0.2 U
100-42-5	Styrene	0.07	0.2	< 0.2 U
75-69-4	Trichlorofluoromethane	0.09	0.2	< 0.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.11	0.2	< 0.2 U
179601-23-1	m,p-Xylene	0.14	0.4	< 0.4 U
95-47-6	o-Xylene	0.06	0.2	< 0.2 U
95-50-1	1,2-Dichlorobenzene	0.06	0.2	< 0.2 U
541-73-1	1,3-Dichlorobenzene	0.04	0.2	< 0.2 U
106-46-7	1,4-Dichlorobenzene	0.06	0.2	< 0.2 U
107-02-8	Acrolein	0.29	5.0	< 5.0 U
74-88-4	Methyl Iodide	0.04	1.0	< 1.0 U
74-96-4	Bromoethane	0.09	0.2	< 0.2 U
107-13-1	Acrylonitrile	0.18	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.09	0.2	< 0.2 U
74-95-3	Dibromomethane	0.08	0.2	< 0.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.07	0.2	< 0.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.21	0.5	< 0.5 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-009**
 SAMPLE

Lab Sample ID: TM07I
LIMS ID: 11-19891
Matrix: Water
Date Analyzed: 09/15/11 18:27

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	120%
d8-Toluene	96.4%
Bromofluorobenzene	96.2%
d4-1,2-Dichlorobenzene	99.3%

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-091311-010**
 SAMPLE

Lab Sample ID: TM07J
LIMS ID: 11-19892
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/15/11 18:54

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	MDL	RL	Result
74-87-3	**Chloromethane**	**0.10**	**0.5**	**0.5**
74-83-9	Bromomethane	0.04	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.08	0.2	< 0.2 U
75-00-3	Chloroethane	0.15	0.2	< 0.2 U
75-09-2	**Methylene Chloride**	**0.39**	**0.5**	**1.4 B**
67-64-1	**Acetone**	**0.72**	**5.0**	**6.0**
75-15-0	**Carbon Disulfide**	**0.09**	**0.2**	**0.2 J**
75-35-4	1,1-Dichloroethene	0.09	0.2	< 0.2 U
75-34-3	1,1-Dichloroethane	0.05	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.08	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.10	0.2	< 0.2 U
67-66-3	**Chloroform**	**0.08**	**0.2**	**1.9**
107-06-2	1,2-Dichloroethane	0.08	0.2	< 0.2 U
78-93-3	**2-Butanone**	**0.81**	**5.0**	**1.3 J**
71-55-6	1,1,1-Trichloroethane	0.09	0.2	< 0.2 U
56-23-5	Carbon Tetrachloride	0.08	0.2	< 0.2 U
108-05-4	Vinyl Acetate	0.07	1.0	< 1.0 U
75-27-4	Bromodichloromethane	0.05	0.2	< 0.2 U
78-87-5	1,2-Dichloropropane	0.09	0.2	< 0.2 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.2	< 0.2 U
79-01-6	Trichloroethene	0.08	0.2	< 0.2 U
124-48-1	Dibromochloromethane	0.09	0.2	< 0.2 U
79-00-5	1,1,2-Trichloroethane	0.04	0.2	< 0.2 U
71-43-2	Benzene	0.06	0.2	< 0.2 U
10061-02-6	trans-1,3-Dichloropropene	0.06	0.2	< 0.2 U
110-75-8	2-Chloroethylvinylether	0.09	1.0	< 1.0 U
75-25-2	Bromoform	0.07	0.2	< 0.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.38	5.0	< 5.0 U
591-78-6	2-Hexanone	0.31	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.09	0.2	< 0.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.07	0.2	< 0.2 U
108-88-3	**Toluene**	**0.06**	**0.2**	**0.7**
108-90-7	Chlorobenzene	0.04	0.2	< 0.2 U
100-41-4	Ethylbenzene	0.09	0.2	< 0.2 U
100-42-5	Styrene	0.07	0.2	< 0.2 U
75-69-4	Trichlorofluoromethane	0.09	0.2	< 0.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.11	0.2	< 0.2 U
179601-23-1	m,p-Xylene	0.14	0.4	< 0.4 U
95-47-6	o-Xylene	0.06	0.2	< 0.2 U
95-50-1	1,2-Dichlorobenzene	0.06	0.2	< 0.2 U
541-73-1	1,3-Dichlorobenzene	0.04	0.2	< 0.2 U
106-46-7	1,4-Dichlorobenzene	0.06	0.2	< 0.2 U
107-02-8	**Acrolein**	**0.29**	**5.0**	**1.6 J**
74-88-4	Methyl Iodide	0.04	1.0	< 1.0 U
74-96-4	Bromoethane	0.09	0.2	< 0.2 U
107-13-1	Acrylonitrile	0.18	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.09	0.2	< 0.2 U
74-95-3	Dibromomethane	0.08	0.2	< 0.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.07	0.2	< 0.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.21	0.5	< 0.5 U

ANALYTICAL RESOURCES INCORPORATED

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

Sample ID: FRP-091311-010
SAMPLE

Lab Sample ID: TM07J
LIMS ID: 11-19892
Matrix: Water
Date Analyzed: 09/15/11 18:54

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	116%
d8-Toluene	99.5%
Bromofluorobenzene	104%
d4-1,2-Dichlorobenzene	103%

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

ANALYTICAL RESOURCES INCORPORATED

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

Lab Sample ID: TM07K
LIMS ID: 11-19893
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/19/11 11:39

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

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

Sample ID: Trip Blank
SAMPLE

Lab Sample ID: TM07K
LIMS ID: 11-19893
Matrix: Water
Date Analyzed: 09/19/11 11:39

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	103%
Bromofluorobenzene	99.1%
d4-1,2-Dichlorobenzene	98.2%

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

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-091511	Method Blank	10	104%	99.3%	99.5%	101%	0
LCS-091511	Lab Control	10	102%	97.6%	101%	99.8%	0
LCSD-091511	Lab Control Dup	10	100%	95.4%	101%	99.6%	0
TM07A	FRP-091311-001	10	122%*	97.3%	103%	103%	1
TM07B	FRP-091311-002	10	118%	98.7%	102%	107%	0
MB-091911	Method Blank	10	101%	100%	100%	100%	0
LCS-091911	Lab Control	10	94.6%	100%	101%	99.7%	0
LCSD-091911	Lab Control Dup	10	98.2%	103%	101%	98.2%	0
TM07C	FRP-091311-003	10	120%*	102%	90.3%	94.6%	1
TM07CDL	FRP-091311-003	10	102%	99.6%	98.8%	99.5%	0
TM07D	FRP-091311-004	10	129%*	99.7%	105%	107%	1
TM07DDL	FRP-091311-004	10	100%	102%	101%	101%	0
TM07E	FRP-091311-005	10	124%*	101%	103%	106%	1
TM07EDL	FRP-091311-005	10	101%	101%	102%	98.9%	0
TM07F	FRP-091311-006	10	123%*	99.0%	103%	105%	1
TM07FDL	FRP-091311-006	10	98.7%	104%	101%	101%	0
TM07G	FRP-091311-007	10	93.0%	97.4%	96.0%	109%	0
TM07H	FRP-091311-008	10	120%	98.0%	97.7%	99.3%	0
TM07I	FRP-091311-009	10	120%	96.4%	96.2%	99.3%	0
TM07J	FRP-091311-010	10	116%	99.5%	104%	103%	0
TM07K	Trip Blank	10	100%	103%	99.1%	98.2%	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: 11-19883 to 11-19893

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-091511**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-091511
LIMS ID: 11-19883
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/PKC
LCSD: NT3/PKC
Date Analyzed LCS: 09/15/11 09:54
LCSD: 09/15/11 10:21

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%	9.6	10.0	96.0%	0.0%
Bromomethane	8.2	10.0	82.0%	8.1	10.0	81.0%	1.2%
Vinyl Chloride	8.8	10.0	88.0%	9.3	10.0	93.0%	5.5%
Chloroethane	8.5	10.0	85.0%	8.5	10.0	85.0%	0.0%
Methylene Chloride	9.4	10.0	94.0%	9.7	10.0	97.0%	3.1%
Acetone	49.0	50.0	98.0%	47.7	50.0	95.4%	2.7%
Carbon Disulfide	9.1	10.0	91.0%	9.3	10.0	93.0%	2.2%
1,1-Dichloroethene	9.0	10.0	90.0%	9.3	10.0	93.0%	3.3%
1,1-Dichloroethane	9.4	10.0	94.0%	9.6	10.0	96.0%	2.1%
trans-1,2-Dichloroethene	9.2	10.0	92.0%	9.3	10.0	93.0%	1.1%
cis-1,2-Dichloroethene	9.3	10.0	93.0%	9.8	10.0	98.0%	5.2%
Chloroform	9.7	10.0	97.0%	10.0	10.0	100%	3.0%
1,2-Dichloroethane	9.9	10.0	99.0%	9.9	10.0	99.0%	0.0%
2-Butanone	49.2	50.0	98.4%	52.4	50.0	105%	6.3%
1,1,1-Trichloroethane	9.3	10.0	93.0%	9.5	10.0	95.0%	2.1%
Carbon Tetrachloride	9.6	10.0	96.0%	9.8	10.0	98.0%	2.1%
Vinyl Acetate	10.1	10.0	101%	10.2	10.0	102%	1.0%
Bromodichloromethane	9.9	10.0	99.0%	10.1	10.0	101%	2.0%
1,2-Dichloropropane	9.8	10.0	98.0%	9.8	10.0	98.0%	0.0%
cis-1,3-Dichloropropene	10.1	10.0	101%	10.0	10.0	100%	1.0%
Trichloroethene	9.6	10.0	96.0%	9.8	10.0	98.0%	2.1%
Dibromochloromethane	10.4	10.0	104%	10.1	10.0	101%	2.9%
1,1,2-Trichloroethane	9.6	10.0	96.0%	9.9	10.0	99.0%	3.1%
Benzene	10.1	10.0	101%	10.0	10.0	100%	1.0%
trans-1,3-Dichloropropene	10.1	10.0	101%	9.9	10.0	99.0%	2.0%
2-Chloroethylvinylether	9.7	10.0	97.0%	9.4	10.0	94.0%	3.1%
Bromoform	10.5	10.0	105%	10.4	10.0	104%	1.0%
4-Methyl-2-Pentanone (MIBK)	50.6	50.0	101%	50.6	50.0	101%	0.0%
2-Hexanone	52.0	50.0	104%	52.3	50.0	105%	0.6%
Tetrachloroethene	9.5	10.0	95.0%	9.6	10.0	96.0%	1.0%
1,1,2,2-Tetrachloroethane	9.8	10.0	98.0%	9.9	10.0	99.0%	1.0%
Toluene	9.6	10.0	96.0%	9.7	10.0	97.0%	1.0%
Chlorobenzene	9.8	10.0	98.0%	9.9	10.0	99.0%	1.0%
Ethylbenzene	10.0	10.0	100%	10.0	10.0	100%	0.0%
Styrene	9.8	10.0	98.0%	10.1	10.0	101%	3.0%
Trichlorofluoromethane	9.1	10.0	91.0%	9.4	10.0	94.0%	3.2%
1,1,2-Trichloro-1,2,2-trifluoroetha	9.1	10.0	91.0%	9.5	10.0	95.0%	4.3%
m,p-Xylene	20.0	20.0	100%	20.3	20.0	102%	1.5%
o-Xylene	9.8	10.0	98.0%	10.0	10.0	100%	2.0%
1,2-Dichlorobenzene	9.9	10.0	99.0%	9.8	10.0	98.0%	1.0%
1,3-Dichlorobenzene	9.7	10.0	97.0%	9.7	10.0	97.0%	0.0%
1,4-Dichlorobenzene	9.8	10.0	98.0%	9.8	10.0	98.0%	0.0%
Acrolein	49.7	50.0	99.4%	47.6	50.0	95.2%	4.3%
Methyl Iodide	9.2	10.0	92.0%	9.6	10.0	96.0%	4.3%
Bromoethane	9.9	10.0	99.0%	10.2	10.0	102%	3.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-091511**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-091511
LIMS ID: 11-19883
Matrix: Water

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Acrylonitrile	10.3	10.0	103%	9.9	10.0	99.0%	4.0%
1,1-Dichloropropene	10.1	10.0	101%	10.1	10.0	101%	0.0%
Dibromomethane	10.0	10.0	100%	9.8	10.0	98.0%	2.0%
1,1,1,2-Tetrachloroethane	10.0	10.0	100%	10.0	10.0	100%	0.0%
1,2-Dibromo-3-chloropropane	9.6	10.0	96.0%	9.9	10.0	99.0%	3.1%
1,2,3-Trichloropropane	10.4	10.0	104%	9.6	10.0	96.0%	8.0%
trans-1,4-Dichloro-2-butene	10.0	10.0	100%	9.4	10.0	94.0%	6.2%
1,3,5-Trimethylbenzene	10.2	10.0	102%	10.2	10.0	102%	0.0%
1,2,4-Trimethylbenzene	10.2	10.0	102%	10.1	10.0	101%	1.0%
Hexachlorobutadiene	11.5 B	10.0	115%	10.0 B	10.0	100%	14.0%
Ethylene Dibromide	9.7	10.0	97.0%	10.0	10.0	100%	3.0%
Bromochloromethane	9.8	10.0	98.0%	10.2	10.0	102%	4.0%
2,2-Dichloropropane	9.3	10.0	93.0%	9.5	10.0	95.0%	2.1%
1,3-Dichloropropane	10.1	10.0	101%	10.4	10.0	104%	2.9%
Isopropylbenzene	10.0	10.0	100%	10.2	10.0	102%	2.0%
n-Propylbenzene	10.2	10.0	102%	10.2	10.0	102%	0.0%
Bromobenzene	10.0	10.0	100%	9.9	10.0	99.0%	1.0%
2-Chlorotoluene	9.9	10.0	99.0%	9.9	10.0	99.0%	0.0%
4-Chlorotoluene	10.1	10.0	101%	10.1	10.0	101%	0.0%
tert-Butylbenzene	10.1	10.0	101%	10.1	10.0	101%	0.0%
sec-Butylbenzene	10.2	10.0	102%	10.2	10.0	102%	0.0%
4-Isopropyltoluene	10.1	10.0	101%	10.1	10.0	101%	0.0%
n-Butylbenzene	10.5	10.0	105%	10.3	10.0	103%	1.9%
1,2,4-Trichlorobenzene	10.7 B	10.0	107%	10.3 B	10.0	103%	3.8%
Naphthalene	10.4 B	10.0	104%	10.4 B	10.0	104%	0.0%
1,2,3-Trichlorobenzene	10.9 B	10.0	109%	10.2 B	10.0	102%	6.6%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	102%	100%
d8-Toluene	97.6%	95.4%
Bromofluorobenzene	101%	101%
d4-1,2-Dichlorobenzene	99.8%	99.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-091911**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-091911
LIMS ID: 11-19885
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/PKC
LCSD: NT3/PKC
Date Analyzed LCS: 09/19/11 10:12
LCSD: 09/19/11 10:39

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	9.9	10.0	99.0%	9.8	10.0	98.0%	1.0%
Bromomethane	11.4	10.0	114%	11.1	10.0	111%	2.7%
Vinyl Chloride	10.6	10.0	106%	10.1	10.0	101%	4.8%
Chloroethane	9.7	10.0	97.0%	9.7	10.0	97.0%	0.0%
Methylene Chloride	9.5	10.0	95.0%	9.7	10.0	97.0%	2.1%
Acetone	47.8	50.0	95.6%	48.2	50.0	96.4%	0.8%
Carbon Disulfide	10.8	10.0	108%	10.7	10.0	107%	0.9%
1,1-Dichloroethene	9.8	10.0	98.0%	10.0	10.0	100%	2.0%
1,1-Dichloroethane	10.0	10.0	100%	10.3	10.0	103%	3.0%
trans-1,2-Dichloroethene	10.3	10.0	103%	10.1	10.0	101%	2.0%
cis-1,2-Dichloroethene	10.4	10.0	104%	10.5	10.0	105%	1.0%
Chloroform	10.0	10.0	100%	10.0	10.0	100%	0.0%
1,2-Dichloroethane	9.3	10.0	93.0%	9.7	10.0	97.0%	4.2%
2-Butanone	47.0	50.0	94.0%	48.0	50.0	96.0%	2.1%
1,1,1-Trichloroethane	10.5	10.0	105%	10.3	10.0	103%	1.9%
Carbon Tetrachloride	10.7	10.0	107%	11.1	10.0	111%	3.7%
Vinyl Acetate	9.9	10.0	99.0%	9.9	10.0	99.0%	0.0%
Bromodichloromethane	10.3	10.0	103%	10.8	10.0	108%	4.7%
1,2-Dichloropropane	10.0	10.0	100%	10.2	10.0	102%	2.0%
cis-1,3-Dichloropropene	10.3	10.0	103%	10.7	10.0	107%	3.8%
Trichloroethene	9.8	10.0	98.0%	10.3	10.0	103%	5.0%
Dibromochloromethane	10.3	10.0	103%	10.9	10.0	109%	5.7%
1,1,2-Trichloroethane	9.5	10.0	95.0%	9.9	10.0	99.0%	4.1%
Benzene	10.0	10.0	100%	10.4	10.0	104%	3.9%
trans-1,3-Dichloropropene	10.3	10.0	103%	10.9	10.0	109%	5.7%
2-Chloroethylvinylether	10.0	10.0	100%	10.2	10.0	102%	2.0%
Bromoform	10.8	10.0	108%	10.5	10.0	105%	2.8%
4-Methyl-2-Pentanone (MIBK)	48.8	50.0	97.6%	51.1	50.0	102%	4.6%
2-Hexanone	46.5	50.0	93.0%	47.4	50.0	94.8%	1.9%
Tetrachloroethene	9.8	10.0	98.0%	10.1	10.0	101%	3.0%
1,1,2,2-Tetrachloroethane	9.9	10.0	99.0%	9.9	10.0	99.0%	0.0%
Toluene	9.9	10.0	99.0%	10.2	10.0	102%	3.0%
Chlorobenzene	9.7	10.0	97.0%	9.9	10.0	99.0%	2.0%
Ethylbenzene	9.9	10.0	99.0%	10.2	10.0	102%	3.0%
Styrene	10.3	10.0	103%	10.5	10.0	105%	1.9%
Trichlorofluoromethane	11.4	10.0	114%	11.1	10.0	111%	2.7%
1,1,2-Trichloro-1,2,2-trifluoroetha	10.8	10.0	108%	10.6	10.0	106%	1.9%
m,p-Xylene	20.1	20.0	100%	20.4	20.0	102%	1.5%
o-Xylene	10.0	10.0	100%	10.2	10.0	102%	2.0%
1,2-Dichlorobenzene	9.6	10.0	96.0%	9.8	10.0	98.0%	2.1%
1,3-Dichlorobenzene	9.9	10.0	99.0%	9.8	10.0	98.0%	1.0%
1,4-Dichlorobenzene	9.8	10.0	98.0%	9.8	10.0	98.0%	0.0%
Acrolein	34.9 Q	50.0	69.8%	35.2 Q	50.0	70.4%	0.9%
Methyl Iodide	10.0	10.0	100%	10.0	10.0	100%	0.0%
Bromoethane	9.9	10.0	99.0%	9.8	10.0	98.0%	1.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-091911**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-091911
LIMS ID: 11-19885
Matrix: Water

