

## ANALYTICAL REPORT

Job Number: 720-18061-2

Job Description: Santa Cruz Rail Line

For:

AMEC Geomatrix Inc.  
2101 Webster Street, 12th Floor  
Oakland, CA 94612

Attention: Mr. Matt Goerz



Approved for release.  
Afsaneh Salimpour  
Project Manager I  
3/6/2009 3:24 PM

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Afsaneh Salimpour  
Project Manager I  
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03/06/2009

**Job Narrative**  
**720-J18061-2**

**Comments**

No additional comments.

**Receipt**

All other samples were received in good condition within temperature requirements.

**GC/MS Semi VOA**

Method(s) 8270C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch #47237 were outside control limits. The associated laboratory control standard (LCS) met acceptance criteria. Original sample was extracted within holding time but the QC failed.

No other analytical or quality issues were noted.

**Metals**

No analytical or quality issues were noted.

**Organic Prep**

No analytical or quality issues were noted.

## EXECUTIVE SUMMARY - Detections

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
720-18061-2 Arsenic	SB-71-1.5	47	0.95	mg/Kg	6010B
720-18061-3 Arsenic	SB-71-4.5	2.0	0.99	mg/Kg	6010B
720-18061-5 Arsenic	SB-72-1.0	3.9	1.0	mg/Kg	6010B
720-18061-6 Arsenic	SB-72-4.5	2.0	1.0	mg/Kg	6010B

## METHOD SUMMARY

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

<b>Description</b>	<b>Lab Location</b>	<b>Method</b>	<b>Preparation Method</b>
<b>Matrix: Solid</b>			
Semivolatile Organic Compounds (GC/MS SIM)	TAL SF	SW846 8270C	
Ultrasonic Extraction	TAL SF		SW846 3550B
Metals (ICP)	TAL SF	SW846 6010B	
Preparation, Metals	TAL SF		SW846 3050B

### Lab References:

TAL SF = TestAmerica San Francisco

### Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
SW846 8270C	Lee, Michael	ML
SW846 6010B	Arndt, Christopher	CA

## SAMPLE SUMMARY

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
720-18061-2	SB-71-1.5	Solid	02/11/2009 0905	02/11/2009 1650
720-18061-3	SB-71-4.5	Solid	02/11/2009 0910	02/11/2009 1650
720-18061-5	SB-72-1.0	Solid	02/11/2009 0925	02/11/2009 1650
720-18061-6	SB-72-4.5	Solid	02/11/2009 0930	02/11/2009 1650

## Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

**Client Sample ID: SB-71-1.5**

Lab Sample ID: 720-18061-2

Date Sampled: 02/11/2009 0905

Client Matrix: Solid

Date Received: 02/11/2009 1650

### 8270C Semivolatile Organic Compounds (GC/MS SIM)

Method:	8270C	Analysis Batch: 720-47270	Instrument ID: Latest Chemstation
Preparation:	3550B	Prep Batch: 720-47237	Lab File ID: 030309011.D
Dilution:	1.0		Initial Weight/Volume: 30.40 g
Date Analyzed:	03/03/2009 1254		Final Weight/Volume: 1 mL
Date Prepared:	03/02/2009 1238		Injection Volume:

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Naphthalene		ND <4.9 uJ	H	4.9
Acenaphthene		ND	H	4.9
Acenaphthylene		ND	H	4.9
Fluorene		ND	H	4.9
Phenanthrene		ND	H	4.9
Anthracene		ND	H	4.9
Benzo[a]anthracene		ND	H	4.9
Chrysene		ND	H	4.9
Benzo[a]pyrene		ND	H	4.9
Benzo[b]fluoranthene		ND	H	4.9
Benzo[k]fluoranthene		ND	H	4.9
Benzo[g,h,i]perylene		ND	H	4.9
Indeno[1,2,3-cd]pyrene		ND	H	4.9
Fluoranthene		ND	H	4.9
Pyrene		ND	H	4.9
Dibenz(a,h)anthracene		ND	H	4.9

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	63	33 - 93
Terphenyl-d14	66	35 - 99

# Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

Client Sample ID: SB-71-1.5

Lab Sample ID: 720-18061-2  
Client Matrix: Solid

Date Sampled: 02/11/2009 0905  
Date Received: 02/11/2009 1650

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## 6010B Metals (ICP)

