



## Transmittal

Sent Via:  Messenger  U.S. Mail  Overnight Mail

Date: June 20, 2005

To: Mark Edens  
Ecology Northwest Regional Office  
3190 - 160th Ave. SE  
Bellevue, WA 98008-5452

From: Carl Einberger

cc:

Project Number: 10360.000  
Project Name: Sierra Pacific Industries, Everett Mill Site

Qty	Description
1	Laboratory Certificates of Analysis

### Remarks

Enclosed are laboratory data from soil, groundwater, and sediment sampling performed at the former Weyerhaeuser Mill B Site, in Everett Washington. Sierra Pacific Industries is planning to build a new mill at this site. Sampling was performed between April 27 and May 12, 2005. Figures and summary tables presenting exploration locations and results were previously provided to Ecology. Please contact me at 206.342.1776 if you have any questions.

**RECEIVED**

JUN 22 2005

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**Analytical Resources, Incorporated**  
Analytical Chemists and Consultants

May 11, 2005

Joe Morrice  
GeoMatrix Consultants  
600 University, Suite 1020  
Seattle, WA 98101

**RE: Project: SPI Everett**  
**ARI Job No: HZ68**

Dear Joe:

Please find enclosed a sample custody record (COC) and a set of analytical results for the samples from the project referenced above. Analytical Resources, Inc. accepted six water samples in good condition on April 27, 2005.

The samples were analyzed for PAHs, PCP, NWTPH-Dx, TSS, hardness and total metals as requested on the COC.

These analyses proceeded without incident of note.

Copies of these reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

*Steph Lucas for*  
Stephanie Lucas  
Project Manager  
steph@arilabs.com  
(206) 695-6213

enclosures

cc: file HZ68

SPL/mdh

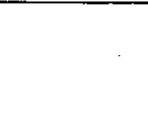
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# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **4768**  
 Turn-around Requested: **5 D**  
 ARI Client Company: **GEORGINA**  
 Phone: **206-342-1760**  
 Client Contact: **JOE MARBLE**  
 Client Project Name: **SPI EVERETT**  
 Client Project #: **SPI**  
 Samplers: **Sony**

Page: **1** of **1**  
 Date: **5/6/20**  
 No. of Coolers: **5.0**  
 Cooler Temps: **5.6/2.6**  
 Ice Present? **2.6**

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	Analysis Requested				Notes/Comments
					TPH-Ox	PAH	PCA	THS	
OF-02	4-27	1320	W	8	X	X	X	X	
OF-03	4-27	1310		8	X	X	X	X	
OF-05	4-27	1415		8	X	X	X	X	
OF-04	4-27	1440		8	X	X	X	X	
OF-01	4-27	1500		8	X	X	X	X	
RESA-01	4-27			1					

Comments/Special Instructions	Relinquished by:		Relinquished by:		Received by:	
	(Signature)	Printed Name:	(Signature)	Printed Name:	(Signature)	Printed Name:
	<i>[Signature]</i>	JOE MARBLE	<i>[Signature]</i>	FRAN BRANSON	<i>[Signature]</i>	FRAN BRANSON
		GEORGINA		ARI		
	Date & Time:	4-27-05 1711	Date & Time:	4/27/05 - 1711	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.



## Data Reporting Qualifiers

Effective 12/28/04

### 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  $\geq$  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  $\leq 5$  times the Reporting Limit and the replicate control limit defaults to  $\pm 1$  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
- NR Spiked compound recovery is not reported due to chromatographic interference
- 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.
- 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



Analytical Resources Incorporated  
Analytical Chemists and Consultants

- NA The flagged analyte was not analyzed for
- 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
- 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.
- 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  $\geq 40\%$  RPD with no obvious chromatographic interference

### **Geotechnical Data**

- 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
- F Samples were frozen prior to particle size determination

ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: OF-02  
SAMPLE



Lab Sample ID: HZ68A  
LIMS ID: 05-7314  
Matrix: Surface Water  
Data Release Authorized:  
Reported: 05/10/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT

Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/04/05  
Date Analyzed: 05/09/05 12:09  
Instrument/Analyst: NT4/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	5.0	< 5.0 U

Reported in  $\mu\text{g/L}$  (ppb)

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol	102%
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ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: OF-03  
SAMPLE