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Acrylonitrile	9.5	10.0	95.0%	9.8	10.0	98.0%	3.1%
1,1-Dichloropropene	10.2	10.0	102%	10.4	10.0	104%	1.9%
Dibromomethane	9.7	10.0	97.0%	9.8	10.0	98.0%	1.0%
1,1,1,2-Tetrachloroethane	10.2	10.0	102%	10.6	10.0	106%	3.8%
1,2-Dibromo-3-chloropropane	10.5	10.0	105%	10.0	10.0	100%	4.9%
1,2,3-Trichloropropane	8.9	10.0	89.0%	9.1	10.0	91.0%	2.2%
trans-1,4-Dichloro-2-butene	10.5	10.0	105%	10.1	10.0	101%	3.9%
1,3,5-Trimethylbenzene	10.5	10.0	105%	10.4	10.0	104%	1.0%
1,2,4-Trimethylbenzene	10.5	10.0	105%	10.4	10.0	104%	1.0%
Hexachlorobutadiene	10.3 B	10.0	103%	10.4 B	10.0	104%	1.0%
Ethylene Dibromide	9.5	10.0	95.0%	10.1	10.0	101%	6.1%
Bromochloromethane	9.7	10.0	97.0%	9.4	10.0	94.0%	3.1%
2,2-Dichloropropane	11.1	10.0	111%	10.9	10.0	109%	1.8%
1,3-Dichloropropane	9.6	10.0	96.0%	9.6	10.0	96.0%	0.0%
Isopropylbenzene	10.4	10.0	104%	10.2	10.0	102%	1.9%
n-Propylbenzene	10.7	10.0	107%	10.6	10.0	106%	0.9%
Bromobenzene	10.0	10.0	100%	9.7	10.0	97.0%	3.0%
2-Chlorotoluene	10.1	10.0	101%	9.8	10.0	98.0%	3.0%
4-Chlorotoluene	10.2	10.0	102%	9.9	10.0	99.0%	3.0%
tert-Butylbenzene	10.2	10.0	102%	10.1	10.0	101%	1.0%
sec-Butylbenzene	10.6	10.0	106%	10.4	10.0	104%	1.9%
4-Isopropyltoluene	10.7	10.0	107%	10.6	10.0	106%	0.9%
n-Butylbenzene	10.8 B	10.0	108%	10.8 B	10.0	108%	0.0%
1,2,4-Trichlorobenzene	9.7 B	10.0	97.0%	9.7 B	10.0	97.0%	0.0%
Naphthalene	9.3 B	10.0	93.0%	9.8 B	10.0	98.0%	5.2%
1,2,3-Trichlorobenzene	9.1 QB	10.0	91.0%	10.0 QB	10.0	100%	9.4%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	94.6%	98.2%
d8-Toluene	100%	103%
Bromofluorobenzene	101%	101%
d4-1,2-Dichlorobenzene	99.7%	98.2%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0915

Lab Name: ANALYTICAL RESOURCES INC

Client: AMEC GEOMATRIX

ARI Job No: TM07

Project: FRP 2011 SHORELINE INVE

Lab File ID: MB0915

Lab Sample ID: MB0915

Date Analyzed: 09/15/11

Time Analyzed: 1048

Instrument ID: NT3

Heated Purge: (Y/N) N

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS0915	LCS0915	LCS0915	0954
02	LCS0915	LCS0915	LCS0915A	1021
03	FRP-091311-0	TM07A	TM07A	1455
04	FRP-091311-0	TM07B	TM07B	1522
05	FRP-091311-0	TM07C	TM07C	1548
06	FRP-091311-0	TM07D	TM07D	1615
07	FRP-091311-0	TM07E	TM07E	1641
08	FRP-091311-0	TM07F	TM07F	1708
09	FRP-091311-0	TM07G	TM07G	1734
10	FRP-091311-0	TM07H	TM07H	1801
11	FRP-091311-0	TM07I	TM07I	1827
12	FRP-091311-0	TM07J	TM07J	1854
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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-091511**
 METHOD BLANK

Lab Sample ID: MB-091511
LIMS ID: 11-19883
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/15/11 10:48

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-091511**
 METHOD BLANK

Lab Sample ID: MB-091511
LIMS ID: 11-19883
Matrix: Water
Date Analyzed: 09/15/11 10:48

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.23	0.5	< 0.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.24	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.06	0.2	< 0.2 U
95-63-6	1,2,4-Trimethylbenzene	0.06	0.2	< 0.2 U
87-68-3	**Hexachlorobutadiene**	**0.11**	**0.5**	**0.3 J**
106-93-4	Ethylene Dibromide	0.08	0.2	< 0.2 U
74-97-5	Bromochloromethane	0.07	0.2	< 0.2 U
594-20-7	2,2-Dichloropropane	0.08	0.2	< 0.2 U
142-28-9	1,3-Dichloropropane	0.02	0.2	< 0.2 U
98-82-8	Isopropylbenzene	0.06	0.2	< 0.2 U
103-65-1	n-Propylbenzene	0.08	0.2	< 0.2 U
108-86-1	Bromobenzene	0.05	0.2	< 0.2 U
95-49-8	2-Chlorotoluene	0.04	0.2	< 0.2 U
106-43-4	4-Chlorotoluene	0.07	0.2	< 0.2 U
98-06-6	tert-Butylbenzene	0.06	0.2	< 0.2 U
135-98-8	sec-Butylbenzene	0.08	0.2	< 0.2 U
99-87-6	4-Isopropyltoluene	0.08	0.2	< 0.2 U
104-51-8	n-Butylbenzene	0.11	0.2	< 0.2 U
120-82-1	**1,2,4-Trichlorobenzene**	**0.10**	**0.5**	**0.2 J**
91-20-3	**Naphthalene**	**0.07**	**0.5**	**0.3 J**
87-61-6	**1,2,3-Trichlorobenzene**	**0.09**	**0.5**	**0.3 J**

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	99.3%
Bromofluorobenzene	99.5%
d4-1,2-Dichlorobenzene	101%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0919

Lab Name: ANALYTICAL RESOURCES INC

Client: AMEC GEOMATRIX

ARI Job No: TM07

Project: FRP 2011 SHORELINE INVE

Lab File ID: MB0919

Lab Sample ID: MB0919

Date Analyzed: 09/19/11

Time Analyzed: 1106

Instrument ID: NT3

Heated Purge: (Y/N) N

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS0919	LCS0919	LCS0919	1012
02	LCS0919	LCS0919	LCS0919A	1039
03	TRIP BLANK	TM07K	TM07K2	1139
04	FRP-091311-0	TM07C	TM07C2	1258
05	FRP-091311-0	TM07D	TM07D2	1325
06	FRP-091311-0	TM07E	TM07E2	1352
07	FRP-091311-0	TM07F	TM07F2	1419
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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-091911**
 METHOD BLANK

Lab Sample ID: MB-091911
LIMS ID: 11-19885
Matrix: Water
Data Release Authorized:
Reported: 09/20/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/PKC
Date Analyzed: 09/19/11 11:06

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-091911**

METHOD BLANK

Lab Sample ID: MB-091911
LIMS ID: 11-19885
Matrix: Water
Date Analyzed: 09/19/11 11:06

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

CAS Number	Analyte	MDL	RL	Result
96-18-4	1,2,3-Trichloropropane	0.23	0.5	< 0.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.24	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.06	0.2	< 0.2 U
95-63-6	1,2,4-Trimethylbenzene	0.06	0.2	< 0.2 U
87-68-3	**Hexachlorobutadiene**	**0.11**	**0.5**	**0.3 J**
106-93-4	Ethylene Dibromide	0.08	0.2	< 0.2 U
74-97-5	Bromochloromethane	0.07	0.2	< 0.2 U
594-20-7	2,2-Dichloropropane	0.08	0.2	< 0.2 U
142-28-9	1,3-Dichloropropane	0.02	0.2	< 0.2 U
98-82-8	Isopropylbenzene	0.06	0.2	< 0.2 U
103-65-1	n-Propylbenzene	0.08	0.2	< 0.2 U
108-86-1	Bromobenzene	0.05	0.2	< 0.2 U
95-49-8	2-Chlorotoluene	0.04	0.2	< 0.2 U
106-43-4	4-Chlorotoluene	0.07	0.2	< 0.2 U
98-06-6	tert-Butylbenzene	0.06	0.2	< 0.2 U
135-98-8	sec-Butylbenzene	0.08	0.2	< 0.2 U
99-87-6	4-Isopropyltoluene	0.08	0.2	< 0.2 U
104-51-8	**n-Butylbenzene**	**0.11**	**0.2**	**0.1 J**
120-82-1	**1,2,4-Trichlorobenzene**	**0.10**	**0.5**	**0.2 J**
91-20-3	**Naphthalene**	**0.07**	**0.5**	**0.3 J**
87-61-6	**1,2,3-Trichlorobenzene**	**0.09**	**0.5**	**0.3 JQ**

Reported in µg/L (ppb)

Volatile Surrogate Recovery

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

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP 2011 SHORELINE INVESTIGATION SDG No.: TM07

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

Instrument ID: NT3 BFB Injection Time: 1058

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

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

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

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

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

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP 2011 SHORELINE INVESTIGATION SDG No.: TM07

Lab File ID: BFB0915 BFB Injection Date: 09/15/11

Instrument ID: NT3 BFB Injection Time: 0854

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

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	16.1
75	30.0 - 66.0% of mass 95	47.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.8
173	Less than 2.0% of mass 174	0.7 (0.9)1
174	50.0 - 101.0% of mass 95	80.4
175	4.0 - 9.0% of mass 174	5.5 (6.8)1
176	93.0 - 101.0% of mass 174	76.8 (95.5)1
177	5.0 - 9.0% of mass 176	4.6 (5.9)2

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

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CC0915	CC0915	CC0915	09/15/11	0928
02	LCS0915	LCS0915	LCS0915	09/15/11	0954
03	LCS0915	LCS0915	LCS0915A	09/15/11	1021
04	MB0915	MB0915	MB0915	09/15/11	1048
05	FRP-091311-001	TM07A	TM07A	09/15/11	1455
06	FRP-091311-002	TM07B	TM07B	09/15/11	1522
07	FRP-091311-003	TM07C	TM07C	09/15/11	1548
08	FRP-091311-004	TM07D	TM07D	09/15/11	1615
09	FRP-091311-005	TM07E	TM07E	09/15/11	1641
10	FRP-091311-006	TM07F	TM07F	09/15/11	1708
11	FRP-091311-007	TM07G	TM07G	09/15/11	1734
12	FRP-091311-008	TM07H	TM07H	09/15/11	1801
13	FRP-091311-009	TM07I	TM07I	09/15/11	1827
14	FRP-091311-010	TM07J	TM07J	09/15/11	1854
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FORM V VOA OLM3.2M

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP 2011 SHORELINE INVESTIGATION SDG No.: TM07

Lab File ID: BFB0916B BFB Injection Date: 09/16/11

Instrument ID: NT3 BFB Injection Time: 1134

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

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	16.6
75	30.0 - 66.0% of mass 95	48.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.5 (0.6)1
174	50.0 - 101.0% of mass 95	87.7
175	4.0 - 9.0% of mass 174	6.4 (7.3)1
176	93.0 - 101.0% of mass 174	85.2 (97.2)1
177	5.0 - 9.0% of mass 176	5.4 (6.4)2

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

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0.2	VSTD0.2	00_20916	09/16/11	1334
02	VSTD0.5	VSTD0.5	00_50916	09/16/11	1401
03	VSTD01	VSTD01	01_00916	09/16/11	1428
04	VSTD02	VSTD02	02_00916	09/16/11	1455
05	VSTD10	VSTD10	10_00916	09/16/11	1521
06	VSTD20	VSTD20	20_00916	09/16/11	1548
07	VSTD40	VSTD40	40_00916	09/16/11	1614
08	VSTD80	VSTD80	80_00916	09/16/11	1641
09	ICV0916	ICV0916	ICV0916A	09/16/11	1706
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FORM V VOA OLM3.2M

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP 2011 SHORELINE INVESTIGATION SDG No.: TM07

Lab File ID: BFB0919 BFB Injection Date: 09/19/11

Instrument ID: NT3 BFB Injection Time: 0901

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

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	15.9
75	30.0 - 66.0% of mass 95	47.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.4 (0.5)1
174	50.0 - 101.0% of mass 95	77.8
175	4.0 - 9.0% of mass 174	5.8 (7.5)1
176	93.0 - 101.0% of mass 174	77.2 (99.2)1
177	5.0 - 9.0% of mass 176	5.0 (6.4)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	CC0919	CC0919	CC0919	09/19/11	0942
02	LCS0919	LCS0919	LCS0919	09/19/11	1012
03	LCS0919	LCS0919	LCS0919A	09/19/11	1039
04	MB0919	MB0919	MB0919	09/19/11	1106
05	TRIP BLANK	TM07K	TM07K2	09/19/11	1139
06	FRP-091311-003	TM07C	TM07C2	09/19/11	1258
07	FRP-091311-004	TM07D	TM07D2	09/19/11	1325
08	FRP-091311-005	TM07E	TM07E2	09/19/11	1352
09	FRP-091311-006	TM07F	TM07F2	09/19/11	1419
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FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TM07 Project: FRP 2011 SHORELINE INVESTIG

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

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

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

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TM07 Project: FRP 2011 SHORELINE INVESTIG

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

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

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

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TM07 Project: FRP 2011 SHORELINE INVESTIG

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

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

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

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TM07 Project: FRP 2011 SHORELINE INVESTIG

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

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

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

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TM07 Project: FRP 2011 SHORELINE INVESTIG

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

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

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

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TM07 Project: FRP 2011 SHORELINE INVESTIG

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

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

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

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC | Client: AMEC GEOMATRIX

ARI Job No: TM07 | Project: FRP 2011 SHORELINE INVESTIG

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

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

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

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC | Client: AMEC GEOMATRIX

ARI Job No: TM07 | Project: FRP 2011 SHORELINE INVESTIG

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

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

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

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TM07 — Project: FRP 2011 SHORELINE INVESTIG

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

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

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

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TM07 Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 Calibration Date: 09/16/11

LAB FILE ID: RF0.2: 00_20916 RF0.5: 00_50916 RF1: 01_00916
RF2: 02_00916 RF10: 10_00916

COMPOUND	RF0.2	RF0.5	RF1	RF2	RF10
Chloromethane	0.678	0.576	0.577	0.510	0.546
Vinyl Chloride	0.703	0.616	0.667	0.572	0.645
Bromomethane		0.270	0.290	0.268	0.323
Chloroethane	0.427	0.403	0.419	0.336	0.372
Trichlorofluoromethane	0.687	0.660	0.776	0.646	0.803
Acrolein		0.029	0.031	0.026	0.028
112Trichloro122Trifluoroetha	0.501	0.546	0.546	0.482	0.539
Acetone			0.059	0.046	0.048
1,1-Dichloroethene	0.551	0.502	0.493	0.440	0.469
Bromoethane	0.443	0.363	0.424	0.360	0.387
Iodomethane		0.870	0.854	0.716	0.839
Methylene Chloride		0.579	0.560	0.453	0.478
Acrylonitrile			0.062	0.046	0.065
Carbon Disulfide	1.495	1.417	1.477	1.311	1.488
Trans-1,2-Dichloroethene	0.633	0.517	0.530	0.480	0.538
Vinyl Acetate			0.400	0.330	0.390
1,1-Dichloroethane	0.985	0.816	0.889	0.761	0.845
2-Butanone		0.079	0.082	0.068	0.073
2,2-Dichloropropane	0.709	0.710	0.715	0.602	0.714
Cis-1,2-Dichloroethene	0.505	0.543	0.578	0.482	0.560
Chloroform	0.894	0.935	0.974	0.818	0.911
Bromochloromethane	0.228	0.251	0.237	0.208	0.231
1,1,1-Trichloroethane	0.793	0.807	0.880	0.768	0.874
1,1-Dichloropropene	0.426	0.471	0.477	0.426	0.468
Carbon Tetrachloride	0.404	0.406	0.408	0.363	0.451
1,2-Dichloroethane	0.333	0.325	0.341	0.291	0.310
Benzene	1.293	1.257	1.310	1.164	1.271
Trichloroethene	0.358	0.365	0.374	0.336	0.376
1,2-Dichloropropane	0.256	0.262	0.269	0.243	0.270
Bromodichloromethane	0.289	0.324	0.324	0.309	0.378
Dibromomethane	0.112	0.146	0.124	0.125	0.134
2-Chloroethyl Vinyl Ether		0.097	0.092	0.088	0.099
4-Methyl-2-Pentanone		0.114	0.109	0.106	0.118
Cis 1,3-dichloropropene	0.342	0.396	0.402	0.363	0.430
Toluene	0.912	0.871	0.928	0.796	0.881
Trans 1,3-Dichloropropene	0.338	0.317	0.308	0.292	0.351
2-Hexanone		0.079	0.071	0.069	0.078

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TM07 Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 Calibration Date: 09/16/11

LAB FILE ID: RF0.2: 00_20916 RF0.5: 00_50916 RF1: 01_00916
RF2: 02_00916 RF10: 10_00916

COMPOUND	RF0.2	RF0.5	RF1	RF2	RF10
1,1,2-Trichloroethane	0.199	0.205	0.207	0.181	0.205
1,3-Dichloropropane	0.309	0.322	0.307	0.280	0.324
Tetrachloroethene	0.371	0.357	0.375	0.356	0.384
Chlorodibromomethane	0.146	0.202	0.195	0.170	0.247
1,2-Dibromoethane	0.155	0.198	0.209	0.188	0.210
Chlorobenzene	0.946	0.994	1.024	0.909	1.014
Ethyl Benzene	1.756	1.743	1.760	1.570	1.764
1,1,1,2-Tetrachloroethane	0.240	0.285	0.287	0.255	0.338
m,p-xylene	0.723	0.645	0.674	0.627	0.712
o-Xylene	0.577	0.670	0.696	0.638	0.711
Styrene	0.880	0.914	1.036	0.976	1.154
Bromoform	0.159	0.150	0.160	0.142	0.210
1,1,2,2-Tetrachloroethane	0.293	0.376	0.366	0.328	0.364
1,2,3-Trichloropropane		0.124	0.116	0.114	0.123
Trans-1,4-Dichloro 2-Butene			0.089	0.078	0.089
N-Propyl Benzene	3.213	3.224	3.366	3.090	3.363
Bromobenzene	0.660	0.687	0.667	0.631	0.685
Isopropyl Benzene	2.757	3.002	2.960	2.673	2.958
2-Chloro Toluene	2.356	2.178	2.400	1.956	2.122
4-Chloro Toluene	2.283	2.311	2.203	2.033	2.177
T-Butyl Benzene	2.240	2.388	2.326	2.111	2.324
1,3,5-Trimethyl Benzene	2.628	2.597	2.555	2.366	2.661
1,2,4-Trimethylbenzene	2.474	2.595	2.714	2.485	2.730
S-Butyl Benzene	3.164	3.426	3.439	3.078	3.372
4-Isopropyl Toluene	2.732	2.775	2.844	2.638	2.922
1,3-Dichlorobenzene	1.519	1.503	1.555	1.333	1.497
1,4-Dichlorobenzene	1.577	1.536	1.548	1.373	1.479
N-Butyl Benzene	2.460	2.474	2.442	2.318	2.587
1,2-Dichlorobenzene	1.300	1.400	1.382	1.214	1.306
1,2-Dibromo 3-Chloropropane		0.046	0.055	0.046	0.062
1,2,4-Trichlorobenzene		0.743	0.742	0.668	0.762
Hexachloro 1,3-Butadiene		0.397	0.422	0.391	0.415
Naphthalene		0.973	0.982	0.866	1.090
1,2,3-Trichlorobenzene		0.437	0.418	0.383	0.464
Dichlorodifluoromethane	0.762	0.762	0.729	0.692	0.738
Methyl tert butyl ether	1.051	0.988	0.973	0.888	1.010

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TM07 Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 Calibration Date: 09/16/11

LAB FILE ID: RF0.2: 00_20916 RF0.5: 00_50916 RF1: 01_00916
RF2: 02_00916 RF10: 10_00916

COMPOUND	RF0.2	RF0.5	RF1	RF2	RF10
d4-1,2-Dichloroethane	0.404	0.404	0.431	0.403	0.414
d8-Toluene	1.247	1.267	1.262	1.244	1.247
4-Bromofluorobenzene	0.534	0.521	0.528	0.537	0.540
d4-1,2-Dichlorobenzene	0.864	0.867	0.886	0.865	0.862
Dibromofluoromethane	0.448	0.439	0.464	0.443	0.463

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TM07 Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 Calibration Date: 09/16/11

LAB FILE ID: RF20: 20_00916 RF40: 40_00916 RF80: 80_00916

COMPOUND	RF20	RF40	RF80
Chloromethane	0.541	0.525	0.506
Vinyl Chloride	0.645	0.630	0.629
Bromomethane	0.317	0.336	0.311
Chloroethane	0.361	0.378	0.351
Trichlorofluoromethane	0.862	0.818	0.777
Acrolein	0.029	0.030	0.030
112Trichloro122Trifluoroetha	0.542	0.515	0.515
Acetone	0.047	0.047	0.048
1,1-Dichloroethene	0.478	0.471	0.468
Bromoethane	0.402	0.392	0.388
Iodomethane	0.836	0.812	0.793
Methylene Chloride	0.484	0.473	0.467
Acrylonitrile	0.065	0.066	0.066
Carbon Disulfide	1.526	1.488	1.462
Trans-1,2-Dichloroethene	0.541	0.538	0.528
Vinyl Acetate	0.393	0.419	0.427
1,1-Dichloroethane	0.849	0.843	0.835
2-Butanone	0.072	0.078	0.076
2,2-Dichloropropane	0.697	0.668	0.646
Cis-1,2-Dichloroethene	0.552	0.554	0.544
Chloroform	0.916	0.901	0.878
Bromochloromethane	0.234	0.226	0.227
1,1,1-Trichloroethane	0.878	0.863	0.840
1,1-Dichloropropene	0.469	0.462	0.448
Carbon Tetrachloride	0.472	0.456	0.438
1,2-Dichloroethane	0.309	0.310	0.295
Benzene	1.280	1.262	1.187
Trichloroethene	0.377	0.372	0.364
1,2-Dichloropropane	0.268	0.273	0.269
Bromodichloromethane	0.375	0.378	0.370
Dibromomethane	0.132	0.132	0.131
2-Chloroethyl Vinyl Ether	0.101	0.107	0.107
4-Methyl-2-Pentanone	0.119	0.124	0.120
Cis 1,3-dichloropropene	0.422	0.434	0.431
Toluene	0.882	0.874	0.840
Trans 1,3-Dichloropropene	0.352	0.365	0.363
2-Hexanone	0.078	0.081	0.079