Method: 6010B  
Preparation: 3050B  
Dilution: 1.0  
Date Analyzed: 02/26/2009 1831  
Date Prepared: 02/26/2009 1120

Analysis Batch: 720-47199  
Prep Batch: 720-47159

Instrument ID: Varian ICP  
Lab File ID: N/A  
Initial Weight/Volume: 1.05 g  
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		47		0.95



**Analytical Data**

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

**Client Sample ID: SB-71-4.5**

Lab Sample ID: 720-18061-3  
Client Matrix: Solid

Date Sampled: 02/11/2009 0910  
Date Received: 02/11/2009 1650

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**6010B Metals (ICP)**

Method: 6010B  
Preparation: 3050B  
Dilution: 1.0  
Date Analyzed: 02/26/2009 1835  
Date Prepared: 02/26/2009 1120

Analysis Batch: 720-47199  
Prep Batch: 720-47159

Instrument ID: Varian ICP  
Lab File ID: N/A  
Initial Weight/Volume: 1.01 g  
Final Weight/Volume: 50 mL

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Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		2.0		0.99

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## Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

Client Sample ID: SB-72-1.0

Lab Sample ID: 720-18061-5  
Client Matrix: Solid

Date Sampled: 02/11/2009 0925  
Date Received: 02/11/2009 1650

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### 6010B Metals (ICP)

Method:	6010B	Analysis Batch: 720-47199	Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 720-47159	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	0.97 g
Date Analyzed:	02/26/2009 1839		Final Weight/Volume:	50 mL
Date Prepared:	02/26/2009 1120			

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		3.9		1.0

**Analytical Data**

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

**Client Sample ID: SB-72-4.5**

Lab Sample ID: 720-18061-6  
Client Matrix: Solid

Date Sampled: 02/11/2009 0930  
Date Received: 02/11/2009 1650

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**6010B Metals (ICP)**

Method: 6010B  
Preparation: 3050B  
Dilution: 1.0  
Date Analyzed: 02/26/2009 1842  
Date Prepared: 02/26/2009 1120

Analysis Batch: 720-47199  
Prep Batch: 720-47159

Instrument ID: Varian ICP  
Lab File ID: N/A  
Initial Weight/Volume: 0.99 g  
Final Weight/Volume: 50 mL

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Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		2.0		1.0

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## DATA REPORTING QUALIFIERS

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	F	MS or MSD exceeds the control limits
	4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
	F	RPD of the MS and MSD exceeds the control limits
	H	Sample was prepped or analyzed beyond the specified holding time

## Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS Semi VOA</b>					
<b>Prep Batch: 720-47237</b>					
LCS 720-47237/2-A	Lab Control Spike	T	Solid	3550B	
LCSD 720-47237/3-A	Lab Control Spike Duplicate	T	Solid	3550B	
MB 720-47237/1-A	Method Blank	T	Solid	3550B	
720-18061-2	SB-71-1.5	T	Solid	3550B	
720-18281-A-1-D MS	Matrix Spike	T	Solid	3550B	
720-18281-A-1-E MSD	Matrix Spike Duplicate	T	Solid	3550B	
<b>Analysis Batch:720-47270</b>					
LCS 720-47237/2-A	Lab Control Spike	T	Solid	8270C	720-47237
LCSD 720-47237/3-A	Lab Control Spike Duplicate	T	Solid	8270C	720-47237
MB 720-47237/1-A	Method Blank	T	Solid	8270C	720-47237
720-18061-2	SB-71-1.5	T	Solid	8270C	720-47237
720-18281-A-1-D MS	Matrix Spike	T	Solid	8270C	720-47237
720-18281-A-1-E MSD	Matrix Spike Duplicate	T	Solid	8270C	720-47237