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TM07 Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 Calibration Date: 09/16/11

LAB FILE ID: RF20: 20_00916 RF40: 40_00916 RF80: 80_00916

COMPOUND	RF20	RF40	RF80
1,1,2-Trichloroethane	0.196	0.197	0.199
1,3-Dichloropropane	0.320	0.325	0.318
Tetrachloroethene	0.384	0.386	0.372
Chlorodibromomethane	0.241	0.251	0.249
1,2-Dibromoethane	0.201	0.205	0.201
Chlorobenzene	1.014	1.001	0.938
Ethyl Benzene	1.756	1.721	1.539
1,1,1,2-Tetrachloroethane	0.338	0.340	0.335
m,p-xylene	0.708	0.697	0.642
o-Xylene	0.720	0.712	0.691
Styrene	1.136	1.140	1.073
Bromoform	0.211	0.214	0.223
1,1,2,2-Tetrachloroethane	0.372	0.371	0.373
1,2,3-Trichloropropane	0.121	0.120	0.117
Trans-1,4-Dichloro 2-Butene	0.090	0.094	0.093
N-Propyl Benzene	3.360	3.176	2.749
Bromobenzene	0.677	0.671	0.669
Isopropyl Benzene	2.968	2.822	2.515
2-Chloro Toluene	2.196	2.117	2.007
4-Chloro Toluene	2.192	2.118	1.984
T-Butyl Benzene	2.364	2.288	2.106
1,3,5-Trimethyl Benzene	2.695	2.579	2.322
1,2,4-Trimethylbenzene	2.752	2.641	2.350
S-Butyl Benzene	3.396	3.217	2.773
4-Isopropyl Toluene	2.953	2.807	2.471
1,3-Dichlorobenzene	1.510	1.464	1.407
1,4-Dichlorobenzene	1.501	1.459	1.394
N-Butyl Benzene	2.609	2.523	2.258
1,2-Dichlorobenzene	1.339	1.299	1.247
1,2-Dibromo 3-Chloropropane	0.063	0.064	0.063
1,2,4-Trichlorobenzene	0.782	0.759	0.712
Hexachloro 1,3-Butadiene	0.423	0.416	0.404
Naphthalene	1.136	1.111	1.014
1,2,3-Trichlorobenzene	0.470	0.446	0.389
Dichlorodifluoromethane	0.732	0.706	0.690
Methyl tert butyl ether	1.005	0.999	0.989

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TM07 Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 Calibration Date: 09/16/11

LAB FILE ID: RF20: 20_00916 RF40: 40_00916 RF80: 80_00916

COMPOUND	RF20	RF40	RF80
d4-1,2-Dichloroethane	0.410	0.407	0.413
d8-Toluene	1.262	1.258	1.243
4-Bromofluorobenzene	0.532	0.544	0.538
d4-1,2-Dichlorobenzene	0.864	0.856	0.862
Dibromofluoromethane	0.451	0.460	0.462

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TM07 Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 Calibration Date: 09/16/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
Chloromethane	AVRG	0.557	9.9
Vinyl Chloride	AVRG	0.638	6.0
Bromomethane	AVRG	0.302	8.8
Chloroethane	AVRG	0.381	8.6
Trichlorofluoromethane	AVRG	0.754	10.5
Acrolein	AVRG	0.029	5.6
112Trichloro122Trifluoroetha	AVRG	0.523	4.5
Acetone	AVRG	0.049	9.9
1,1-Dichloroethene	AVRG	0.484	6.8
Bromoethane	AVRG	0.395	7.2
Iodomethane	AVRG	0.817	6.3
Methylene Chloride	AVRG	0.499	9.9
Acrylonitrile	AVRG	0.062	12.8
Carbon Disulfide	AVRG	1.458	4.6
Trans-1,2-Dichloroethene	AVRG	0.538	8.0
Vinyl Acetate	AVRG	0.393	8.7
1,1-Dichloroethane	AVRG	0.853	7.6
2-Butanone	AVRG	0.076	6.0
2,2-Dichloropropane	AVRG	0.683	6.0
Cis-1,2-Dichloroethene	AVRG	0.540	5.8
Chloroform	AVRG	0.903	5.0
Bromochloromethane	AVRG	0.230	5.3
1,1,1-Trichloroethane	AVRG	0.838	5.2
1,1-Dichloropropene	AVRG	0.456	4.4
Carbon Tetrachloride	AVRG	0.425	8.4
1,2-Dichloroethane	AVRG	0.314	5.6
Benzene	AVRG	1.253	4.1
Trichloroethene	AVRG	0.365	3.7
1,2-Dichloropropane	AVRG	0.264	3.7
Bromodichloromethane	AVRG	0.343	10.4
Dibromomethane	AVRG	0.130	7.3
2-Chloroethyl Vinyl Ether	AVRG	0.099	7.2
4-Methyl-2-Pentanone	AVRG	0.116	5.6
Cis 1,3-dichloropropene	AVRG	0.402	8.4
Toluene	AVRG	0.873	4.7
Trans 1,3-Dichloropropene	AVRG	0.336	8.1
2-Hexanone	AVRG	0.076	6.0

<- 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: TM07 — Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 — Calibration Date: 09/16/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
1,1,2-Trichloroethane	AVRG	0.199	4.1
1,3-Dichloropropane	AVRG	0.313	4.8
Tetrachloroethene	AVRG	0.373	3.2
Chlorodibromomethane	AVRG	0.213	19.0
1,2-Dibromoethane	AVRG	0.196	9.1
Chlorobenzene	AVRG	0.980	4.4
Ethyl Benzene	AVRG	1.701	5.4
1,1,1,2-Tetrachloroethane	AVRG	0.302	13.5
m,p-xylene	AVRG	0.679	5.4
o-Xylene	AVRG	0.677	7.1
Styrene	AVRG	1.039	10.2
Bromoform	AVRG	0.184	18.4
1,1,2,2-Tetrachloroethane	AVRG	0.355	8.3
1,2,3-Trichloropropane	AVRG	0.119	3.1
Trans-1,4-Dichloro 2-Butene	AVRG	0.089	6.3
N-Propyl Benzene	AVRG	3.192	6.4
Bromobenzene	AVRG	0.668	2.7
Isopropyl Benzene	AVRG	2.832	6.1
2-Chloro Toluene	AVRG	2.166	7.1
4-Chloro Toluene	AVRG	2.163	5.2
T-Butyl Benzene	AVRG	2.268	4.8
1,3,5-Trimethyl Benzene	AVRG	2.550	5.3
1,2,4-Trimethylbenzene	AVRG	2.593	5.6
S-Butyl Benzene	AVRG	3.233	7.1
4-Isopropyl Toluene	AVRG	2.768	5.6
1,3-Dichlorobenzene	AVRG	1.473	4.8
1,4-Dichlorobenzene	AVRG	1.483	4.9
N-Butyl Benzene	AVRG	2.459	5.0
1,2-Dichlorobenzene	AVRG	1.311	4.8
1,2-Dibromo 3-Chloropropane	AVRG	0.057	14.1
1,2,4-Trichlorobenzene	AVRG	0.738	5.1
Hexachloro 1,3-Butadiene	AVRG	0.410	3.1
Naphthalene	AVRG	1.024	9.2
1,2,3-Trichlorobenzene	AVRG	0.430	8.0
Dichlorodifluoromethane	AVRG	0.726	3.9
Methyl tert butyl ether	AVRG	0.988	4.7

<- 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: TM07 Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 Calibration Date: 09/16/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
d4-1,2-Dichloroethane	AVRG	0.411	2.2
d8-Toluene	AVRG	1.254	0.8
4-Bromofluorobenzene	AVRG	0.534	1.3
d4-1,2-Dichlorobenzene	AVRG	0.866	1.0
Dibromofluoromethane	AVRG	0.454	2.2

<- 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: TM07 — Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 — Cont. Calib. Date: 09/15/11

Init. Calib. Date: 09/01/11 — Cont. Calib. Time: 0928

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Chloromethane	0.508	0.484	0.100	AVRG	-4.7
Vinyl Chloride	0.624	0.560	0.010	AVRG	-10.2
Bromomethane	0.376	0.320	0.010	AVRG	-14.9
Chloroethane	0.392	0.334	0.010	AVRG	-14.8
Trichlorofluoromethane	0.849	0.804	0.010	AVRG	-5.3
Acrolein	0.027	0.024	0.010	AVRG	-11.1
112Trichloro122Trifluoroetha	0.608	0.565	0.010	AVRG	-7.1
Acetone	0.039	0.036	0.010	AVRG	-7.7
1,1-Dichloroethene	0.507	0.462	0.010	AVRG	-8.9
Bromoethane	0.421	0.417	0.010	AVRG	-1.0
Iodomethane	0.880	0.829	0.010	AVRG	-5.8
Methylene Chloride	10.000	9.306	0.010	LINR	-6.9
Acrylonitrile	0.048	0.047	0.010	AVRG	-2.1
Carbon Disulfide	1.706	1.580	0.010	AVRG	-7.4
Trans-1,2-Dichloroethene	0.574	0.538	0.010	AVRG	-6.3
Vinyl Acetate	0.294	0.278	0.010	AVRG	-5.4
1,1-Dichloroethane	0.864	0.834	0.100	AVRG	-3.5
2-Butanone	0.056	0.053	0.010	AVRG	-5.4
2,2-Dichloropropane	0.787	0.763	0.010	AVRG	-3.0
Cis-1,2-Dichloroethene	0.554	0.520	0.010	AVRG	-6.1
Chloroform	0.867	0.841	0.010	AVRG	-3.0
Bromochloromethane	0.201	0.193	0.010	AVRG	-4.0
1,1,1-Trichloroethane	0.919	0.866	0.010	AVRG	-5.8
1,1-Dichloropropene	0.455	0.462	0.010	AVRG	1.5
Carbon Tetrachloride	0.484	0.473	0.010	AVRG	-2.3
1,2-Dichloroethane	0.267	0.252	0.010	AVRG	-5.6
Benzene	1.246	1.246	0.010	AVRG	0.0
Trichloroethene	0.374	0.362	0.010	AVRG	-3.2
1,2-Dichloropropane	0.250	0.246	0.010	AVRG	-1.6
Bromodichloromethane	0.326	0.309	0.010	AVRG	-5.2
Dibromomethane	0.110	0.101	0.010	AVRG	-8.2
2-Chloroethyl Vinyl Ether	0.080	0.072	0.010	AVRG	-10.0
4-Methyl-2-Pentanone	0.096	0.088	0.010	AVRG	-8.3
Cis 1,3-dichloropropene	0.363	0.359	0.010	AVRG	-1.1
Toluene	0.865	0.834	0.010	AVRG	-3.6
Trans 1,3-Dichloropropene	0.291	0.275	0.010	AVRG	-5.5
2-Hexanone	0.065	0.063	0.010	AVRG	-3.1

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

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TM07 — Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 — Cont. Calib. Date: 09/15/11

Init. Calib. Date: 09/01/11 — Cont. Calib. Time: 0928

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
1,1,2-Trichloroethane	0.162	0.152	0.010	AVRG	-6.2	
1,3-Dichloropropane	0.279	0.272	0.010	AVRG	-2.5	
Tetrachloroethene	0.410	0.408	0.010	AVRG	-0.5	
Chlorodibromomethane	0.200	0.198	0.010	AVRG	-1.0	
1,2-Dibromoethane	0.156	0.147	0.010	AVRG	-5.8	
Chlorobenzene	0.993	0.983	0.300	AVRG	-1.0	
Ethyl Benzene	1.804	1.821	0.010	AVRG	0.9	
1,1,1,2-Tetrachloroethane	0.317	0.308	0.010	AVRG	-2.8	
m,p-xylene	0.721	0.727	0.010	AVRG	0.8	
o-Xylene	0.713	0.697	0.010	AVRG	-2.2	
Styrene	1.052	1.047	0.010	AVRG	-0.5	
Bromoform	0.172	0.172	0.100	AVRG	0.0	
1,1,2,2-Tetrachloroethane	0.316	0.292	0.300	AVRG	-7.6	*
1,2,3-Trichloropropane	0.102	0.092	0.010	AVRG	-9.8	
Trans-1,4-Dichloro 2-Butene	0.079	0.078	0.010	AVRG	-1.3	
N-Propyl Benzene	3.641	3.825	0.010	AVRG	5.0	
Bromobenzene	0.670	0.651	0.010	AVRG	-2.8	
Isopropyl Benzene	3.239	3.351	0.010	AVRG	3.4	
2-Chloro Toluene	2.283	2.278	0.010	AVRG	-0.2	
4-Chloro Toluene	2.286	2.335	0.010	AVRG	2.1	
T-Butyl Benzene	2.531	2.612	0.010	AVRG	3.2	
1,3,5-Trimethyl Benzene	2.826	2.938	0.010	AVRG	4.0	
1,2,4-Trimethylbenzene	2.883	2.966	0.010	AVRG	2.9	
S-Butyl Benzene	3.636	3.800	0.010	AVRG	4.5	
4-Isopropyl Toluene	3.158	3.251	0.010	AVRG	2.9	
1,3-Dichlorobenzene	1.551	1.513	0.010	AVRG	-2.4	
1,4-Dichlorobenzene	1.528	1.480	0.010	AVRG	-3.1	
N-Butyl Benzene	2.757	2.910	0.010	AVRG	5.5	
1,2-Dichlorobenzene	1.308	1.249	0.010	AVRG	-4.5	
1,2-Dibromo 3-Chloropropane	0.053	0.049	0.010	AVRG	-7.5	
1,2,4-Trichlorobenzene	0.873	0.870	0.010	AVRG	-0.3	
Hexachloro 1,3-Butadiene	0.458	0.464	0.010	AVRG	1.3	
Naphthalene	1.126	1.047	0.010	AVRG	-7.0	
1,2,3-Trichlorobenzene	0.646	0.593	0.010	AVRG	-8.2	
Dichlorodifluoromethane	0.556	0.482	0.010	AVRG	-13.3	
Methyl tert butyl ether	0.926	0.830	0.010	AVRG	-10.4	

<- 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: TM07 | Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 | Cont. Calib. Date: 09/15/11

Init. Calib. Date: 09/01/11 | Cont. Calib. Time: 0928

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.362	0.349	0.010	AVRG	-3.6
d8-Toluene	1.273	1.246	0.010	AVRG	-2.1
4-Bromofluorobenzene	0.508	0.504	0.010	AVRG	-0.8
d4-1,2-Dichlorobenzene	0.841	0.834	0.010	AVRG	-0.8
Dibromofluoromethane	0.442	0.437	0.010	AVRG	-1.1

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

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC | Client: AMEC GEOMATRIX

ARI Job No: TM07 | Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 | Cont. Calib. Date: 09/19/11

Init. Calib. Date: 09/16/11 | Cont. Calib. Time: 0942

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
Chloromethane	0.557	0.568	0.100	AVRG	2.0	
Vinyl Chloride	0.638	0.677	0.010	AVRG	6.1	
Bromomethane	0.302	0.324	0.010	AVRG	7.3	
Chloroethane	0.381	0.367	0.010	AVRG	-3.7	
Trichlorofluoromethane	0.754	0.820	0.010	AVRG	8.8	
Acrolein	0.029	0.016	0.010	AVRG	-44.8	<-
112Trichloro122Trifluoroetha	0.523	0.564	0.010	AVRG	7.8	
Acetone	0.049	0.043	0.010	AVRG	-12.2	
1,1-Dichloroethene	0.484	0.484	0.010	AVRG	0.0	
Bromoethane	0.395	0.396	0.010	AVRG	0.2	
Iodomethane	0.817	0.831	0.010	AVRG	1.7	
Methylene Chloride	0.499	0.474	0.010	AVRG	-5.0	
Acrylonitrile	0.062	0.059	0.010	AVRG	-4.8	
Carbon Disulfide	1.458	1.584	0.010	AVRG	8.6	
Trans-1,2-Dichloroethene	0.538	0.561	0.010	AVRG	4.3	
Vinyl Acetate	0.393	0.360	0.010	AVRG	-8.4	
1,1-Dichloroethane	0.853	0.859	0.100	AVRG	0.7	
2-Butanone	0.075	0.070	0.010	AVRG	-6.7	
2,2-Dichloropropane	0.683	0.772	0.010	AVRG	13.0	
Cis-1,2-Dichloroethene	0.540	0.540	0.010	AVRG	0.0	
Chloroform	0.903	0.893	0.010	AVRG	-1.1	
Bromochloromethane	0.230	0.222	0.010	AVRG	-3.5	
1,1,1-Trichloroethane	0.838	0.878	0.010	AVRG	4.8	
1,1-Dichloropropene	0.456	0.477	0.010	AVRG	4.6	
Carbon Tetrachloride	0.425	0.484	0.010	AVRG	13.9	
1,2-Dichloroethane	0.314	0.296	0.010	AVRG	-5.7	
Benzene	1.253	1.305	0.010	AVRG	4.2	
Trichloroethene	0.365	0.381	0.010	AVRG	4.4	
1,2-Dichloropropane	0.264	0.276	0.010	AVRG	4.5	
Bromodichloromethane	0.343	0.367	0.010	AVRG	7.0	
Dibromomethane	0.130	0.128	0.010	AVRG	-1.5	
2-Chloroethyl Vinyl Ether	0.099	0.097	0.010	AVRG	-2.0	
4-Methyl-2-Pentanone	0.116	0.107	0.010	AVRG	-7.8	
Cis 1,3-dichloropropene	0.402	0.427	0.010	AVRG	6.2	
Toluene	0.873	0.899	0.010	AVRG	3.0	
Trans 1,3-Dichloropropene	0.336	0.348	0.010	AVRG	3.6	
2-Hexanone	0.076	0.067	0.010	AVRG	-11.8	

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

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TM07 — Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 — Cont. Calib. Date: 09/19/11

Init. Calib. Date: 09/16/11 — Cont. Calib. Time: 0942

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
1,1,2-Trichloroethane	0.199	0.187	0.010	AVRG	-6.0	
1,3-Dichloropropane	0.313	0.294	0.010	AVRG	-6.1	
Tetrachloroethene	0.373	0.381	0.010	AVRG	2.1	
Chlorodibromomethane	0.213	0.228	0.010	AVRG	7.0	
1,2-Dibromoethane	0.196	0.192	0.010	AVRG	-2.0	
Chlorobenzene	0.980	0.978	0.300	AVRG	-0.2	
Ethyl Benzene	1.701	1.764	0.010	AVRG	3.7	
1,1,1,2-Tetrachloroethane	0.302	0.311	0.010	AVRG	3.0	
m,p-xylene	0.678	0.698	0.010	AVRG	2.9	
o-Xylene	0.677	0.703	0.010	AVRG	3.8	
Styrene	1.039	1.087	0.010	AVRG	4.6	
Bromoform	0.184	0.199	0.100	AVRG	8.2	
1,1,2,2-Tetrachloroethane	0.355	0.336	0.300	AVRG	-5.4	
1,2,3-Trichloropropane	0.119	0.106	0.010	AVRG	-10.9	
Trans-1,4-Dichloro 2-Butene	0.089	0.087	0.010	AVRG	-2.2	
N-Propyl Benzene	3.193	3.596	0.010	AVRG	12.6	
Bromobenzene	0.668	0.666	0.010	AVRG	-0.3	
Isopropyl Benzene	2.832	3.090	0.010	AVRG	9.1	
2-Chloro Toluene	2.166	2.247	0.010	AVRG	3.7	
4-Chloro Toluene	2.163	2.265	0.010	AVRG	4.7	
T-Butyl Benzene	2.268	2.424	0.010	AVRG	6.9	
1,3,5-Trimethyl Benzene	2.550	2.782	0.010	AVRG	9.1	
1,2,4-Trimethylbenzene	2.593	2.825	0.010	AVRG	8.9	
S-Butyl Benzene	3.233	3.544	0.010	AVRG	9.6	
4-Isopropyl Toluene	2.768	3.092	0.010	AVRG	11.7	
1,3-Dichlorobenzene	1.474	1.499	0.010	AVRG	1.7	
1,4-Dichlorobenzene	1.483	1.463	0.010	AVRG	-1.3	
N-Butyl Benzene	2.459	2.802	0.010	AVRG	13.9	
1,2-Dichlorobenzene	1.311	1.264	0.010	AVRG	-3.6	
1,2-Dibromo 3-Chloropropane	0.057	0.051	0.010	AVRG	-10.5	
1,2,4-Trichlorobenzene	0.738	0.672	0.010	AVRG	-8.9	
Hexachloro 1,3-Butadiene	0.410	0.413	0.010	AVRG	0.7	
Naphthalene	1.024	0.862	0.010	AVRG	-15.8	
1,2,3-Trichlorobenzene	0.430	0.334	0.010	AVRG	-22.3	<-
Dichlorodifluoromethane	0.726	0.761	0.010	AVRG	4.8	
Methyl tert butyl ether	0.988	0.914	0.010	AVRG	-7.5	