**Report Basis**

T = Total

## Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 720-47159</b>					
LCS 720-47159/2-A	Lab Control Spike	T	Solid	3050B	
LCSD 720-47159/3-A	Lab Control Spike Duplicate	T	Solid	3050B	
LCSSRM 720-47159/10-A	LCS-Standard Reference Material	T	Solid	3050B	
MB 720-47159/1-A	Method Blank	T	Solid	3050B	
720-18061-2	SB-71-1.5	T	Solid	3050B	
720-18061-2MS	Matrix Spike	T	Solid	3050B	
720-18061-2MSD	Matrix Spike Duplicate	T	Solid	3050B	
720-18061-3	SB-71-4.5	T	Solid	3050B	
720-18061-5	SB-72-1.0	T	Solid	3050B	
720-18061-6	SB-72-4.5	T	Solid	3050B	
<b>Analysis Batch:720-47199</b>					
LCS 720-47159/2-A	Lab Control Spike	T	Solid	6010B	720-47159
LCSD 720-47159/3-A	Lab Control Spike Duplicate	T	Solid	6010B	720-47159
LCSSRM 720-47159/10-A	LCS-Standard Reference Material	T	Solid	6010B	720-47159
MB 720-47159/1-A	Method Blank	T	Solid	6010B	720-47159
720-18061-2	SB-71-1.5	T	Solid	6010B	720-47159
720-18061-2MS	Matrix Spike	T	Solid	6010B	720-47159
720-18061-2MSD	Matrix Spike Duplicate	T	Solid	6010B	720-47159
720-18061-3	SB-71-4.5	T	Solid	6010B	720-47159
720-18061-5	SB-72-1.0	T	Solid	6010B	720-47159
720-18061-6	SB-72-4.5	T	Solid	6010B	720-47159

**Report Basis**

T = Total

## Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

**Method Blank - Batch: 720-47237**

**Method: 8270C**  
**Preparation: 3550B**

Lab Sample ID: MB 720-47237/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 03/03/2009 1044  
Date Prepared: 03/02/2009 1059

Analysis Batch: 720-47270  
Prep Batch: 720-47237  
Units: ug/Kg

Instrument ID: Latest Chemstation  
Lab File ID: 030309005.D  
Initial Weight/Volume: 30.39 g  
Final Weight/Volume: 1 mL  
Injection Volume:

Analyte	Result	Qual	RL
Naphthalene	ND		4.9
Acenaphthene	ND		4.9
Acenaphthylene	ND		4.9
Fluorene	ND		4.9
Phenanthrene	ND		4.9
Anthracene	ND		4.9
Benzo[a]anthracene	ND		4.9
Chrysene	ND		4.9
Benzo[a]pyrene	ND		4.9
Benzo[b]fluoranthene	ND		4.9
Benzo[k]fluoranthene	ND		4.9
Benzo[g,h,i]perylene	ND		4.9
Indeno[1,2,3-cd]pyrene	ND		4.9
Fluoranthene	ND		4.9
Pyrene	ND		4.9
Dibenz(a,h)anthracene	ND		4.9
Surrogate	% Rec	Acceptance Limits	
2-Fluorobiphenyl	70	33 - 93	
Terphenyl-d14	79	35 - 99	

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 720-47237**

**Method: 8270C  
Preparation: 3550B**

LCS Lab Sample ID: LCS 720-47237/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 03/03/2009 1001  
Date Prepared: 03/02/2009 1059

Analysis Batch: 720-47270  
Prep Batch: 720-47237  
Units: ug/Kg

Instrument ID: Latest Chemstation  
Lab File ID: 030309003.D  
Initial Weight/Volume: 30.45 g  
Final Weight/Volume: 1 mL  
Injection Volume:

LCSD Lab Sample ID: LCSD 720-47237/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 03/03/2009 1128  
Date Prepared: 03/02/2009 1059

Analysis Batch: 720-47270  
Prep Batch: 720-47237  
Units: ug/Kg

Instrument ID: Latest Chemstation  
Lab File ID: 030309007.D  
Initial Weight/Volume: 30.10 g  
Final Weight/Volume: 1 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Naphthalene	67	65	46 - 85	2	20		
Acenaphthene	72	70	49 - 88	1	20		
Acenaphthylene	82	80	52 - 89	2	20		
Fluorene	73	71	52 - 92	1	20		
Phenanthrene	80	79	57 - 103	1	20		
Anthracene	71	71	52 - 87	1	20		
Benzo[a]anthracene	88	87	52 - 96	1	20		
Chrysene	77	78	54 - 96	2	20		
Benzo[a]pyrene	82	83	54 - 96	3	20		
Benzo[b]fluoranthene	101	103	51 - 105	3	20		
Benzo[k]fluoranthene	87	87	56 - 101	1	20		
Benzo[g,h,i]perylene	83	83	48 - 101	1	20		
Indeno[1,2,3-cd]pyrene	85	85	48 - 105	2	20		
Fluoranthene	84	85	57 - 95	2	20		
Pyrene	90	89	53 - 95	0	20		
Dibenz(a,h)anthracene	82	83	50 - 104	2	20		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
2-Fluorobiphenyl	77		76		33 - 93		
Terphenyl-d14	77		80		35 - 99		

Calculations are performed before rounding to avoid round-off errors in calculated results.



## Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 720-47237**

**Method: 8270C  
Preparation: 3550B**

LCS Lab Sample ID: LCS 720-47237/2-A      Units: ug/Kg  
 Client Matrix: Solid  
 Dilution: 1.0  
 Date Analyzed: 03/03/2009 1001  
 Date Prepared: 03/02/2009 1059

LCSD Lab Sample ID: LCSD 720-47237/3-A  
 Client Matrix: Solid  
 Dilution: 1.0  
 Date Analyzed: 03/03/2009 1128  
 Date Prepared: 03/02/2009 1059

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Naphthalene	328	332	221	217
Acenaphthene	328	332	235	232
Acenaphthylene	328	332	270	266
Fluorene	328	332	239	236
Phenanthrene	328	332	262	261
Anthracene	328	332	233	236
Benzo[a]anthracene	328	332	287	289
Chrysene	328	332	252	258
Benzo[a]pyrene	328	332	270	277
Benzo[b]fluoranthene	328	332	332	343
Benzo[k]fluoranthene	328	332	286	290
Benzo[g,h,i]perylene	328	332	272	276
Indeno[1,2,3-cd]pyrene	328	332	278	283
Fluoranthene	328	332	276	283
Pyrene	328	332	297	297
Dibenz(a,h)anthracene	328	332	270	275

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 720-47237**

**Method: 8270C  
Preparation: 3550B**

MS Lab Sample ID: 720-18281-A-1-D MS      Analysis Batch: 720-47270  
Client Matrix: Solid                              Prep Batch: 720-47237  
Dilution: 5.0  
Date Analyzed: 03/03/2009 1149  
Date Prepared: 03/02/2009 1059

Instrument ID: Latest Chemstation  
Lab File ID: 030309008.D  
Initial Weight/Volume: 30.22 g  
Final Weight/Volume: 5 mL  
Injection Volume:

MSD Lab Sample ID: 720-18281-A-1-E MSD      Analysis Batch: 720-47270  
Client Matrix: Solid                              Prep Batch: 720-47237  
Dilution: 5.0  
Date Analyzed: 03/03/2009 1211  
Date Prepared: 03/02/2009 1059

Instrument ID: Latest Chemstation  
Lab File ID: 030309009.D  
Initial Weight/Volume: 30.29 g  
Final Weight/Volume: 5 mL  
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Naphthalene	-20	66	32 - 88	46	20	F	F
Acenaphthene	-30	33	33 - 97	24	20	F	F
Acenaphthylene	66	71	28 - 104	6	20		
Fluorene	-17	51	35 - 99	23	20	F	F
Phenanthrene	-170	-40	28 - 103	25	20	4	4
Anthracene	26	46	36 - 99	9	20	F	
Benzo[a]anthracene	75	52	29 - 115	20	20		
Chrysene	91	69	29 - 116	19	20		
Benzo[a]pyrene	68	63	24 - 118	6	20		
Benzo[b]fluoranthene	71	65	17 - 132	6	20		
Benzo[k]fluoranthene	62	74	35 - 109	14	20		
Benzo[g,h,i]perylene	80	79	21 - 118	2	20		
Indeno[1,2,3-cd]pyrene	94	91	20 - 126	3	20		
Fluoranthene	-28	17	24 - 120	16	20	F	F
Pyrene	-10	37	24 - 123	17	20	F	
Dibenz(a,h)anthracene	78	75	36 - 104	4	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2-Fluorobiphenyl	61	65	33 - 93
Terphenyl-d14	72	78	35 - 99

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

**Matrix Spike/  
Matrix Spike Duplicate Data Report - Batch: 720-47237**

**Method: 8270C  
Preparation: 3550B**

MS Lab Sample ID: 720-18281-A-1-D MS      Units: ug/Kg  
 Client Matrix:      Solid  
 Dilution:      5.0  
 Date Analyzed:      03/03/2009 1149  
 Date Prepared:      03/02/2009 1059