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

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TM07 — Project: FRP 2011 SHORELINE INVESTIG

Instrument ID: NT3 — Cont. Calib. Date: 09/19/11

Init. Calib. Date: 09/16/11 — Cont. Calib. Time: 0942

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.411	0.391	0.010	AVRG	-4.9
d8-Toluene	1.254	1.302	0.010	AVRG	3.8
4-Bromofluorobenzene	0.534	0.537	0.010	AVRG	0.6
d4-1,2-Dichlorobenzene	0.866	0.844	0.010	AVRG	-2.5
Dibromofluoromethane	0.454	0.454	0.010	AVRG	0.0

<- 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: TM07 — Project: FRP 2011 SHORELINE INVESTIGA

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

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

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

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

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

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TM07 — Project: FRP 2011 SHORELINE INVESTIGA

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

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

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	212149	9.41				
	UPPER LIMIT	424298	9.91				
	LOWER LIMIT	106074	8.91				
	Sample ID						
01	ICV10	211854	9.41				
02							
03							
04							
05							
06							
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22							

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

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

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TM07 — Project: FRP 2011 SHORELINE INVESTIGA

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

Instrument ID: NT3 — Project Run Date: 09/15/11

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	220246	5.25	342057	5.64	343287	7.71
	UPPER LIMIT	440492	5.75	684114	6.14	686574	8.21
	LOWER LIMIT	110123	4.75	171028	5.14	171644	7.21
	Sample ID						
01	LCS0915	222016	5.25	341914	5.64	332483	7.71
02	LCS0915	219473	5.25	346536	5.64	331047	7.71
03	MB0915	215623	5.25	331166	5.64	332252	7.71
04	FRP-091311-0	233412	5.25	373264	5.64	384221	7.71
05	FRP-091311-0	235756	5.25	368208	5.64	381327	7.72
06	FRP-091311-0	193128	5.25	292159	5.64	305048	7.72
07	FRP-091311-0	211407	5.25	332927	5.64	360996	7.71
08	FRP-091311-0	216827	5.25	336253	5.64	370427	7.71
09	FRP-091311-0	217890	5.25	341043	5.64	360633	7.71
10	FRP-091311-0	210500	5.25	341285	5.65	374641	7.72
11	FRP-091311-0	216003	5.25	332663	5.64	328762	7.71
12	FRP-091311-0	212342	5.25	334964	5.64	336281	7.71
13	FRP-091311-0	217293	5.25	336842	5.64	358206	7.72
14							
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IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CLB) = d5-Chlorobenzene

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

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TM07 — Project: FRP 2011 SHORELINE INVESTIGA

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

Instrument ID: NT3 — Project Run Date: 09/15/11

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	212149	9.41				
	UPPER LIMIT	424298	9.91				
	LOWER LIMIT	106074	8.91				
	Sample ID						
01	LCS0915	201347	9.41				
02	LCS0915	203591	9.41				
03	MB0915	200802	9.41				
04	FRP-091311-0	232285	9.41				
05	FRP-091311-0	236174	9.41				
06	FRP-091311-0	154397	9.41				
07	FRP-091311-0	234292	9.41				
08	FRP-091311-0	229311	9.41				
09	FRP-091311-0	225165	9.41				
10	FRP-091311-0	199289	9.41				
11	FRP-091311-0	176636	9.41				
12	FRP-091311-0	179262	9.41				
13	FRP-091311-0	225821	9.41				
14							
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21							
22							

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

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

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TM07 — Project: FRP 2011 SHORELINE INVESTIGA

Ical Midpoint ID: 10_00916 — Ical Date: 09/16/11

Instrument ID: NT3 — Project Run Date: 09/16/11

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	187738	5.26	295194	5.65	314755	7.72
	UPPER LIMIT	375476	5.76	590388	6.15	629510	8.22
	LOWER LIMIT	93869	4.76	147597	5.15	157378	7.22
	Sample ID						
01	ICV0916	180861	5.26	291619	5.65	314306	7.72
02							
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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: TM07 — Project: FRP 2011 SHORELINE INVESTIGA

Ical Midpoint ID: 10_00916 — Ical Date: 09/16/11

Instrument ID: NT3 — Project Run Date: 09/16/11

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	209244	9.41				
	UPPER LIMIT	418488	9.91				
	LOWER LIMIT	104622	8.91				
	Sample ID						
01	ICV0916	208869	9.41				
02							
03							
04							
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IS4 (DCB) = d4-1,4-Dichlorobenzene

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

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TM07 — Project: FRP 2011 SHORELINE INVESTIGA

Ical Midpoint ID: 10_00916 — Ical Date: 09/16/11

Instrument ID: NT3 — Project Run Date: 09/19/11

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	187738	5.26	295194	5.65	314755	7.72
	UPPER LIMIT	375476	5.76	590388	6.15	629510	8.22
	LOWER LIMIT	93869	4.76	147597	5.15	157378	7.22
	Sample ID						
01	LCS0919	192527	5.26	315568	5.65	347656	7.71
02	LCS0919	193577	5.26	305630	5.65	341655	7.71
03	MB0919	188245	5.26	308744	5.65	342650	7.72
04	TRIP BLANK	192233	5.26	301375	5.65	339491	7.72
05	FRP-091311-0	186388	5.26	304893	5.65	337051	7.72
06	FRP-091311-0	188160	5.26	295841	5.65	332455	7.71
07	FRP-091311-0	182280	5.26	293323	5.64	332045	7.71
08	FRP-091311-0	192908	5.26	301896	5.65	334795	7.72
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IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CLB) = d5-Chlorobenzene

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

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TM07 — Project: FRP 2011 SHORELINE INVESTIGA

Ical Midpoint ID: 10_00916 — Ical Date: 09/16/11

Instrument ID: NT3 — Project Run Date: 09/19/11

		IS4 (DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	209244	9.41				
	UPPER LIMIT	418488	9.91				
	LOWER LIMIT	104622	8.91				
	Sample ID						
01	LCS0919	221674	9.41				
02	LCS0919	225696	9.41				
03	MB0919	213467	9.41				
04	TRIP BLANK	212979	9.41				
05	FRP-091311-0	215651	9.41				
06	FRP-091311-0	214230	9.41				
07	FRP-091311-0	216569	9.41				
08	FRP-091311-0	215460	9.41				
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IS4 (DCB) = d4-1,4-Dichlorobenzene

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

* Values outside of QC limits.

Metals Analysis
Report and Summary QC Forms

ARI Job ID: TM07, TM08

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

SDG: TM07

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
FRP-091311-001	TM07A	11-19883	
FRP-091311-002	TM07B	11-19884	
FRP-091311-002D	TM07BDUP	11-19884	
FRP-091311-002S	TM07BSPK	11-19884	
FRP-091311-003	TM07C	11-19885	
PBW	TM07MB1	11-19885	
LCSW	TM07MB1SPK	11-19885	
FRP-091311-004	TM07D	11-19886	
FRP-091311-005	TM07E	11-19887	
FRP-091311-006	TM07F	11-19888	
FRP-091311-007	TM07G	11-19889	
FRP-091311-008	TM07H	11-19890	
FRP-091311-009	TM07I	11-19891	
FRP-091311-010	TM07J	11-19892	
FRP-091311-002	TM07L	11-19894	
PBW	TM07MB2	11-19894	
LCSW	TM07MB2SPK	11-19894	
FRP-091311-003	TM07M	11-19895	

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: Jay Kuhn Name: Jay Kuhn

Date: 10/5/11 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-001
SAMPLE

Lab Sample ID: TM07A
LIMS ID: 11-19883
Matrix: Water
Data Release Authorized:
Reported: 10/05/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/16/11	6010B	09/21/11	**7429-90-5**	**Aluminum**	25.7	50	**4,170**	
200.8	09/16/11	200.8	09/29/11	**7440-38-2**	**Arsenic**	0.120	0.5	**9.0**	
3010A	09/16/11	6010B	09/21/11	7440-43-9	Cadmium	0.18	2	2	U
3010A	09/16/11	6010B	09/21/11	**7440-47-3**	**Chromium**	1.24	5	**18**	
3010A	09/16/11	6010B	09/21/11	**7440-50-8**	**Copper**	0.92	2	**10**	
200.8	09/16/11	200.8	09/29/11	**7439-92-1**	**Lead**	0.115	0.2	**1.2**	
3010A	09/16/11	6010B	09/21/11	7440-02-0	Nickel	3.9	10	10	U
3010A	09/16/11	6010B	09/21/11	7782-49-2	Selenium	5.0	50	50	UJ
3010A	09/16/11	6010B	09/21/11	7440-28-0	Thallium	3.1	50	50	U
3010A	09/16/11	6010B	09/21/11	**7440-62-2**	**Vanadium**	0.27	3	**66**	
3010A	09/16/11	6010B	09/21/11	**7440-66-6**	**Zinc**	1.4	10	**10**	

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-002
SAMPLE

Lab Sample ID: TM07B
LIMS ID: 11-19884
Matrix: Water
Data Release Authorized:
Reported: 01/17/12

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/16/11	6010B	09/21/11	**7429-90-5**	**Aluminum**	0.0076	0.05	**21.5**	
200.8	09/16/11	200.8	09/29/11	**7440-38-2**	**Arsenic**	0.000120	0.0005	**0.0141**	
3010A	09/16/11	6010B	09/21/11	7440-43-9	Cadmium	0.00018	0.002	0.002	U
3010A	09/16/11	6010B	09/21/11	**7440-70-2**	**Calcium**	0.0113	0.05	**23.5**	
3010A	09/16/11	6010B	09/21/11	**7440-47-3**	**Chromium**	0.00124	0.005	**0.047**	
3010A	09/16/11	6010B	09/21/11	**7440-50-8**	**Copper**	0.00092	0.002	**0.051**	
3010A	09/16/11	6010B	09/21/11	**7439-89-6**	**Iron**	0.0075	0.05	**16.0**	
200.8	09/16/11	200.8	09/29/11	**7439-92-1**	**Lead**	0.000115	0.0002	**0.0045**	
3010A	09/16/11	6010B	09/21/11	**7439-95-4**	**Magnesium**	0.0096	0.05	**4.32**	
3010A	09/16/11	6010B	09/21/11	**7439-96-5**	**Manganese**	0.00028	0.001	**0.236**	
3010A	09/16/11	6010B	09/21/11	**7440-02-0**	**Nickel**	0.0039	0.01	**0.02**	
3010A	09/16/11	6010B	09/21/11	**7440-09-7**	**Potassium**	0.066	0.5	**2.8**	
3010A	09/16/11	6010B	09/21/11	7782-49-2	Selenium	0.0050	0.05	0.05	UJ
3010A	09/16/11	6010B	09/21/11	**7440-23-5**	**Sodium**	0.011	0.5	**339**	
3010A	09/16/11	6010B	09/21/11	7440-28-0	Thallium	0.0031	0.05	0.05	U
3010A	09/16/11	6010B	09/21/11	**7440-62-2**	**Vanadium**	0.00027	0.003	**0.159**	
3010A	09/16/11	6010B	09/21/11	**7440-66-6**	**Zinc**	0.0014	0.01	**0.03**	

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

TM-70 1-70 2 4/27/12

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-003
SAMPLE

Lab Sample ID: TM07C
LIMS ID: 11-19885
Matrix: Water
Data Release Authorized:
Reported: 01/17/12

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/16/11	6010B	09/21/11	**7429-90-5**	**Aluminum**	0.0076	0.05	**71.0**	
200.8	09/16/11	200.8	09/29/11	**7440-38-2**	**Arsenic**	0.00024	0.002	**0.080**	
3010A	09/16/11	6010B	09/21/11	7440-43-9	Cadmium	0.00018	0.002	0.002	U
3010A	09/16/11	6010B	09/21/11	**7440-70-2**	**Calcium**	0.0113	0.05	**51.1**	
3010A	09/16/11	6010B	09/21/11	**7440-47-3**	**Chromium**	0.00124	0.005	**0.367**	
3010A	09/16/11	6010B	09/21/11	**7440-50-8**	**Copper**	0.00092	0.002	**0.870**	
3010A	09/16/11	6010B	09/21/11	**7439-89-6**	**Iron**	0.0075	0.05	**97.2**	
200.8	09/16/11	200.8	09/29/11	**7439-92-1**	**Lead**	0.000230	0.0005	**0.0512**	
3010A	09/16/11	6010B	09/21/11	**7439-95-4**	**Magnesium**	0.0096	0.05	**14.1**	
3010A	09/16/11	6010B	09/21/11	**7439-96-5**	**Manganese**	0.00028	0.001	**2.00**	
3010A	09/16/11	6010B	09/21/11	**7440-02-0**	**Nickel**	0.0039	0.01	**0.12**	
3010A	09/16/11	6010B	09/21/11	**7440-09-7**	**Potassium**	0.066	0.5	**7.8**	
3010A	09/16/11	6010B	09/21/11	7782-49-2	Selenium	0.0050	0.05	0.05	UJ
3010A	09/16/11	6010B	09/21/11	**7440-23-5**	**Sodium**	0.011	0.5	**1,230**	
3010A	09/16/11	6010B	09/21/11	7440-28-0	Thallium	0.0031	0.05	0.05	U
3010A	09/16/11	6010B	09/21/11	**7440-62-2**	**Vanadium**	0.00027	0.003	**1.23**	
3010A	09/16/11	6010B	09/21/11	**7440-66-6**	**Zinc**	0.0014	0.01	**0.29**	

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-004
SAMPLE

Lab Sample ID: TM07D
LIMS ID: 11-19886
Matrix: Water
Data Release Authorized:
Reported: 10/05/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/16/11	6010B	09/21/11	**7429-90-5**	**Aluminum**	25.7	50	**14,800**	
200.8	09/16/11	200.8	09/29/11	**7440-38-2**	**Arsenic**	0.24	1	**24**	
3010A	09/16/11	6010B	09/21/11	7440-43-9	Cadmium	0.18	2	2	U
3010A	09/16/11	6010B	09/21/11	**7440-47-3**	**Chromium**	1.24	5	**405**	
3010A	09/16/11	6010B	09/21/11	**7440-50-8**	**Copper**	0.92	2	**140**	
200.8	09/16/11	200.8	09/29/11	**7439-92-1**	**Lead**	0.230	0.5	**26.8**	
3010A	09/16/11	6010B	09/21/11	**7440-02-0**	**Nickel**	3.9	10	**30**	
3010A	09/16/11	6010B	09/21/11	7782-49-2	Selenium	5.0	50	50	U UJ
3010A	09/16/11	6010B	09/21/11	7440-28-0	Thallium	3.1	50	50	U
3010A	09/16/11	6010B	09/21/11	**7440-62-2**	**Vanadium**	0.27	3	**987**	
3010A	09/16/11	6010B	09/21/11	**7440-66-6**	**Zinc**	1.4	10	**80**	

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-005
SAMPLE

Lab Sample ID: TM07E
LIMS ID: 11-19887
Matrix: Water
Data Release Authorized:
Reported: 10/05/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/16/11	6010B	09/21/11	**7429-90-5**	**Aluminum**	25.7	50	**14,900**	
200.8	09/16/11	200.8	09/29/11	**7440-38-2**	**Arsenic**	0.24	2	**25**	
3010A	09/16/11	6010B	09/21/11	7440-43-9	Cadmium	0.18	2	2	U
3010A	09/16/11	6010B	09/21/11	**7440-47-3**	**Chromium**	1.24	5	**410**	
3010A	09/16/11	6010B	09/21/11	**7440-50-8**	**Copper**	0.92	2	**135**	
200.8	09/16/11	200.8	09/29/11	**7439-92-1**	**Lead**	0.230	0.5	**27.2**	
3010A	09/16/11	6010B	09/21/11	**7440-02-0**	**Nickel**	3.9	10	**30**	
3010A	09/16/11	6010B	09/21/11	7782-49-2	Selenium	5.0	50	50	UJ
3010A	09/16/11	6010B	09/21/11	7440-28-0	Thallium	3.1	50	50	U
3010A	09/16/11	6010B	09/21/11	**7440-62-2**	**Vanadium**	0.27	3	**983**	
3010A	09/16/11	6010B	09/21/11	**7440-66-6**	**Zinc**	1.4	10	**80**	

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-006
SAMPLE

Lab Sample ID: TM07F
LIMS ID: 11-19888
Matrix: Water
Data Release Authorized:
Reported: 10/05/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/16/11	6010B	09/21/11	**7429-90-5**	**Aluminum**	25.7	50	**82,400**	
200.8	09/16/11	200.8	09/29/11	**7440-38-2**	**Arsenic**	0.12	1	**61**	
3010A	09/16/11	6010B	09/21/11	7440-43-9	Cadmium	0.18	2	2	U
3010A	09/16/11	6010B	09/21/11	**7440-47-3**	**Chromium**	1.24	5	**256**	
3010A	09/16/11	6010B	09/21/11	**7440-50-8**	**Copper**	0.92	2	**368**	
200.8	09/16/11	200.8	09/29/11	**7439-92-1**	**Lead**	0.115	0.2	**20.7**	
3010A	09/16/11	6010B	09/21/11	**7440-02-0**	**Nickel**	3.9	10	**70**	
3010A	09/16/11	6010B	09/21/11	7782-49-2	Selenium	5.0	50	50	UJ
3010A	09/16/11	6010B	09/21/11	7440-28-0	Thallium	3.1	50	50	U
3010A	09/16/11	6010B	09/21/11	**7440-62-2**	**Vanadium**	0.27	3	**1,270**	
3010A	09/16/11	6010B	09/21/11	**7440-66-6**	**Zinc**	1.4	10	**180**	

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

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-007
SAMPLE

Lab Sample ID: TM07G
LIMS ID: 11-19889
Matrix: Water
Data Release Authorized:
Reported: 10/05/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/16/11	6010B	09/21/11	**7429-90-5**	**Aluminum**	25.7	50	**39,900**	
200.8	09/16/11	200.8	09/29/11	**7440-38-2**	**Arsenic**	0.120	0.5	**24.8**	
3010A	09/16/11	6010B	09/21/11	7440-43-9	Cadmium	0.18	2	2	U
3010A	09/16/11	6010B	09/21/11	**7440-47-3**	**Chromium**	1.24	5	**290**	
3010A	09/16/11	6010B	09/21/11	**7440-50-8**	**Copper**	0.92	2	**205**	
200.8	09/16/11	200.8	09/29/11	**7439-92-1**	**Lead**	0.115	0.2	**22.8**	
3010A	09/16/11	6010B	09/21/11	**7440-02-0**	**Nickel**	3.9	10	**40**	
3010A	09/16/11	6010B	09/21/11	7782-49-2	Selenium	5.0	50	50	UJ
3010A	09/16/11	6010B	09/21/11	7440-28-0	Thallium	3.1	50	50	U
3010A	09/16/11	6010B	09/21/11	**7440-62-2**	**Vanadium**	0.27	3	**679**	
3010A	09/16/11	6010B	09/21/11	**7440-66-6**	**Zinc**	1.4	10	**110**	