MSD Lab Sample ID: 720-18281-A-1-E MS  
 Client Matrix:      Solid  
 Dilution:      5.0  
 Date Analyzed:      03/03/2009 1211  
 Date Prepared:      03/02/2009 1059

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Naphthalene	540	331	330	473 F	758 F
Acenaphthene	860	331	330	760 F	969 F
Acenaphthylene	ND	331	330	285	302
Fluorene	900	331	330	846 F	1070 F
Phenanthrene	2100	331	330	1530 4	1960 4
Anthracene	600	331	330	686 F	751
Benzo[a]anthracene	180	331	330	427	351
Chrysene	140	331	330	444	368
Benzo[a]pyrene	ND	331	330	275	260
Benzo[b]fluoranthene	ND	331	330	329	309
Benzo[k]fluoranthene	ND	331	330	256	295
Benzo[g,h,i]perylene	ND	331	330	266	261
Indeno[1,2,3-cd]pyrene	ND	331	330	310	301
Fluoranthene	970	331	330	873 F	1020 F
Pyrene	860	331	330	821 F	977
Dibenz(a,h)anthracene	ND	331	330	258	248

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

**Method Blank - Batch: 720-47159**

**Method: 6010B**  
**Preparation: 3050B**

Lab Sample ID: MB 720-47159/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 02/26/2009 1813  
Date Prepared: 02/26/2009 1120

Analysis Batch: 720-47199  
Prep Batch: 720-47159  
Units: mg/Kg

Instrument ID: Varian ICP  
Lab File ID: N/A  
Initial Weight/Volume: 1.03 g  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Arsenic	ND		0.97

**LCS-Standard Reference Material - Batch:**

**Method: 6010B**  
**Preparation: 3050B**

Lab Sample ID: LCSSRM 720-47159/10-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 02/26/2009 1846  
Date Prepared: 02/26/2009 1120

Analysis Batch: 720-47199  
Prep Batch: 720-47159  
Units: mg/Kg

Instrument ID: Varian ICP  
Lab File ID: N/A  
Initial Weight/Volume: 1.01 g  
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	22.7	21.0	93	69 - 119	

**Lab Control Spike/  
Lab Control Spike Duplicate Recovery Report - Batch: 720-47159**

**Method: 6010B**  
**Preparation: 3050B**

LCS Lab Sample ID: LCS 720-47159/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 02/26/2009 1816  
Date Prepared: 02/26/2009 1120

Analysis Batch: 720-47199  
Prep Batch: 720-47159  
Units: mg/Kg

Instrument ID: Varian ICP  
Lab File ID: N/A  
Initial Weight/Volume: 1.00 g  
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 720-47159/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 02/26/2009 1820  
Date Prepared: 02/26/2009 1120

Analysis Batch: 720-47199  
Prep Batch: 720-47159  
Units: mg/Kg

Instrument ID: Varian ICP  
Lab File ID: N/A  
Initial Weight/Volume: 1.00 g  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Que
	LCS	LCSD					
Arsenic	99	98	80 - 120	0	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 720-47159**

**Method: 6010B  
Preparation: 3050B**

LCS Lab Sample ID: LCS 720-47159/2-A                      Units: mg/Kg  
Client Matrix:            Solid  
Dilution:                1.0  
Date Analyzed:        02/26/2009 1816  
Date Prepared:        02/26/2009 1120

LCSD Lab Sample ID: LCSD 720-47159/3-A  
Client Matrix:            Solid  
Dilution:                1.0  
Date Analyzed:        02/26/2009 1820  
Date Prepared:        02/26/2009 1120

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Arsenic	200	200	198	197

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 720-47159**

**Method: 6010B  
Preparation: 3050B**

MS Lab Sample ID: 720-18061-2  
Client Matrix:        Solid  
Dilution:             1.0  
Date Analyzed:      02/26/2009 1824  
Date Prepared:      02/26/2009 1120

Analysis Batch: 720-47199  
Prep Batch: 720-47159

Instrument ID: Varian ICP  
Lab File ID:    N/A  
Initial Weight/Volume: 0.98 g  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 720-18061-2  
Client Matrix:        Solid  
Dilution:             1.0  
Date Analyzed:      02/26/2009 1827  
Date Prepared:      02/26/2009 1120