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-008
SAMPLE

Lab Sample ID: TM07H
LIMS ID: 11-19890
Matrix: Water
Data Release Authorized:
Reported: 10/05/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/16/11	6010B	09/21/11	**7429-90-5**	**Aluminum**	25.7	50	**163,000**	
200.8	09/16/11	200.8	09/29/11	**7440-38-2**	**Arsenic**	0.24	2	**56**	
3010A	09/16/11	6010B	09/21/11	7440-43-9	Cadmium	0.18	2	2	U
3010A	09/16/11	6010B	09/21/11	**7440-47-3**	**Chromium**	1.24	5	**373**	
3010A	09/16/11	6010B	09/21/11	**7440-50-8**	**Copper**	0.92	2	**448**	
200.8	09/16/11	200.8	09/29/11	**7439-92-1**	**Lead**	0.230	0.5	**28.8**	
3010A	09/16/11	6010B	09/21/11	**7440-02-0**	**Nickel**	3.9	10	**150**	
3010A	09/16/11	6010B	09/21/11	7782-49-2	Selenium	5.0	50	50	UJ
3010A	09/16/11	6010B	09/21/11	7440-28-0	Thallium	3.1	50	50	U
3010A	09/16/11	6010B	09/21/11	**7440-62-2**	**Vanadium**	0.27	3	**424**	
3010A	09/16/11	6010B	09/21/11	**7440-66-6**	**Zinc**	1.4	10	**450**	

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-009
SAMPLE

Lab Sample ID: TM07I
LIMS ID: 11-19891
Matrix: Water
Data Release Authorized:
Reported: 10/05/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/16/11	6010B	09/21/11	**7429-90-5**	**Aluminum**	25.7	50	**64,200**	
200.8	09/16/11	200.8	09/29/11	**7440-38-2**	**Arsenic**	0.12	1	**15**	
3010A	09/16/11	6010B	09/21/11	7440-43-9	Cadmium	0.18	2	2	U
3010A	09/16/11	6010B	09/21/11	**7440-47-3**	**Chromium**	1.24	5	**212**	
3010A	09/16/11	6010B	09/21/11	**7440-50-8**	**Copper**	0.92	2	**212**	
200.8	09/16/11	200.8	09/29/11	**7439-92-1**	**Lead**	0.115	0.2	**14.0**	
3010A	09/16/11	6010B	09/21/11	**7440-02-0**	**Nickel**	3.9	10	**60**	
3010A	09/16/11	6010B	09/21/11	7782-49-2	Selenium	5.0	50	50	UJ
3010A	09/16/11	6010B	09/21/11	7440-28-0	Thallium	3.1	50	50	U
3010A	09/16/11	6010B	09/21/11	**7440-62-2**	**Vanadium**	0.27	3	**261**	
3010A	09/16/11	6010B	09/21/11	**7440-66-6**	**Zinc**	1.4	10	**270**	

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-010
SAMPLE

Lab Sample ID: TM07J
LIMS ID: 11-19892
Matrix: Water
Data Release Authorized:
Reported: 10/05/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/16/11	6010B	09/21/11	7429-90-5	Aluminum	25.7	50	50	U
200.8	09/16/11	200.8	10/03/11	7440-38-2	Arsenic	0.048	0.2	0.2	U
3010A	09/16/11	6010B	09/21/11	7440-43-9	Cadmium	0.18	2	2	U
3010A	09/16/11	6010B	09/21/11	7440-47-3	Chromium	1.24	5	5	U
3010A	09/16/11	6010B	09/21/11	7440-50-8	Copper	0.92	2	2	U
200.8	09/16/11	200.8	10/03/11	7439-92-1	Lead	0.046	0.1	0.1	U
3010A	09/16/11	6010B	09/21/11	7440-02-0	Nickel	3.9	10	10	U
3010A	09/16/11	6010B	09/21/11	7782-49-2	Selenium	5.0	50	50	U
3010A	09/16/11	6010B	09/21/11	7440-28-0	Thallium	3.1	50	50	U
3010A	09/16/11	6010B	09/21/11	7440-62-2	Vanadium	0.27	3	3	U
3010A	09/16/11	6010B	09/21/11	7440-66-6	Zinc	1.4	10	10	U

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-002
SAMPLE

Lab Sample ID: TM07L
LIMS ID: 11-19894
Matrix: Water
Data Release Authorized:
Reported: 10/05/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/16/11	6010B	09/20/11	**7440-21-3**	**Silicon**	8.2	60	**36,000**	

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-003
SAMPLE

Lab Sample ID: TM07M
LIMS ID: 11-19895
Matrix: Water
Data Release Authorized:
Reported: 10/05/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/16/11	6010B	09/20/11	**7440-21-3**	**Silicon**	8.2	60	**11,200**	

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-002
MATRIX SPIKE

Lab Sample ID: TM07B
LIMS ID: 11-19884
Matrix: Water
Data Release Authorized:
Reported: 01/17/12

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769
Date Sampled: 09/13/11
Date Received: 09/13/11

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Aluminum	6010B	21.5	24.2	2.00	135%	H
Arsenic	200.8	0.0141	0.0396	0.0250	102%	
Cadmium	6010B	0.002 U	0.529	0.500	106%	
Calcium	6010B	23.5	34.4	10.0	109%	
Chromium	6010B	0.047	0.570	0.500	105%	
Copper	6010B	0.051	0.617	0.500	113%	
Iron	6010B	16.0	18.2	2.00	110%	H
Lead	200.8	0.0045	0.0304	0.0250	104%	
Magnesium	6010B	4.32	14.9	10.0	106%	
Manganese	6010B	0.236	0.753	0.500	103%	
Nickel	6010B	0.016	0.512	0.500	99.2%	
Potassium	6010B	2.8	13.2	10.0	104%	
Selenium	6010B	0.05 U	1.44	2.00	72.0%	N
Sodium	6010B	339	356	10.0	170%	H
Thallium	6010B	0.05 U	2.09	2.00	104%	
Vanadium	6010B	0.159	0.677	0.500	104%	
Zinc	6010B	0.033	0.535	0.500	100%	

Reported in mg/L

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

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-002
DUPLICATE

Lab Sample ID: TM07B
LIMS ID: 11-19884
Matrix: Water
Data Release Authorized:
Reported: 01/17/12

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Aluminum	6010B	21.5	21.1	1.9%	+/- 20%	
Arsenic	200.8	0.0141	0.0136	3.6%	+/- 20%	
Cadmium	6010B	0.002 U	0.002 U	0.0%	+/- 0.002	L
Calcium	6010B	23.5	23.5	0.0%	+/- 20%	
Chromium	6010B	0.047	0.047	0.0%	+/- 20%	
Copper	6010B	0.051	0.052	1.9%	+/- 20%	
Iron	6010B	16.0	15.9	0.6%	+/- 20%	
Lead	200.8	0.0045	0.0044	2.2%	+/- 20%	
Magnesium	6010B	4.32	4.34	0.5%	+/- 20%	
Manganese	6010B	0.236	0.234	0.9%	+/- 20%	
Nickel	6010B	0.02	0.02	0.0%	+/- 0.01	L
Potassium	6010B	2.8	2.7	3.6%	+/- 20%	
Selenium	6010B	0.05 U	0.05 U	0.0%	+/- 0.05	L
Sodium	6010B	339	339	0.0%	+/- 20%	
Thallium	6010B	0.05 U	0.05 U	0.0%	+/- 0.05	L
Vanadium	6010B	0.159	0.161	1.2%	+/- 20%	
Zinc	6010B	0.03	0.03	0.0%	+/- 0.01	L

Reported in mg/L

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: TM07LCS
LIMS ID: 11-19885
Matrix: Water
Data Release Authorized:
Reported: 01/17/12

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Aluminum	6010B	2.08	2.00	104%	
Arsenic	200.8	0.0281	0.0250	112%	
Cadmium	6010B	0.528	0.500	106%	
Calcium	6010B	10.1	10.0	101%	
Chromium	6010B	0.533	0.500	107%	
Copper	6010B	0.538	0.500	108%	
Iron	6010B	2.09	2.00	104%	
Lead	200.8	0.0275	0.0250	110%	
Magnesium	6010B	10.4	10.0	104%	
Manganese	6010B	0.499	0.500	99.8%	
Nickel	6010B	0.50	0.50	100%	
Potassium	6010B	10.8	10.0	108%	
Selenium	6010B	2.00	2.00	100%	
Sodium	6010B	10.3	10.0	103%	
Thallium	6010B	1.98	2.00	99.0%	
Vanadium	6010B	0.524	0.500	105%	
Zinc	6010B	0.49	0.50	98.0%	

Reported in mg/L

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: TM07LCS
LIMS ID: 11-19894
Matrix: Water
Data Release Authorized:
Reported: 10/05/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Silicon	6010B	9210	10000	92.1%	

Reported in µg/L

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: TM07MB
LIMS ID: 11-19885
Matrix: Water
Data Release Authorized:
Reported: 01/17/12

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/16/11	6010B	09/21/11	7429-90-5	Aluminum	0.0076	0.05	0.05	U
200.8	09/16/11	200.8	09/29/11	7440-38-2	Arsenic	0.000048	0.0002	0.0002	U
3010A	09/16/11	6010B	09/21/11	7440-43-9	Cadmium	0.00018	0.002	0.002	U
3010A	09/16/11	6010B	09/21/11	7440-70-2	Calcium	0.0113	0.05	0.05	U
3010A	09/16/11	6010B	09/21/11	7440-47-3	Chromium	0.00124	0.005	0.005	U
3010A	09/16/11	6010B	09/21/11	7440-50-8	Copper	0.00092	0.002	0.002	U
3010A	09/16/11	6010B	09/21/11	7439-89-6	Iron	0.0075	0.05	0.05	U
200.8	09/16/11	200.8	09/29/11	7439-92-1	Lead	0.000046	0.0001	0.0001	U
3010A	09/16/11	6010B	09/21/11	7439-95-4	Magnesium	0.0096	0.05	0.05	U
3010A	09/16/11	6010B	09/21/11	7439-96-5	Manganese	0.00028	0.001	0.001	U
3010A	09/16/11	6010B	09/21/11	7440-02-0	Nickel	0.0039	0.01	0.01	U
3010A	09/16/11	6010B	09/21/11	7440-09-7	Potassium	0.066	0.5	0.5	U
3010A	09/16/11	6010B	09/21/11	7782-49-2	Selenium	0.0050	0.05	0.05	U
3010A	09/16/11	6010B	09/21/11	7440-23-5	Sodium	0.011	0.5	0.5	U
3010A	09/16/11	6010B	09/21/11	7440-28-0	Thallium	0.0031	0.05	0.05	U
3010A	09/16/11	6010B	09/21/11	7440-62-2	Vanadium	0.00027	0.003	0.003	U
3010A	09/16/11	6010B	09/21/11	7440-66-6	Zinc	0.0014	0.01	0.01	U

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: TM07MB
LIMS ID: 11-19894
Matrix: Water
Data Release Authorized:
Reported: 10/05/11

QC Report No: TM07-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3010A	09/16/11	6010B	09/20/11	7440-21-3	Silicon	8.2	60	60	U

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

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TM07

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Arsenic	AS	PMS	MS092981	50.0	50.87	101.7	50.0	50.57	101.1	50.67	101.3	50.54	101.1	50.73	101.5	51.00	102.0
Lead	PB	PMS	MS092981	50.0	49.83	99.7	50.0	50.74	101.5	50.89	101.8	50.83	101.7	51.09	102.2	50.86	101.7
Silicon	SI	ICP	IP092071	2000.0	2065.86	103.3	2000.0	2098.76	104.9	2066.86	103.3	2001.72	100.1	1996.54	99.8	2046.33	102.3

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

FORM II (1)

TM07 : 00012

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TM07

ANALYTE	EL	M	RUN	CCVTV	CCV6	%R	CCV7	%R	CCV8	%R	CCV9	%R	CCV10	%R	CCV11	%R
Arsenic	AS	PMS	MS092981	50.0	50.43	100.9	51.18	102.4	50.65	101.3	50.39	100.8				
Lead	PB	PMS	MS092981	50.0	49.55	99.1	53.40	106.8	53.68	107.4	52.15	104.3				
Silicon	SI	ICP	IP092071	2000.0	2083.16	104.2	2006.08	100.3	2000.17	100.0	1995.90	99.8	2035.46	101.8	2048.86	102.4

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

TM07 : 00125

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TM07

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Aluminum	AL	ICP	IP092175	2000.0	1974.71	98.7	2000.0	1995.14	99.8	2018.58	100.9	1975.98	98.8	1991.20	99.6	1924.84	96.2
Arsenic	AS	PMS	MS100381	50.0	50.84	101.7	50.0	50.57	101.1	50.58	101.2	50.89	101.8	50.28	100.6	50.58	101.2
Cadmium	CD	ICP	IP092175	1000.0	1028.50	102.9	1000.0	1050.29	105.0	1036.08	103.6	1030.30	103.0	1036.76	103.7	996.72	99.7
Calcium	CA	ICP	IP092175	2000.0	2031.89	101.6	2000.0	2049.84	102.5	2104.62	105.2	2081.84	104.1	2073.41	103.7	2033.08	101.7
Chromium	CR	ICP	IP092175	1000.0	1025.87	102.6	1000.0	1027.22	102.7	1048.41	104.8	1039.32	103.9	1033.62	103.4	1018.03	101.8
Copper	CU	ICP	IP092175	1000.0	1010.87	101.1	1000.0	1038.22	103.8	1017.64	101.8	1025.18	102.5	1026.41	102.6	1000.07	100.0
Iron	FE	ICP	IP092175	2000.0	2006.52	100.3	2000.0	2031.17	101.6	2072.43	103.6	2011.47	100.6	2029.39	101.5	1967.32	98.4
Lead	PB	PMS	MS100381	50.0	49.83	99.7	50.0	50.47	100.9	50.19	100.4	50.53	101.1	49.81	99.6	50.41	100.8
Magnesium	MG	ICP	IP092175	2000.0	1966.84	98.3	2000.0	1983.49	99.2	2013.00	100.7	1981.47	99.1	1985.88	99.3	1936.73	96.8
Manganese	MN	ICP	IP092175	1000.0	1015.32	101.5	1000.0	1010.25	101.0	1020.38	102.0	963.57	96.4	997.22	99.7	938.10	93.8
Nickel	NI	ICP	IP092175	1000.0	992.40	99.2	1000.0	988.78	98.9	1005.83	100.6	986.03	98.6	985.83	98.6	964.42	96.4
Potassium	K	ICP	IP092175	20000.0	20354.93	101.8	20000.0	20398.93	102.0	20882.20	104.4	20691.44	103.5	20674.55	103.4	20315.66	101.6
Selenium	SE	ICP	IP092175	2000.0	1973.50	98.7	2000.0	2026.14	101.3	1984.57	99.2	1948.59	97.4	1958.18	97.9	1886.54	94.3
Sodium	NA	ICP	IP092175	50000.0	49838.05	99.7	50000.0	49144.90	98.3	48498.70	97.0	47613.19	95.2	47306.52	94.6	45837.94	91.7
Thallium	TL	ICP	IP092175	2000.0	1947.84	97.4	2000.0	1989.25	99.5	1956.92	97.8	1915.03	95.8	1929.10	96.5	1867.70	93.4
Vanadium	V	ICP	IP092175	1000.0	962.19	96.2	1000.0	986.00	98.6	973.56	97.4	974.69	97.5	980.02	98.0	946.26	94.6
Zinc	ZN	ICP	IP092175	1000.0	967.49	96.7	1000.0	968.17	96.8	993.99	99.4	978.24	97.8	975.48	97.5	957.44	95.7

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

FORM II (1)

TM07 : 00125

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TM07

ANALYTE	EL	M	RUN	CCVTV	CCV6	%R	CCV7	%R	CCV8	%R	CCV9	%R	CCV10	%R	CCV11	%R
Aluminum	AL	ICP	IP092175	2000.0	1991.44	99.6	2000.31	100.0	2000.32	100.0						
Arsenic	AS	PMS	MS100381	50.0	50.59	101.2	50.84	101.7	50.85	101.7	50.62	101.2				
Cadmium	CD	ICP	IP092175	1000.0	1026.21	102.6	1014.86	101.5	1016.01	101.6						
Calcium	CA	ICP	IP092175	2000.0	2065.47	103.3	2086.09	104.3	2081.00	104.1						
Chromium	CR	ICP	IP092175	1000.0	1037.42	103.7	1042.53	104.3	1042.76	104.3						
Copper	CU	ICP	IP092175	1000.0	1021.31	102.1	1013.40	101.3	1011.68	101.2						
Iron	FE	ICP	IP092175	2000.0	2009.50	100.5	2017.21	100.9	2011.95	100.6						
Lead	PB	PMS	MS100381	50.0	50.65	101.3	50.69	101.4	50.84	101.7	50.43	100.9				
Magnesium	MG	ICP	IP092175	2000.0	1978.97	98.9	1992.92	99.6	1993.15	99.7						
Manganese	MN	ICP	IP092175	1000.0	1011.15	101.1	968.40	96.8	1006.69	100.7						
Nickel	NI	ICP	IP092175	1000.0	992.85	99.3	989.84	99.0	987.03	98.7						
Potassium	K	ICP	IP092175	20000.0	21000.93	105.0	20764.40	103.8	20512.31	102.6						
Selenium	SE	ICP	IP092175	2000.0	1904.72	95.2	1850.05	92.5	1888.12	94.4						
Sodium	NA	ICP	IP092175	50000.0	48568.14	97.1	49504.50	99.0	49571.32	99.1						
Thallium	TL	ICP	IP092175	2000.0	1891.82	94.6	1827.15	91.4	1861.35	93.1						
Vanadium	V	ICP	IP092175	1000.0	967.11	96.7	961.29	96.1	965.41	96.5						
Zinc	ZN	ICP	IP092175	1000.0	975.21	97.5	983.95	98.4	983.44	98.3						

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

FORM II (1)

TM07 : 00127A

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TM07

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	MS092981	0.2	0.22	110.0										
Lead	PB	PMS	MS092981	0.1	0.11	110.0										
Silicon	SI	ICP	IP092071	60.0	65.02	108.4	81.44	135.7	87.09	145.2						
Aluminum	AL	ICP	IP092175	50.0	52.58	105.2	54.66	109.3	53.79	107.6	61.16	122.3				
Arsenic	AS	PMS	MS100381	0.2	0.21	105.0										
Cadmium	CD	ICP	IP092175	2.0	1.81	90.5	1.44	72.0	1.45	72.5	1.67	83.5				
Calcium	CA	ICP	IP092175	50.0	50.99	102.0	53.27	106.5	58.16	116.3	51.47	102.9				
Chromium	CR	ICP	IP092175	5.0	5.52	110.4	5.37	107.4	4.86	97.2	5.43	108.6				
Copper	CU	ICP	IP092175	2.0	2.07	103.5	2.17	108.5	2.20	110.0	2.43	121.5				
Iron	FE	ICP	IP092175	50.0	52.95	105.9	55.08	110.2	53.96	107.9	51.88	103.8				
Lead	PB	PMS	MS100381	0.1	0.11	110.0										
Magnesium	MG	ICP	IP092175	50.0	46.41	92.8	48.98	98.0	50.06	100.1	48.98	98.0				
Manganese	MN	ICP	IP092175	1.0	0.96	96.0	0.69	69.0	0.89	89.0	1.02	102.0				
Nickel	NI	ICP	IP092175	10.0	11.42	114.2	11.08	110.8	10.41	104.1	12.09	120.9				
Potassium	K	ICP	IP092175	500.0	550.53	110.1	570.92	114.2	566.99	113.4	550.96	110.2				
Selenium	SE	ICP	IP092175	50.0	52.45	104.9	58.23	116.5	56.95	113.9	51.70	103.4				
Sodium	NA	ICP	IP092175	500.0	512.22	102.4	556.63	111.3	745.39	149.1	747.08	149.4				
Thallium	TL	ICP	IP092175	50.0	44.45	88.9	40.61	81.2	38.78	77.6	43.49	87.0				
Vanadium	V	ICP	IP092175	3.0	2.58	86.0	2.58	86.0	2.67	89.0	2.63	87.7				
Zinc	ZN	ICP	IP092175	10.0	9.84	98.4	10.67	106.7	9.80	98.0	9.46	94.6				

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

FORM II (2)

TM07 : 00128

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TM07

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Arsenic	AS	PMS	MS092981	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Lead	PB	PMS	MS092981	3.0	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Silicon	SI	ICP	IP092071	60.0	60.0	60.0	U	60.0	U	60.0	U	60.0	U	60.0	U	60.0	U

TM07 . 00126

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS:ug/L

SDG: TM07

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB6	C	CCB7	C	CCB8	C	CCB9	C	CCB10	C	CCB11	C
Arsenic	AS	PMS	MS092981	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U				
Lead	PB	PMS	MS092981	3.0	0.1	0.1	U	0.1	U	0.1	U	0.1	U				
Silicon	SI	ICP	IP092071	60.0	60.0	60.0	U	60.0	U	60.0	U	60.0	U	60.0	U	60.0	U

TM07 : 00130

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TM07

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Aluminum	AL	ICP	IP092175	200.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Arsenic	AS	PMS	MS100381	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	IP092175	5.0	2.0	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Calcium	CA	ICP	IP092175	5000.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Chromium	CR	ICP	IP092175	10.0	5.0	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Copper	CU	ICP	IP092175	25.0	2.0	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Lead	PB	PMS	MS100381	3.0	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Magnesium	MG	ICP	IP092175	5000.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Nickel	NI	ICP	IP092175	40.0	10.0	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U
Potassium	K	ICP	IP092175	5000.0	500.0	500.0	U	500.0	U	500.0	U	500.0	U	500.0	U	500.0	U
Selenium	SE	ICP	IP092175	5.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Sodium	NA	ICP	IP092175	5000.0	500.0	500.0	U	500.0	U	500.0	U	500.0	U	500.0	U	500.0	U
Thallium	TL	ICP	IP092175	10.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Vanadium	V	ICP	IP092175	50.0	3.0	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
Zinc	ZN	ICP	IP092175	20.0	10.0	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U

TM07.00131

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS: ug/L

SDG: TM07

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB6	C	CCB7	C	CCB8	C	CCB9	C	CCB10	C	CCB11	C
Aluminum	AL	ICP	IP092175	200.0	50.0	50.0	U	50.0	U	50.0	U						
Arsenic	AS	PMS	MS100381	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U				
Cadmium	CD	ICP	IP092175	5.0	2.0	2.0	U	2.0	U	2.0	U						
Calcium	CA	ICP	IP092175	5000.0	50.0	50.0	U	50.0	U	50.0	U						
Chromium	CR	ICP	IP092175	10.0	5.0	5.0	U	5.0	U	5.0	U						
Copper	CU	ICP	IP092175	25.0	2.0	2.0	U	2.0	U	2.0	U						
Lead	PB	PMS	MS100381	3.0	0.1	0.1	U	0.1	U	0.1	U	0.1	U				
Magnesium	MG	ICP	IP092175	5000.0	50.0	50.0	U	50.0	U	50.0	U						
Nickel	NI	ICP	IP092175	40.0	10.0	10.0	U	10.0	U	10.0	U						
Potassium	K	ICP	IP092175	5000.0	500.0	500.0	U	500.0	U	500.0	U						
Selenium	SE	ICP	IP092175	5.0	50.0	50.0	U	50.0	U	50.0	U						
Sodium	NA	ICP	IP092175	5000.0	500.0	500.0	U	500.0	U	500.0	U						
Thallium	TL	ICP	IP092175	10.0	50.0	50.0	U	50.0	U	50.0	U						
Vanadium	V	ICP	IP092175	50.0	3.0	3.0	U	3.0	U	3.0	U						
Zinc	ZN	ICP	IP092175	20.0	10.0	10.0	U	10.0	U	10.0	U						

TM07 00132

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

SDG: TM07

ICS SOURCE: I.V.

RUNID: IP092071

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	199745.5	200676.1	**100.3**	186936.7	190508.9	**95.3**	190361.0	196213.4	**98.1**
Antimony		1000	101.2	1094.3	**109.4**	80.5	1042.6	**104.3**	81.8	964.8	**96.5**
Arsenic		1000	7.3	1028.7	**102.9**	1.8	995.5	**99.6**	5.4	925.5	**92.6**
Barium		1000	-1.5	1044.9	**104.5**	-1.9	1002.1	**100.2**	-0.9	1002.0	**100.2**
Beryllium		1000	0.1	1022.4	**102.2**	0.0	981.4	**98.1**	0.0	973.4	**97.3**
Boron			-6.8	-8.3		-9.3	-7.9		-9.6	-9.2	
Cadmium		1000	0.8	1077.3	**107.7**	0.0	1050.6	**105.1**	0.1	1002.0	**100.2**
Calcium	100000	100000	104585.8	104538.5	**104.5**	99951.9	101355.8	**101.4**	100482.8	100314.3	**100.3**
Chromium		1000	-1.3	1060.0	**106.0**	-1.5	1022.4	**102.2**	-1.7	1025.7	**102.6**
Cobalt		1000	2.7	1049.5	**105.0**	3.2	1043.5	**104.4**	3.0	992.2	**99.2**
Copper		1000	1.2	1090.4	**109.0**	0.9	1082.2	**108.2**	1.0	1040.4	**104.0**
Iron	200000	200000	203326.0	200559.4	**100.3**	191854.5	192630.0	**96.3**	194118.0	196434.8	**98.2**
Lead		1000	-8.2	1021.6	**102.2**	-6.3	997.8	**99.8**	-7.2	941.8	**94.2**
Magnesium	100000	100000	102583.4	99005.1	**99.0**	98639.6	95211.4	**95.2**	97575.6	97311.7	**97.3**
Manganese		1000	0.5	986.0	**98.6**	0.4	945.7	**94.6**	0.5	960.2	**96.0**
Molybdenum			2.8	3.6		1.8	2.1		1.0	1.3	
Nickel		1000	-1.7	991.5	**99.2**	-1.2	947.4	**94.7**	-0.5	950.7	**95.1**
Potassium			35.9	228.3		99.6	264.0		100.6	131.4	
Selenium		1000	-41.9	978.2	**97.8**	-24.8	942.4	**94.2**	-26.3	875.4	**87.5**
Silicon			-2.5	-5.1		19.4	12.2		18.4	14.5	
Silver		1000	0.6	1067.7	**106.8**	0.7	1029.3	**102.9**	0.5	984.9	**98.5**
Sodium			5.6	7.7		160.3	145.5		128.9	107.8	
Strontium			10.7	10.6		10.2	10.2		10.2	10.3	
Thallium		1000	35.2	1078.7	**107.9**	34.1	1045.1	**104.5**	32.9	982.0	**98.2**
Tin			1.5	2.3		1.5	2.2		3.1	2.8	
Titanium			-8.5	-8.7		-8.5	-9.0		-8.5	-8.6	
Vanadium		1000	0.7	1017.9	**101.8**	-0.9	1015.9	**101.6**	-1.6	965.3	**96.5**
Zinc		1000	0.9	982.7	**98.3**	0.9	950.9	**95.1**	0.9	951.3	**95.1**

TM07 : 00139

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

SDG: TM07

ICS SOURCE: I.V.

RUNID: MS092981

INSTRUMENT ID: PE ELAN 6000

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Antimony			0.1	0.1							
Cadmium		20	0.0	19.5	**97.5**						
Chromium		20	0.9	20.6	**103.0**						
Cobalt		20	0.0	19.5	**97.5**						
Copper		20	0.5	20.4	**102.0**						
Manganese		20	0.7	20.6	**103.0**						
Molybdenum	400	400	414.4	410.3	**102.6**						
Nickel		20	0.5	19.8	**99.0**						
Selenium			0.0	-0.1							
Silver		20	0.0	19.2	**96.0**						
Vanadium			0.0	-0.5							
Zinc		20	1.0	19.7	**98.5**						

TM07 : 00134

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ICS SOURCE: I.V.

PROJECT: FRP 2011 Shoreline I

RUNID: IP092175

SDG: TM07

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	198396.1	196836.9	**98.4**	195080.2	196515.1	**98.3**	195701.8	200310.1	**100.2**
Antimony		1000	100.6	1061.1	**106.1**	91.3	1032.6	**103.3**	87.5	1022.1	**102.2**
Arsenic		1000	5.0	1000.2	**100.0**	4.6	966.9	**96.7**	2.3	960.1	**96.0**
Barium		1000	-3.1	1004.3	**100.4**	-2.7	999.3	**99.9**	-2.2	1007.8	**100.8**
Beryllium		1000	0.1	983.5	**98.4**	0.1	981.0	**98.1**	0.0	979.6	**98.0**
Boron			-7.6	-7.3		-8.1	-6.9		-7.9	-7.0	
Cadmium		1000	0.5	1033.5	**103.4**	0.3	1017.5	**101.8**	0.5	1022.6	**102.3**
Calcium	100000	100000	102375.9	101814.8	**101.8**	102644.3	102776.2	**102.8**	101811.3	103747.3	**103.7**
Chromium		1000	-2.7	1023.5	**102.4**	-0.4	1031.3	**103.1**	-1.1	1037.7	**103.8**
Cobalt		1000	2.7	1006.2	**100.6**	2.8	1000.8	**100.1**	2.9	999.7	**100.0**
Copper		1000	0.3	1065.6	**106.6**	0.8	1067.4	**106.7**	1.2	1070.6	**107.1**
Iron	200000	200000	197741.8	193226.6	**96.6**	195326.8	193345.5	**96.7**	193410.4	195129.9	**97.6**
Lead		1000	-7.2	987.1	**98.7**	-5.7	967.6	**96.8**	-8.2	955.3	**95.5**
Magnesium	100000	100000	101395.3	96206.3	**96.2**	100271.0	96588.5	**96.6**	98684.9	97935.7	**97.9**
Manganese		1000	0.3	957.3	**95.7**	0.3	945.6	**94.6**	0.3	957.2	**95.7**
Molybdenum			3.7	4.0		3.1	2.9		2.7	2.7	
Nickel		1000	-1.5	939.3	**93.9**	-0.5	937.2	**93.7**	-0.3	937.4	**93.7**
Potassium			51.5	225.6		86.4	249.6		98.8	260.7	
Selenium		1000	-36.4	958.4	**95.8**	-33.3	930.9	**93.1**	-30.8	909.5	**91.0**
Silicon			-7.0	-4.7		11.7	4.4		2.6	-2.1	
Silver		1000	0.4	1035.8	**103.6**	0.6	1007.4	**100.7**	0.6	1012.6	**101.3**
Sodium			13.0	6.9		80.2	77.2		219.9	199.7	
Strontium			10.5	10.3		10.4	10.4		10.1	10.3	
Thallium		1000	38.1	1029.2	**102.9**	29.2	1002.2	**100.2**	33.0	993.0	**99.3**
Tin			3.3	1.4		1.8	2.7		2.3	1.9	
Titanium			-8.0	-8.3		-8.6	-8.4		-8.7	-8.7	
Vanadium		1000	3.9	985.4	**98.5**	0.7	984.9	**98.5**	0.4	988.7	**98.9**
Zinc		1000	0.4	921.9	**92.2**	0.5	930.5	**93.1**	0.4	936.2	**93.6**

TM07 00135

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

SDG: TM07

ICS SOURCE: I.V.

RUNID: MS100381

INSTRUMENT ID: PE ELAN 6000

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Antimony			0.1	0.1							
Cadmium		20	0.0	19.5	**97.5**						
Chromium		20	0.8	20.7	**103.5**						
Cobalt		20	0.1	19.5	**97.5**						
Copper		20	0.5	20.3	**101.5**						
Iron	20000	20000	20057.7	20179.4	**100.9**						
Manganese		20	0.9	20.6	**103.0**						
Molybdenum	400	400	418.8	422.5	**105.6**						
Nickel		20	0.6	20.1	**100.5**						
Silver		20	0.0	19.1	**95.5**						
Vanadium			0.0	-0.4							
Zinc		20	0.9	19.9	**99.5**						

TM07 00135

Post Digest Spike Sample Recovery

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

ANALYSIS METHOD: ICP

SDG: TM07

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	RUNID	SPIKED SAMPLE RESULT	C	SAMPLE RESULT	C	SPIKE ADDED	MATRIX	%R
Selenium	FRP-091311-002A	TM07BPOST	IP092175	1933.88		50.00	U	2000	Water	96.7

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

ANALYSIS METHOD: ICP

SDG: TM07

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	MATRIX	RUNID	INITIAL SAMPLE RESULT (I)	C	SERIAL DILUTION RESULT (S)	C	% DIFFER-ENCE	Q
Aluminum	FRP-091311-002L	TM07B-L	Water	IP092175	21493.89		21402.15		0.4	
Cadmium	FRP-091311-002L	TM07B-L	Water	IP092175	-0.49	U	10.00	U		
Calcium	FRP-091311-002L	TM07B-L	Water	IP092175	23459.40		24310.30	B	3.6	
Chromium	FRP-091311-002L	TM07B-L	Water	IP092175	47.14		46.55	B	1.3	
Copper	FRP-091311-002L	TM07B-L	Water	IP092175	51.25		50.25	B	2.0	
Iron	FRP-091311-002L	TM07B-L	Water	IP092175	15973.80		16131.25		1.0	
Magnesium	FRP-091311-002L	TM07B-L	Water	IP092175	4320.12	B	4656.25	B	7.8	
Manganese	FRP-091311-002L	TM07B-L	Water	IP092175	236.42		248.30		5.0	
Nickel	FRP-091311-002L	TM07B-L	Water	IP092175	16.03	B	50.00	U	100.0	
Potassium	FRP-091311-002L	TM07B-L	Water	IP092175	2767.66	B	3106.60	B	12.2	
Selenium	FRP-091311-002L	TM07B-L	Water	IP092175	7.67	U	250.00	U		
Sodium	FRP-091311-002L	TM07B-L	Water	IP092175	338804.83		343100.00		1.3	
Thallium	FRP-091311-002L	TM07B-L	Water	IP092175	-0.97	U	250.00	U		
Vanadium	FRP-091311-002L	TM07B-L	Water	IP092175	158.94		160.90	B	1.2	
Zinc	FRP-091311-002L	TM07B-L	Water	IP092175	32.78		50.00	U	100.0	

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

ANALYSIS METHOD: PMS

SDG: TM07

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	MATRIX	RUNID	INITIAL SAMPLE RESULT (I)	C	SERIAL DILUTION RESULT (S)	C	% DIFFER-ENCE	Q
Arsenic	FRP-091311-002L	TM07B-L	Water	MS092981	5.65	B	5.70	B	0.9	
Lead	FRP-091311-002L	TM07B-L	Water	MS092981	1.79	B	1.85	B	3.4	

IDLs and ICP Linear Ranges

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

SDG: TM07

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
Calcium	CA	ICP	OPTIMA ICP 2	317.93		5000	50.0	4/1/2011	500000.0	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
Iron	FE	ICP	OPTIMA ICP 2	259.94		100	50.0	4/1/2011	250000.0	8/3/2011
Lead	PB	PMS	PE ELAN 6000 MS	0.00		3	0.1	4/1/2011		
Magnesium	MG	ICP	OPTIMA ICP 2	279.08		5000	50.0	4/1/2011	500000.0	8/3/2011
Manganese	MN	ICP	OPTIMA ICP 2	257.61		15	1.0	4/1/2011	30000.0	8/3/2011
Nickel	NI	ICP	OPTIMA ICP 2	231.60		40	10.0	4/1/2011	100000.0	8/3/2011
Potassium	K	ICP	OPTIMA ICP 2	766.49		5000	500.0	4/1/2011	500000.0	8/3/2011
Selenium	SE	ICP	OPTIMA ICP 2	196.02		5	50.0	4/1/2011	20000.0	8/3/2011
Silicon	SI	ICP	OPTIMA ICP 2	288.16		60	60.0	4/1/2011	90000.0	8/3/2011
Sodium	NA	ICP	OPTIMA ICP 2	589.00		5000	500.0	4/1/2011	5000000.0	8/3/2011
Thallium	TL	ICP	OPTIMA ICP 2	190.86		10	50.0	4/1/2011	30000.0	8/3/2011
Vanadium	V	ICP	OPTIMA ICP 2	292.40		50	3.0	4/1/2011	50000.0	8/3/2011
Zinc	ZN	ICP	OPTIMA ICP 2	213.86		20	10.0	4/1/2011	100000.0	8/3/2011

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

IEC DATE: 9/7/2011

SDG: TM07

INSTRUMENT ID: OPTIMA ICP 2

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

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

IEC DATE: 9/7/2011

SDG: TM07

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	MG	MN	MO	NI	PB	SB	TI	TL	V	ZN
Aluminum	308.22	0.0000000	0.0000000	15.3131000	0.0000000	0.0000000	0.0000000	1.5167500	0.0000000	17.6996000	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	-0.4730780	0.0000000	0.0000000	-0.8897510	0.0000000	-3.3546800	0.0000000
Arsenic	188.98	0.0000000	0.0000000	2.3330800	0.0000000	0.0000000	0.0000000	-5.4412000	0.0000000	0.0000000	0.0000000
Barium	233.53	0.0000000	0.0000000	0.0000000	0.0766262	0.0000000	0.0000000	0.0000000	0.0000000	0.6419380	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.2960780	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000000	-0.7324130	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0581570	0.0000000	0.1395070	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.2773470	0.0000000
Cobalt	228.62	0.0000000	0.0000000	-0.1579570	0.1588330	0.0000000	0.0000000	1.8115900	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0080384	0.0000000	0.2688440	0.0000000	0.0000000	0.0000000	0.2461180	0.0000000	0.0000000	0.0000000
Iron	273.96	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	8.4403600	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	-4.6256200	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0048376	0.0000000	0.0000000	0.0000000	-0.2175850	0.0000000	0.0000000	0.0000000	-0.0271775	0.0000000
Molybdenum	202.03	0.0148620	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.7744280	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0735290	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	288.16	-0.1460000	0.0000000	-2.7358100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.2442620	0.2419260	0.0000000	0.0000000	0.0000000	-0.0470302	0.0000000	-0.2758080	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	242.4230000	0.0000000	0.0000000	318.1570000
Thallium	190.80	0.0000000	-1.4179000	1.9562000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	1.2892100	0.0000000
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.5848020	-0.3044710	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	0.9873960	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	-0.1398510	-0.6804250	0.0000000	0.0000000	0.0000000	0.6004670	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.2377960	0.0000000	-0.0708227	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

SDG: TM07

ANALYSIS METHOD: ICP

ARI PREP CODE: TWC

PREPDATE: 9/16/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-091311-001	TM07A	0.000	50.0	50.0
FRP-091311-002	TM07B	0.000	50.0	50.0
FRP-091311-002D	TM07BDUP	0.000	50.0	50.0
FRP-091311-002S	TM07BSPK	0.000	50.0	50.0
FRP-091311-003	TM07C	0.000	50.0	50.0
FRP-091311-004	TM07D	0.000	50.0	50.0
FRP-091311-005	TM07E	0.000	50.0	50.0
FRP-091311-006	TM07F	0.000	50.0	50.0
FRP-091311-007	TM07G	0.000	50.0	50.0
FRP-091311-008	TM07H	0.000	50.0	50.0
FRP-091311-009	TM07I	0.000	50.0	50.0
FRP-091311-010	TM07J	0.000	50.0	50.0
FRP-091311-002	TM07L	0.000	50.0	50.0
FRP-091311-003	TM07M	0.000	50.0	50.0
PBW	TM07MB1	0.000	50.0	50.0
LCSW	TM07MB1SPK	0.000	50.0	50.0
PBW	TM07MB2	0.000	50.0	50.0
LCSW	TM07MB2SPK	0.000	50.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ANALYSIS METHOD: PMS

PROJECT: FRP 2011 Shoreline I

ARI PREP CODE: REN

SDG: TM07

PREPDATE: 9/16/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-091311-001	TM07A	0.000	50.0	25.0
FRP-091311-002	TM07B	0.000	50.0	25.0
FRP-091311-002D	TM07BDUP	0.000	50.0	25.0
FRP-091311-002S	TM07BSPK	0.000	50.0	25.0
FRP-091311-003	TM07C	0.000	50.0	25.0
FRP-091311-004	TM07D	0.000	50.0	25.0
FRP-091311-005	TM07E	0.000	50.0	25.0
FRP-091311-006	TM07F	0.000	50.0	25.0
FRP-091311-007	TM07G	0.000	50.0	25.0
FRP-091311-008	TM07H	0.000	50.0	25.0
FRP-091311-009	TM07I	0.000	50.0	25.0
FRP-091311-010	TM07J	0.000	50.0	25.0
PBW	TM07MB1	0.000	50.0	25.0
LCSW	TM07MB1SPK	0.000	50.0	25.0