Analysis Batch: 720-47199  
Prep Batch: 720-47159

Instrument ID: Varian ICP  
Lab File ID:    N/A  
Initial Weight/Volume: 1.01 g  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Arsenic	90	88	75 - 125	4	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

**Matrix Spike/  
Matrix Spike Duplicate Data Report - Batch: 720-47159**

**Method: 6010B  
Preparation: 3050B**

MS Lab Sample ID: 720-18061-2                      Units: mg/Kg  
Client Matrix:        Solid  
Dilution:            1.0  
Date Analyzed:      02/26/2009 1824  
Date Prepared:      02/26/2009 1120

MSD Lab Sample ID: 720-18061-2  
Client Matrix:        Solid  
Dilution:            1.0  
Date Analyzed:      02/26/2009 1827  
Date Prepared:      02/26/2009 1120

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Arsenic	47	204	198	230	221

Calculations are performed before rounding to avoid round-off errors in calculated results.

# 720-18061-2 Rev.

**Sharma, Dimple**

**From:** Klitzke, Tiffany [Tiffany.Klitzke@amec.com]  
**Sent:** Wednesday, February 25, 2009 4:59 PM  
**To:** Sharma, Dimple  
**Cc:** Salimpour, Afsaneh; Goerz, Matt  
**Subject:** request to remove samples from hold

Hi Dimple,

In addition to my earlier request I would like to take the following samples off of hold:

From Job #720-18061-1, please analyze the following samples for arsenic by 6010:

SB-71-1.5

SB-71-4.5

SB-72-1.5

SB-72-4.5

From Job #720-18062-1, please analyze SB-73-1.5 and SB-73-4.5 for arsenic by 6010.

From Job #720-18099-1, please analyze SB-95-1.5 for arsenic. Also, analyze SB-96-1.5 for PAHs by 82 and for arsenic.

Thanks!

**Tiffany Klitzke** Staff Geologist

AMEC Geomatrix 2101 Webster St., 12th Fl. Oakland, CA 94612

510.663.4144 (direct) 510.663.4141 (fax) Tiffany.Klitzke@amec.com

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**P.S. Please update your address book with my new email: Tiffany.Klitzke@amec.com Thanks.**

The information contained in this e-mail is intended only for the individual or entity to whom it is addressed.

Its contents (including any attachments) may contain confidential and/or privileged information. If you are not an intended recipient you must not use, disclose, disseminate, copy or print its contents. If you receive this e-mail in error, please notify the sender by reply e-mail and delete and destroy the message.

720-18061-2

Sharma, Dimple

From: Klitzke, Tiffany [Tiffany.Klitzke@amec.com]  
Sent: Wednesday, February 25, 2009 2:38 PM  
To: Sharma, Dimple  
Cc: Salimpour, Afsaneh; Goerz, Matt  
Subject: Job #720-18061-1

Hi Dimple,

I would like to take samples SB-71-1.5 and SB-71-4.5 off of hold (Job #720-18061-1). Please analyze SB-71-1.5 for PAHs by 8270C SIM. For SB-71-4.5, please perform the extraction and then place the extraction on hold.

It is okay to charge us the rush fee for giving you less than 24 hours notice.

Thanks for your help,

Tiffany Klitzke | Staff Geologist

AMEC Geomatrix | 2101 Webster St., 12th Fl. | Oakland, CA 94612

510.663.4144 (direct) | 510.663.4141 (fax) | Tiffany.Klitzke@amec.com

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P.S. Please update your address book with my new email: [Tiffany.Klitzke@amec.com](mailto:Tiffany.Klitzke@amec.com) Thanks.

The information contained in this e-mail is intended only for the individual or entity to whom it is addressed.

Its contents (including any attachments) may contain confidential and/or privileged information. If you are not an intended recipient you must not use, disclose, disseminate, copy or print its contents. If you receive this e-mail in error, please notify the sender by reply e-mail and delete and destroy the message.

RUSH



## Login Sample Receipt Check List

Client: AMEC Geomatrix Inc.

Job Number: 720-18061-2

Login Number: 18061  
Creator: Bullock, Tracy  
List Number: 1

List Source: TestAmerica San Francisco

Question	T / F / NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	SEE NCM
There are no discrepancies between the sample IDs on the containers and the COC.	False	ncm
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