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/20/2011

SDG: TM07 RUNID: IP092071 METHOD: ICP END DATE: 9/20/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	11261																								X						
S2	S2	1.00	11302																														
S3	S3	1.00	11320																														
S4	S4	1.00	11343																								X						
S5	S5	1.00	11364																														
ICV	ICV	1.00	11385																								X						
ICB	ICB	1.00	11423																								X						
CRI	CRII	1.00	11464																								X						
ICSA	ICSAI	1.00	11505																								X						
ICSAB	ICSABI	1.00	11551																								X						
CCV	CCV1	1.00	11585																								X						
CCB	CCB1	1.00	12023																								X						
ZZZZZZ	TM64MB2	5.00	12064																														
ZZZZZZ	TM50MB2	5.00	12111																														
ZZZZZZ	TM50Bt	5.00	12154																														
ZZZZZZ	TM50AtDUP	5.00	12200																														
ZZZZZZ	TM50At	5.00	12241																														
ZZZZZZ	TM50AtSPK	5.00	12282																														
ZZZZZZ	TM64B	5.00	12324																														
ZZZZZZ	TM64AtDUP	5.00	12365																														
ZZZZZZ	TM64At	5.00	12410																														
ZZZZZZ	TM64AtSPK	5.00	12452																														
CCV	CCV2	1.00	12493																								X						
CCB	CCB2	1.00	12532																								X						
ZZZZZZ	DICHECK	1.00	12573																														
ZZZZZZ	TM02MB1	2.00	13014																														
ZZZZZZ	TL76A	1.00	13055																														
ZZZZZZ	TL76B	1.00	13101																														
ZZZZZZ	TL76C	1.00	13142																														
ZZZZZZ	TL76D	1.00	13182																														
ZZZZZZ	TM02ADUP	2.00	13225																														
ZZZZZZ	TM02A	5.00	13290																														
ZZZZZZ	TM02ASPK	5.00	13330																														
ZZZZZZ	TM02MB1SPK	2.00	13364																														
CCV	CCV3	1.00	13404																								X						

FORM XIV

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/20/2011

SDG: TM07 RUNID: IP092071 METHOD: ICP END DATE: 9/20/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
CCB	CCB3	1.00	13442																								X						
ZZZZZZ	TL76MB1	1.00	13483																														
ZZZZZZ	TL76MB2	1.00	13524																														
ZZZZZZ	TL76G-L	5.00	13565																														
ZZZZZZ	TL76G	1.00	14013																														
ZZZZZZ	TL76GDUP	1.00	14052																														
ZZZZZZ	TL76GSPK	1.00	14092																														
ZZZZZZ	TL76E	1.00	14124																														
ZZZZZZ	TL76F	1.00	14170																														
ZZZZZZ	TL76MB1SPK	1.00	14212																														
ZZZZZZ	TL76MB2SPK	1.00	14251																														
CCV	CCV4	1.00	14292																								X						
CCB	CCB4	1.00	14331																								X						
ZZZZZZ	ZZZZZZ	5.00	14372																														
ZZZZZZ	TL89A	1.00	14413																														
ZZZZZZ	TL89ADUP	1.00	14455																														
ZZZZZZ	TL89ASPK	1.00	14501																														
ZZZZZZ	TL89B	1.00	14542																														
ZZZZZZ	TL89C	1.00	14585																														
ZZZZZZ	TL89D	1.00	15030																														
ZZZZZZ	TL89F	1.00	15073																														
ZZZZZZ	TL76I	1.00	15120																														
ZZZZZZ	TL89MB1SPK	1.00	15160																														
CCV	CCV5	1.00	15195																								X						
CCB	CCB5	1.00	15234																								X						
ZZZZZZ	TL89MB1	1.00	15275																														
ZZZZZZ	TL89MB2	1.00	15320																														
ZZZZZZ	TL89MB3	1.00	15361																														
ZZZZZZ	TL89G	1.00	15403																														
ZZZZZZ	TL76B	2.00	15445																														
ZZZZZZ	TL76C	5.00	15485																														
ZZZZZZ	TM02ADUP	5.00	15531																														
ZZZZZZ	TL89MB2SPK	1.00	15571																														
ZZZZZZ	TL89MB3SPK	1.00	16011																														
CCV	CCV6	1.00	16052																								X						

FORM XIV

TM07 : 00115

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I | INSTRUMENT ID: OPTIMA ICP 2 | START DATE: 9/20/2011

SDG: TM07 | RUNID: IP092071 METHOD: ICP | END DATE: 9/20/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
CCB	CCB6	1.00	16090																								X						
CRI	CRIF	1.00	16131																								X						
ICSA	ICSAF	1.00	16173																								X						
ICSAB	ICSABF	1.00	16214																								X						
CCV	CCV7	1.00	16252																								X						
CCB	CCB7	1.00	16291																								X						
ZZZZZZ	TL91MB	2.00	16332																														
ZZZZZZ	ZZZZZZ	5.00	16373																														
FRP-091311-002	TM07B	1.00	16414																														
FRP-091311-002D	TM07BDUP	1.00	16461																														
FRP-091311-002S	TM07BSPK	1.00	16504																														
FRP-091311-001	TM07A	1.00	16545																														
FRP-091311-003	TM07C	1.00	16592																														
FRP-091311-004	TM07D	1.00	17035																														
ZZZZZZ	TL91A	2.00	17083																														
ZZZZZZ	TL91MBSPK	2.00	17122																														
CCV	CCV8	1.00	17162																								X						
CCB	CCB8	1.00	17200																								X						
FRP-091311-005	TM07E	1.00	17242																														
FRP-091311-006	TM07F	1.00	17285																														
FRP-091311-007	TM07G	1.00	17332																														
FRP-091311-008	TM07H	1.00	17380																														
FRP-091311-009	TM07I	1.00	17422																														
FRP-091311-010	TM07J	1.00	17464																														
FRP-091311-002	TM07L	1.00	17505																								X						
FRP-091311-003	TM07M	1.00	17552																								X						
LCSW	TM07MB1SPK	1.00	17595																														
LCSW	TM07MB2SPK	1.00	18034																								X						
CCV	CCV9	1.00	18075																								X						
CCB	CCB9	1.00	18114																								X						
PBW	TM07MB1	1.00	18155																														
PBW	TM07MB2	1.00	18200																								X						
ZZZZZZ	TL89ASPK	1.00	18241																														
ZZZZZZ	ZZZZZZ	1.00	18282																														
ZZZZZZ	ZZZZZZ	1.00	18323																														

FORM XIV

TM07 : 051197

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/20/2011

SDG: TM07 RUNID: IP092071 METHOD: ICP END DATE: 9/20/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
CCV	CCV10	1.00	18364																								X						
CCB	CCB10	1.00	18403																								X						
CRI	CRIF1	1.00	18444																								X						
ICSA	ICSAF1	1.00	18485																								X						
ICSAB	ICSABF1	1.00	18530																								X						
CCV	CCV11	1.00	18570																								X						
CCB	CCB11	1.00	19004																								X						

TM07 : 001148

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/21/2011

SDG: TM07 RUNID: IP092175 METHOD: ICP END DATE: 9/21/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	11155			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
S2	S2	1.00	11200									X		X	X					X												X	
S3	S3	1.00	11215																				X			X				X			X
S4	S4	1.00	11241																														
S5	S5	1.00	11262			X					X					X		X	X			X											
ICV	ICV	1.00	11300			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
ICB	ICB	1.00	11335			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
CR1	CRII	1.00	11380			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
ICSA	ICSAI	1.00	11421			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
ICSAB	ICSAB1	1.00	11460			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
CCV	CCV1	1.00	11495			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
CCB	CCB1	1.00	11533			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
PBW	TM07MB1	1.00	11574			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
ZZZZZZ	TM97MB1	2.00	12020																														
ZZZZZZ	TM92MB	5.00	12061																														
ZZZZZZ	TM92ADUP	5.00	12104																														
ZZZZZZ	TM92A	5.00	12150																														
ZZZZZZ	TM92ASPK	5.00	12193																														
ZZZZZZ	TM97ADUP	2.00	12240																														
ZZZZZZ	TM97A	2.00	12274																														
ZZZZZZ	TM97ASPK	2.00	12314																														
ZZZZZZ	TM97MB1SPK	2.00	12353																														
CCV	CCV2	1.00	12392			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
CCB	CCB2	1.00	12431			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
ZZZZZZ	TL89A-L	5.00	12472																														
ZZZZZZ	TL89A	1.00	12513																														
ZZZZZZ	TL89ADUP	1.00	12555																														
ZZZZZZ	TL89ASPK	1.00	13001																														
ZZZZZZ	TL89APOST	1.00	13042																														
FRP-091311-002L	TM07B-L	5.00	13083			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
FRP-091311-002	TM07B	1.00	13124			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
FRP-091311-002D	TM07BDUP	1.00	13171			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
FRP-091311-002S	TM07BSPK	1.00	13214			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
FRP-091311-002A	TM07BPOST	1.00	13255																							X							
CCV	CCV3	1.00	13301			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X

FORM XIV

TM07 : 091150

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/21/2011

SDG: TM07 RUNID: IP092175 METHOD: ICP END DATE: 9/21/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
CCB	CCB3	1.00	13335			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
CRI	CRIF	1.00	13380			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
ICSA	ICSAF	1.00	13421			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
ICSAB	ICSABF	1.00	13463			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
CCV	CCV4	1.00	13501			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
CCB	CCB4	1.00	13535			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
ZZZZZZ	TN08MB	2.00	13581																														
FRP-091311-001	TM07A	1.00	14022			X						X		X	X								X			X				X		X	X
FRP-091311-003	TM07C	1.00	14065			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
FRP-091311-004	TM07D	1.00	14111			X						X		X	X								X			X				X		X	X
FRP-091311-005	TM07E	1.00	14155			X						X		X	X								X			X				X		X	X
FRP-091311-006	TM07F	1.00	14203			X						X		X	X								X			X				X		X	X
FRP-091311-007	TM07G	1.00	14251			X						X		X	X								X			X				X		X	X
FRP-091311-008	TM07H	1.00	14294			X						X		X	X								X			X				X		X	X
ZZZZZZ	TN08A	2.00	14341																														
ZZZZZZ	TN08MBSPK	2.00	14380																														
CCV	CCV5	1.00	14420			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
CCB	CCB5	1.00	14455			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
ZZZZZZ	TM24B-L	5.00	14500																														
ZZZZZZ	TM24B	1.00	14542																														
ZZZZZZ	TM24BDUP	1.00	14581																														
ZZZZZZ	TM24BSPK	1.00	15021																														
ZZZZZZ	TM24BPOST	1.00	15060																														
ZZZZZZ	TM24A	1.00	15094																														
ZZZZZZ	TM24C	1.00	15142																														
FRP-091311-009	TM07I	1.00	15183			X						X		X	X								X			X				X		X	X
FRP-091311-010	TM07J	1.00	15230			X						X		X	X								X			X				X		X	X
LCSW	TM07MB1SPK	1.00	15271			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
CCV	CCV6	1.00	15311			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
CCB	CCB6	1.00	15345			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
ZZZZZZ	TM24MB1	1.00	15390																														
ZZZZZZ	TM24MB2	1.00	15432																														
ZZZZZZ	TM24D	1.00	15473																														
ZZZZZZ	TM24F	1.00	15513																														
ZZZZZZ	TM24MB1SPK	1.00	15554																														

FORM XIV

TM07 : 00015007

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/21/2011

SDG: TM07 RUNID: IP092175 METHOD: ICP END DATE: 9/21/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	TM24MB2SPK	1.00	15594																														
ZZZZZZ	TM24D	2.00	16064																														
ZZZZZZ	D1	1.00	16103																														
ZZZZZZ	TM24MB2SPK	1.00	16144																														
CCV	CCV7	1.00	16185			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
CCB	CCB7	1.00	16223			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
ZZZZZZ	ZZZZZZ	1.00	16265																														
CRI	CRIF1	1.00	16312			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
ICSA	ICSAF1	1.00	16353			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
ICSAB	ICSABF1	1.00	16394			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
CCV	CCV8	1.00	16433			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X
CCB	CCB8	1.00	16471			X					X	X		X	X	X		X	X	X		X	X			X				X		X	X

TM07 00151

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/29/2011

SDG: TM07 RUNID: MS092981 METHOD: PMS END DATE: 9/29/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	09090				X																	X									
S1	S1	1.00	09150				X																	X									
S2	S2	1.00	09220				X																	X									
S3	S3	1.00	09290				X																	X									
S4	S4	1.00	09350				X																	X									
ZZZZZZ	Rinse Sampl	1.00	09430																														
ICV	MICV	1.00	09510				X																	X									
ICB	ICB	1.00	09590				X																	X									
CCV	MCCV1	1.00	10050				X																	X									
CCB	CCB1	1.00	10120				X																	X									
CRI	MCRI	1.00	10180				X																	X									
ICSA	ICSAI	1.00	10250				X																	X									
ICSAB	ICSABI	1.00	10320				X																	X									
ZZZZZZ	LR200	1.00	10390																														
ZZZZZZ	LR300	1.00	10440																														
CCV	MCCV2	1.00	10510				X																	X									
CCB	CCB2	1.00	10590				X																	X									
ZZZZZZ	TN22MB1	20.00	11080																														
ZZZZZZ	TN22MB1SPK	20.00	11140																														
ZZZZZZ	TL50N-L	25.00	11200																														
ZZZZZZ	TL50N	5.00	11270																														
ZZZZZZ	TN22A-L	100.00	11340																														
ZZZZZZ	TN22A	20.00	11400																														
ZZZZZZ	TN22ADUP	20.00	11470																														
ZZZZZZ	TN22ASPK	20.00	11540																														
ZZZZZZ	ZZZZZZ	20.00	12000																														
ZZZZZZ	TN22B	20.00	12070																														
CCV	MCCV3	1.00	12130				X																	X									
CCB	CCB3	1.00	12210				X																	X									
ZZZZZZ	TN44MB1	20.00	12290																														
ZZZZZZ	TN39MB1	20.00	12460																														
ZZZZZZ	TN39MB1SPK	20.00	12520																														
ZZZZZZ	TN39REF1	50.00	12590																														
ZZZZZZ	TN39ADUP	20.00	13060																														
ZZZZZZ	TN39A	20.00	13120																														

FORM XIV

TM07.00132

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I | INSTRUMENT ID: PE ELAN 6000 MS | START DATE: 9/29/2011

SDG: TM07 | RUNID: MS092981 METHOD: PMS | END DATE: 9/29/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	TN39ASPK	20.00	13190																														
ZZZZZZ	TN39REF1	50.00	13260																														
ZZZZZZ	TN39B	20.00	13320																														
ZZZZZZ	TM01D	50.00	13390																														
CCV	MCCV4	1.00	13450				X																	X									
CCB	CCB4	1.00	13530				X																	X									
ZZZZZZ	TN44MB1SPK	20.00	14010																														
ZZZZZZ	TN44ADUP	20.00	14080																														
ZZZZZZ	TN44A	20.00	14150																														
ZZZZZZ	TN44ASPK	20.00	14210																														
ZZZZZZ	TN44APOST	20.00	14280																														
ZZZZZZ	TN44B	20.00	14340																														
ZZZZZZ	TN44C	20.00	14410																														
ZZZZZZ	TN44D	20.00	14480																														
ZZZZZZ	TN44E	20.00	14540																														
ZZZZZZ	TN44F	20.00	15010																														
CCV	MCCV5	1.00	15080				X																	X									
CCB	CCB5	1.00	15150				X																	X									
ZZZZZZ	TN71MB1	2.00	15540																														
ZZZZZZ	TN71MB2	2.00	16010																														
ZZZZZZ	TN88MB	20.00	16070																														
ZZZZZZ	TN88MBSPK	20.00	16130																														
ZZZZZZ	TN71MB1SPK	2.00	16200																														
ZZZZZZ	TN71MB2SPK	2.00	16270																														
ZZZZZZ	TN71A	2.00	16330																														
ZZZZZZ	TN71B	2.00	16400																														
ZZZZZZ	TN88A	20.00	16460																														
ZZZZZZ	TL92A	20.00	16530																														
CCV	MCCV6	1.00	17000				X																	X									
CCB	CCB6	1.00	17070				X																	X									
ZZZZZZ	TL92MB1	20.00	17130																														
ZZZZZZ	TM09MB1	2.00	17190																														
ZZZZZZ	TM09MB1SPK	2.00	17250																														
ZZZZZZ	TL76A	5.00	17320																														
ZZZZZZ	TL76G-L	50.00	17390																														

FORM XIV

1M07 : 00153

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/29/2011

SDG: TM07 RUNID: MS092981 METHOD: PMS END DATE: 9/29/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	TL76G	10.00	17450																														
ZZZZZZ	TL76GDUP	10.00	17520																														
ZZZZZZ	TL76GSPK	10.00	17590																														
ZZZZZZ	TM09A	2.00	18050																														
ZZZZZZ	TM09B	2.00	18120																														
CCV	MCCV7	1.00	18180				X																	X									
CCB	CCB7	1.00	18260				X																	X									
PBW	TM07MB1	2.00	18320				X																	X									
LCSW	TM07MB1SPK	2.00	18380				X																	X									
FRP-091311-002L	TM07B-L	25.00	18450				X																	X									
FRP-091311-002	TM07B	5.00	18510				X																	X									
FRP-091311-002D	TM07BDUP	5.00	18580				X																	X									
FRP-091311-002S	TM07BSPK	5.00	19040				X																	X									
FRP-091311-001	TM07A	5.00	19110				X																	X									
FRP-091311-010	TM07J	5.00	19180																														
ZZZZZZ	TL76B	20.00	19240																														
ZZZZZZ	TL76C	20.00	19310																														
CCV	MCCV8	1.00	19380				X																	X									
CCB	CCB8	1.00	19450				X																	X									
ZZZZZZ	TM24MB1	2.00	19510																														
ZZZZZZ	TM24MB1SPK	2.00	19570																														
FRP-091311-003	TM07C	10.00	20040				X																	X									
FRP-091311-004	TM07D	10.00	20100				X																	X									
FRP-091311-005	TM07E	10.00	20170				X																	X									
FRP-091311-006	TM07F	5.00	20240				X																	X									
FRP-091311-007	TM07G	5.00	20300				X																	X									
FRP-091311-008	TM07H	10.00	20370				X																	X									
FRP-091311-009	TM07I	5.00	20430				X																	X									
ZZZZZZ	TM24A	5.00	20500																														
CCV	MCCV9	1.00	20570				X																	X									
CCB	CCB9	1.00	21040				X																	X									

TM07 : 00154

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I | INSTRUMENT ID: PE ELAN 6000 MS | START DATE: 10/3/2011

SDG: TM07 | RUNID: MS100381 METHOD: PMS | END DATE: 10/3/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	08560				X																	X									
S1	S1	1.00	09030				X																	X									
S2	S2	1.00	09090				X																	X									
S3	S3	1.00	09160				X																	X									
S4	S4	1.00	09230				X																	X									
ZZZZZZ	Rinse Sampl	1.00	09310																														
ICV	MICV	1.00	09420				X																	X									
ICB	ICB	1.00	09520				X																	X									
CCV	MCCV1	1.00	09590				X																	X									
CCB	CCB1	1.00	10060				X																	X									
CRI	MCRI	1.00	10140				X																	X									
ICSA	ICSAI	1.00	10210				X																	X									
ICSAB	ICSABI	1.00	10290				X																	X									
ZZZZZZ	LR200	1.00	10370																														
ZZZZZZ	LR300	1.00	10440																														
CCV	MCCV2	1.00	10520				X																	X									
CCB	CCB2	1.00	11000				X																	X									
ZZZZZZ	TN71MB1	2.00	11080																														
ZZZZZZ	TM09MB1	2.00	11140																														
ZZZZZZ	TO74MB	2.00	11200																														
ZZZZZZ	TO74MBSPK	2.00	11260																														
ZZZZZZ	TM09MB1SPK	2.00	11320																														
ZZZZZZ	TO74C	2.00	11390																														
ZZZZZZ	TM09A	2.00	11460																														
ZZZZZZ	TM09B	2.00	11520																														
ZZZZZZ	TM47D	20.00	11590																														
ZZZZZZ	TM48C	20.00	12060																														
CCV	MCCV3	1.00	12130				X																	X									
CCB	CCB3	1.00	12200				X																	X									
ZZZZZZ	TO07MB1	2.00	12270																														
ZZZZZZ	TO07MB2	2.00	12330																														
ZZZZZZ	TO07MB1SPK	2.00	12390																														
ZZZZZZ	TO07MB2SPK	2.00	12460																														
ZZZZZZ	TO07A	2.00	12520																														
ZZZZZZ	TO07B	2.00	12590																														

FORM XIV

1167 : 00155

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: PE ELAN 6000 MS START DATE: 10/3/2011

SDG: TM07 RUNID: MS100381 METHOD: PMS END DATE: 10/3/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	TO07C	2.00	13060																														
ZZZZZZ	TO07D	2.00	13130																														
ZZZZZZ	TO07E	2.00	13190																														
ZZZZZZ	TO07F	2.00	13260																														
CCV	MCCV4	1.00	13330				X																	X									
CCB	CCB4	1.00	13400				X																	X									
ZZZZZZ	TO04MB1	2.00	13480																														
ZZZZZZ	TO04MB2	2.00	13540																														
ZZZZZZ	TO04MB1SPK	2.00	14000																														
ZZZZZZ	TO04MB2SPK	2.00	14060																														
ZZZZZZ	TM48BDUP	20.00	14130																														
ZZZZZZ	TM48B	20.00	14200																														
ZZZZZZ	TM48BSPK	20.00	14270																														
ZZZZZZ	TM47CDUP	20.00	14330																														
ZZZZZZ	TM47C	20.00	14400																														
ZZZZZZ	TM47CSPK	20.00	14470																														
CCV	MCCV5	1.00	14540				X																	X									
CCB	CCB5	1.00	15010				X																	X									
ZZZZZZ	TO32MB1	2.00	15200																														
ZZZZZZ	TO32MB2	2.00	15260																														
ZZZZZZ	TO32MB1SPK	2.00	15320																														
ZZZZZZ	TO32MB2SPK	2.00	15380																														
ZZZZZZ	TO32A	2.00	15450																														
ZZZZZZ	TO32B	2.00	15520																														
ZZZZZZ	TO32C	2.00	15580																														
ZZZZZZ	TO32D	2.00	16050																														
ZZZZZZ	TO04B	2.00	16120																														
ZZZZZZ	TO04C	2.00	16190																														
CCV	MCCV6	1.00	16250				X																	X									
CCB	CCB6	1.00	16330				X																	X									
ZZZZZZ	TO43MB	2.00	16390																														
ZZZZZZ	TO43MBSPK	2.00	16450																														
ZZZZZZ	TO43A	2.00	16510																														
ZZZZZZ	TO43B	2.00	16580																														
ZZZZZZ	TO32E	2.00	17050																														

FORM XIV

TM07 : 00156

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: PE ELAN 6000 MS START DATE: 10/3/2011

SDG: TM07 RUNID: MS100381 METHOD: PMS END DATE: 10/3/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	TO32F	2.00	17120																														
ZZZZZZ	TO32G	2.00	17180																														
ZZZZZZ	TO32H	2.00	17250																														
ZZZZZZ	TO32I	2.00	17320																														
ZZZZZZ	TO32J	2.00	17380																														
CCV	MCCV7	1.00	17450				X																	X									
CCB	CCB7	1.00	17530				X																	X									
ZZZZZZ	TO26MB1	2.00	17580																														
ZZZZZZ	TO26MB2	2.00	18040																														
ZZZZZZ	TO26MB1SPK	2.00	18100																														
ZZZZZZ	TO26MB2SPK	2.00	18170																														
ZZZZZZ	TO26A	2.00	18240																														
ZZZZZZ	TO26B	2.00	18300																														
ZZZZZZ	TO26C	2.00	18370																														
ZZZZZZ	TO26D	2.00	18440																														
ZZZZZZ	TO26E	2.00	18510																														
ZZZZZZ	TO26F	2.00	18570																														
CCV	MCCV8	1.00	19040				X																	X									
CCB	CCB8	1.00	19120				X																	X									
ZZZZZZ	TO07MB2	2.00	19170																														
ZZZZZZ	TO25MB1	2.00	19230																														
ZZZZZZ	TO25MB2	2.00	19290																														
ZZZZZZ	TO25MB1SPK	2.00	19350																														
ZZZZZZ	TO25MB2SPK	2.00	19420																														
ZZZZZZ	TO26G	2.00	19490																														
ZZZZZZ	TO26H	2.00	19550																														
ZZZZZZ	TO25A	2.00	20020																														
ZZZZZZ	TO25B	2.00	20090																														
FRP-091311-010	TM07J	2.00	20150				X																	X									
CCV	MCCV9	1.00	20220				X																	X									
CCB	CCB9	1.00	20300				X																	X									

TM07 : 00157

Mercury Analysis
Report and Summary QC Forms

ARI Job ID: TM07, TM08

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

SDG: TM08

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
FRP-091311-001	TM08A	11-19896	
FRP-091311-001D	TM08ADUP	11-19896	
FRP-091311-001S	TM08ASPK	11-19896	
FRP-091311-002	TM08B	11-19897	
PBW	TM08MB1	11-19897	
LCSW	TM08MB1SPK	11-19897	
FRP-091311-003	TM08C	11-19898	
FRP-091311-004	TM08D	11-19899	
FRP-091311-005	TM08E	11-19900	
FRP-091311-006	TM08F	11-19901	
FRP-091311-007	TM08G	11-19902	
FRP-091311-008	TM08H	11-19903	
FRP-091311-009	TM08I	11-19904	
FRP-091311-010	TM08J	11-19905	

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: Jay Kuhn Name: Jay Kuhn

Date: 9/20/11 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
Total Mercury by Method SW7470A

Data Release Authorized:
Reported: 09/26/11
Date Received: 09/13/11
Page 1 of 1

QC Report No: TM08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation
8769

Client/ ARI ID	Date Sampled	Matrix	Prep Date Anal Date	RL	Result
FRP-091311-001 TM08A 11-19896	09/13/11	Water	09/19/11 09/23/11	20.0	20.0 U
FRP-091311-002 TM08B 11-19897	09/13/11	Water	09/19/11 09/23/11	**20.0**	**138**
FRP-091311-003 TM08C 11-19898	09/13/11	Water	09/19/11 09/23/11	**20.0**	**452**
FRP-091311-004 TM08D 11-19899	09/13/11	Water	09/19/11 09/23/11	**20.0**	**336**
FRP-091311-005 TM08E 11-19900	09/13/11	Water	09/19/11 09/23/11	**20.0**	**341**
FRP-091311-006 TM08F 11-19901	09/13/11	Water	09/19/11 09/23/11	**20.0**	**243**
FRP-091311-007 TM08G 11-19902	09/13/11	Water	09/19/11 09/23/11	**20.0**	**690**
FRP-091311-008 TM08H 11-19903	09/13/11	Water	09/19/11 09/23/11	**20.0**	**272**
FRP-091311-009 TM08I 11-19904	09/13/11	Water	09/19/11 09/23/11	**20.0**	**699**
FRP-091311-010 TM08J 11-19905	09/13/11	Water	09/19/11 09/23/11	20.0	20.0 U
MB-091911 Method Blank	NA	Water	09/19/11 09/23/11	20.0	20.0 U

Reported in ng/L

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

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-001
MATRIX SPIKE

Lab Sample ID: TM08A
LIMS ID: 11-19896
Matrix: Water
Data Release Authorized:
Reported: 09/26/11

QC Report No: TM08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Mercury	7470A	20.0 U	94.8	100	94.8%	

Reported in ng/L

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

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-091311-001
DUPLICATE

Lab Sample ID: TM08A
LIMS ID: 11-19896
Matrix: Water
Data Release Authorized:
Reported: 09/26/11

QC Report No: TM08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Mercury	7470A	20.0 U	20.0 U	0.0%	+/- 20.0	L

Reported in ng/L

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

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: TM08LCS
LIMS ID: 11-19897
Matrix: Water
Data Release Authorized:
Reported: 09/26/11

QC Report No: TM08-AMEC Geomatrix
Project: FRP 2011 Shoreline Investigation 8769
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Mercury	7470A	188	200	94.0%	

Reported in ng/L

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

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS: ng/L

SDG: TM08

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Mercury	HG	CVL	HG092301	500.0	474.00	94.8	500.0	494.00	98.8	492.00	98.4	484.00	96.8	462.00	92.4	473.00	94.6

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

FORM II (1)

TM07 : 00464

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS: ng/L

SDG: TM08

ANALYTE	EL	M	RUN	CRA/I	TV	CR-1	%R	CR-2	%R	CR-3	%R	CR-4	%R	CR-5	%R	CR-6	%R
Mercury	HG	CVL	HG092301		20.0	15.20	**76.0**										

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

TM07.08135

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

UNITS: ng/L

SDG: TM08

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Mercury	HG	CVL	HG092301	25.0	20.0	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U

TM08T : 00516

IDLs and ICP Linear Ranges

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I

SDG: TM08

UNITS: ng/L

ANALYTE	EL	METH	INSTRUMENT	WAVELENTH (nm)	GFA BACK-GROUND	CLP CRDL	RL	RL DATE	ICP LINEAR RANGE (ng/L)	ICP LR DATE
Mercury	HG	CVL	CETAC MERCURY	253.70		25	20.0	4/1/2011		

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ANALYSIS METHOD: CVL

PROJECT: FRP 2011 Shoreline I

ARI PREP CODE: TLM

SDG: TM08

PREPDATE: 9/19/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-091311-001	TM08A	0.000	20.0	20.0
FRP-091311-001D	TM08ADUP	0.000	20.0	20.0
FRP-091311-001S	TM08ASPK	0.000	20.0	20.0
FRP-091311-002	TM08B	0.000	20.0	20.0
FRP-091311-003	TM08C	0.000	20.0	20.0
FRP-091311-004	TM08D	0.000	20.0	20.0
FRP-091311-005	TM08E	0.000	20.0	20.0
FRP-091311-006	TM08F	0.000	20.0	20.0
FRP-091311-007	TM08G	0.000	20.0	20.0
FRP-091311-008	TM08H	0.000	20.0	20.0
FRP-091311-009	TM08I	0.000	20.0	20.0
FRP-091311-010	TM08J	0.000	20.0	20.0
PBW	TM08MB1	0.000	20.0	20.0
LCSW	TM08MB1SPK	0.000	20.0	20.0

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: CETAC MERCURY START DATE: 9/23/2011

SDG: TM08 RUNID: HG092301 METHOD: CVL END DATE: 9/23/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	16161														X																
S20	S20	1.00	16185														X																
S50	S50	1.00	16213														X																
S100	S100	1.00	16242														X																
S200	S200	1.00	16270														X																
S400	S400	1.00	16294														X																
S1000	S1000	1.00	16323														X																
ICV	AICV	1.00	16365														X																
ICB	ICB	1.00	16393														X																
CCV	ACCV1	1.00	16421														X																
CCB	CCB1	1.00	16450														X																
CRA	CRA	1.00	16474														X																
ZZZZZZ	TM90MB1	1.00	16502																														
ZZZZZZ	TM90MB1SPK	1.00	16530																														
ZZZZZZ	TM90A	1.00	16554																														
ZZZZZZ	TM90ADUP	1.00	16582																														
ZZZZZZ	TM90ASPK	1.00	17011																														
ZZZZZZ	TM90MB2	1.00	17035																														
ZZZZZZ	TM90MB2SPK	1.00	17063																														
ZZZZZZ	TM90B	1.00	17091																														
ZZZZZZ	TM90BDUP	1.00	17120																														
CCV	ACCV2	1.00	17144														X																
CCB	CCB2	1.00	17173														X																
ZZZZZZ	TM90BSPK	1.00	17201																														
ZZZZZZ	TN21MB1	1.00	17225																														
ZZZZZZ	TN21MB1SPK	1.00	17253																														
ZZZZZZ	TN21A	1.00	17281																														
ZZZZZZ	TN21ADUP	1.00	17305																														
ZZZZZZ	TN21ASPK	1.00	17333																														
ZZZZZZ	TN21B	1.00	17361																														
ZZZZZZ	TN21C	1.00	17390																														
ZZZZZZ	TN21D	1.00	17414																														
ZZZZZZ	TN21E	1.00	17442																														
CCV	ACCV3	1.00	17471														X																
CCB	CCB3	1.00	17495														X																

FORM XIV

TM07 : 00165

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP 2011 Shoreline I INSTRUMENT ID: CETAC MERCURY START DATE: 9/23/2011

SDG: TM08 RUNID: HG092301 METHOD: CVL END DATE: 9/23/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
PBW	TM08MB1	1.00	17524														X																
LCSW	TM08MB1SPK	1.00	17552														X																
FRP-091311-001	TM08A	1.00	17580														X																
FRP-091311-001D	TM08ADUP	1.00	18004														X																
FRP-091311-001S	TM08ASPK	1.00	18032														X																
FRP-091311-002	TM08B	1.00	18060														X																
FRP-091311-003	TM08C	1.00	18085														X																
FRP-091311-004	TM08D	1.00	18113														X																
FRP-091311-005	TM08E	1.00	18141														X																
FRP-091311-006	TM08F	1.00	18165														X																
CCV	ACCV4	1.00	18194														X																
CCB	CCB4	1.00	18222														X																
FRP-091311-007	TM08G	1.00	18251														X																
FRP-091311-008	TM08H	1.00	18275														X																
FRP-091311-009	TM08I	1.00	18303														X																
FRP-091311-010	TM08J	1.00	18332														X																
ZZZZZZ	TM25MB1	1.00	18360																														
ZZZZZZ	TM25MB1SPK	1.00	18384																														
ZZZZZZ	TM25A	1.00	18412																														
ZZZZZZ	TM25ADUP	1.00	18440																														
ZZZZZZ	TM25ASPK	1.00	18464																														
ZZZZZZ	TM25B	1.00	18493																														
CCV	ACCV5	1.00	18532														X																
CCB	CCB5	1.00	18561														X																

TM07 : 06170

General Chemistry Analysis
Report and Summary QC Forms

ARI Job ID: TM07, TM08

SAMPLE RESULTS-CONVENTIONALS
TM07-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/23/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Client ID: FRP-091311-001
ARI ID: 11-19883 TM07A

Analyte	Date Batch	Method	Units	RL	Sample
pH	09/13/11 091311#1	EPA 150.1	std units	0.01	7.09

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
TM07-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/23/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Client ID: FRP-091311-002
ARI ID: 11-19884 TM07B

Analyte	Date Batch	Method	Units	RL	Sample
pH	09/13/11 091311#1	EPA 150.1	std units	0.01	9.15
Alkalinity	09/19/11 091911#1	SM 2320	mg/L CaCO3	1.0	578
Carbonate	09/19/11	SM 2320	mg/L CaCO3	1.0	127
Bicarbonate	09/19/11	SM 2320	mg/L CaCO3	1.0	451
Hydroxide	09/19/11	SM 2320	mg/L CaCO3	1.0	< 1.0 U
Chloride	09/13/11 091311#1	EPA 300.0	mg/L	2.0	54.0
N-Nitrate	09/14/11 091411#1	EPA 300.0	mg-N/L	0.5	< 0.5 U
Ortho-Phosphorous	09/14/11 091411#1	EPA 300.0	mg-P/L	0.5	3.8
N-Ammonia	09/20/11 092011#1	EPA 350.1M	mg-N/L	0.020	0.935
Sulfate	09/13/11 091311#1	EPA 300.0	mg/L	2.0	59.5
Sulfide	09/16/11 091611#1	EPA 376.2	mg/L	0.500	7.15

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
TM07-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/23/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Client ID: FRP-091311-003
ARI ID: 11-19885 TM07C

Analyte	Date Batch	Method	Units	RL	Sample
pH	09/13/11 091311#1	EPA 150.1	std units	0.01	10.4
Alkalinity	09/19/11 091911#1	SM 2320	mg/L CaCO3	1.0	2,620
Carbonate	09/19/11	SM 2320	mg/L CaCO3	1.0	2,360
Bicarbonate	09/19/11	SM 2320	mg/L CaCO3	1.0	264
Hydroxide	09/19/11	SM 2320	mg/L CaCO3	1.0	< 1.0 U
Chloride	09/13/11 091311#1	EPA 300.0	mg/L	5.0	43.4
N-Nitrate	09/13/11 091311#1	EPA 300.0	mg-N/L	5.0	< 5.0 U
Ortho-Phosphorous	09/13/11 091311#1	EPA 300.0	mg-P/L	5.0	12.9
N-Ammonia	09/20/11 092011#1	EPA 350.1M	mg-N/L	0.200	12.3
Sulfate	09/13/11 091311#1	EPA 300.0	mg/L	5.0	6.0
Sulfide	09/16/11 091611#1	EPA 376.2	mg/L	2.50	36.3

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
TM07-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/23/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Client ID: FRP-091311-004
ARI ID: 11-19886 TM07D

Analyte	Date Batch	Method	Units	RL	Sample
pH	09/13/11 091311#1	EPA 150.1	std units	0.01	7.91

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
TM07-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/23/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Client ID: FRP-091311-005
ARI ID: 11-19887 TM07E

Analyte	Date Batch	Method	Units	RL	Sample
pH	09/13/11 091311#1	EPA 150.1	std units	0.01	7.90

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
TM07-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/23/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Client ID: FRP-091311-006
ARI ID: 11-19888 TM07F

Analyte	Date Batch	Method	Units	RL	Sample
pH	09/13/11 091311#1	EPA 150.1	std units	0.01	9.08

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
TM07-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/23/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Client ID: FRP-091311-007
ARI ID: 11-19889 TM07G

Analyte	Date Batch	Method	Units	RL	Sample
pH	09/13/11 091311#1	EPA 150.1	std units	0.01	8.06

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
TM07-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/23/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Client ID: FRP-091311-008
ARI ID: 11-19890 TM07H

Analyte	Date Batch	Method	Units	RL	Sample
pH	09/13/11 091311#1	EPA 150.1	std units	0.01	10.1

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
TM07-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/23/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Client ID: FRP-091311-009
ARI ID: 11-19891 TM07I

Analyte	Date Batch	Method	Units	RL	Sample
pH	09/13/11 091311#1	EPA 150.1	std units	0.01	7.24

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
TM07-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/23/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Client ID: FRP-091311-010
ARI ID: 11-19892 TM07J

Analyte	Date Batch	Method	Units	RL	Sample
pH	09/13/11 091311#1	EPA 150.1	std units	0.01	6.10

RL Analytical reporting limit
U Undetected at reported detection limit

REPLICATE RESULTS-CONVENTIONALS
TM07-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/23/11

Project: FRP 2011 Shoreline Investiga
Event: 8769
Date Sampled: 09/13/11
Date Received: 09/13/11

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: TM07A Client ID: FRP-091311-001						
pH	EPA 150.1	09/13/11	std units	7.09	7.10	0.01

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

LAB CONTROL RESULTS-CONVENTIONALS
TM07-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/23/11

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

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
pH EPA 150.1	ICVL	09/13/11	std units	6.99	7.00	0.01
Sulfide EPA 376.2	ICVL	09/16/11	mg/L	0.525	0.500	105.0%
	PREP	09/16/11		6.11	6.51	93.9%

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

METHOD BLANK RESULTS-CONVENTIONALS
TM07-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/23/11

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

Analyte	Method	Date	Units	Blank	ID
Chloride	EPA 300.0	09/13/11	mg/L	< 0.1 U	
N-Nitrate	EPA 300.0	09/13/11	mg-N/L	< 0.1 U	
		09/14/11		< 0.1 U	
Ortho-Phosphorous	EPA 300.0	09/13/11	mg-P/L	< 0.1 U	
		09/14/11		< 0.1 U	
N-Ammonia	EPA 350.1M	09/20/11	mg-N/L	< 0.010 U	FB
Sulfate	EPA 300.0	09/13/11	mg/L	< 0.1 U	
Sulfide	EPA 376.2	09/16/11	mg/L	< 0.050 U	
		09/16/11		< 0.050 U	

FB Filtration Blank

STANDARD REFERENCE RESULTS-CONVENTIONALS
TM07-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/23/11

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

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Alkalinity ERA #P114506	SM 2320	09/19/11	mg/L CaCO3	49.9	49.2	101.4%
Chloride ERA #230109	EPA 300.0	09/13/11	mg/L	2.8	3.0	93.3%
N-Nitrate ERA #09127	EPA 300.0	09/13/11 09/14/11	mg-N/L	2.8 2.8	3.0 3.0	93.3% 93.3%
Ortho-Phosphorous EAR #210109	EPA 300.0	09/13/11 09/14/11	mg-P/L	2.8 2.8	3.0 3.0	93.3% 93.3%
N-Ammonia ERA #15125	EPA 350.1M	09/20/11	mg-N/L	0.474	0.500	94.8%
Sulfate ERA #220109	EPA 300.0	09/13/11	mg/L	2.9	3.0	96.7%

Geotechnical Analysis
Report and Summary QC Forms

ARI Job ID: TM07, TM08

AMEC Geomatrix
FRP 2011 Shoreline Investigation

Density of Liquid According to ASTM D1298

Sample ID	Density (g/ml at 20°C)
DI BLANK	0.992
FRP-091311-002	0.984
FRP-091311-002	0.984
FRP-091311-002	0.984
FRP-091311-003	0.989

TM07