Lab Sample ID: HZ68B  
LIMS ID: 05-7315  
Matrix: Surface Water  
Data Release Authorized: *AS*  
Reported: 05/10/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/04/05  
Date Analyzed: 05/09/05 12:42  
Instrument/Analyst: NT4/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	5.0	1.0 J

Reported in  $\mu\text{g/L}$  (ppb)

Semivolatila Surrogate Recovery

2,4,6-Tribromophenol 87.2%



ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: OF-05  
SAMPLE

Lab Sample ID: HZ68C  
LIMS ID: 05-7316  
Matrix: Surface Water  
Data Release Authorized:  
Reported: 05/10/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT

Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/04/05  
Date Analyzed: 05/09/05 13:15  
Instrument/Analyst: NT4/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	5.0	< 5.0 U

Reported in  $\mu\text{g/L}$  (ppb)

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol 93.9%





ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: OF-04  
SAMPLE

Lab Sample ID: HZ68D  
LIMS ID: 05-7317  
Matrix: Surface Water  
Data Release Authorized: *[Signature]*  
Reported: 05/10/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/04/05  
Date Analyzed: 05/09/05 13:48  
Instrument/Analyst: NT4/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	5.0	< 5.0 U

Reported in  $\mu\text{g/L}$  (ppb)

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol 89.1%



ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: OF-01  
SAMPLE

Lab Sample ID: HZ68E  
LIMS ID: 05-7318  
Matrix: Surface Water  
Data Release Authorized: *[Signature]*  
Reported: 05/10/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT

Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/04/05  
Date Analyzed: 05/09/05 14:22  
Instrument/Analyst: NT4/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	5.0	< 5.0 U


Reported in  $\mu\text{g/L}$  (ppb)

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol 85.3%

ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: MB-050405  
METHOD BLANK

Lab Sample ID: MB-050405  
LIMS ID: 05-7314  
Matrix: Surface Water  
Data Release Authorized:   
Reported: 05/10/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT

Date Sampled: NA  
Date Received: NA

Date Extracted: 05/04/05  
Date Analyzed: 05/09/05 09:24  
Instrument/Analyst: NT4/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	5.0	< 5.0 U

Reported in  $\mu\text{g/L}$  (ppb)

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol	96.0%
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ORGANICS ANALYSIS DATA SHEET  
 PNAs by LVI SW8270C SIM GC/MS  
 Page 1 of 1

Sample ID: LCS-050305  
 LCS/LCSD

Lab Sample ID: LCS-050305  
 LIMS ID: 05-7314  
 Matrix: Surface Water  
 Data Release Authorized: *YMW*  
 Reported: 05/06/05

QC Report No: HZ68-Geomatrix Consultants  
 Project: SPI EVERETT  
 Date Sampled: 04/27/05  
 Date Received: 04/27/05

Date Extracted LCS/LCSD: 05/03/05

Sample Amount LCS: 500 mL  
 LCSD: 500 mL

Date Analyzed LCS: 05/06/05 09:46

Final Extract Volume LCS: 0.50 mL

LCSD: 05/06/05 10:06

LCSD: 0.50 mL

Instrument/Analyst LCS: NT2/Van

Dilution Factor LCS: 1.00

LCSD: NT2/Van

LCSD: 1.00

Analyte	Spike		LCS		LCSD		RPD
	LCS	Added-LCS	Recovery	LCS	Added-LCSD	Recovery	
Phenanthrene	0.28	0.30	93.3%	0.28	0.30	93.3%	0.0%
Chrysene	0.28	0.30	93.3%	0.29	0.30	96.7%	3.5%
Benzo(k)fluoranthene	0.22	0.30	73.3%	0.22	0.30	73.3%	0.0%

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-2-Methylnaphthalene	99.7%	105%
d14-Dibenzo(a,h)anthracene	84.3%	99.7%

Results reported in µg/L  
 RPD calculated using sample concentrations per SW846.

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Surface Water

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT

Client ID	MNP	DBA	TOT OUT
MB-050305	86.3%	90.0%	0
LCS-050305	99.7%	84.3%	0
LCSD-050305	105%	99.7%	0
OF-02	105%	107%	0
OF-03	95.7%	99.3%	0
OF-05	97.0%	94.0%	0
OF-04	106%	109%	0
OF-01	98.0%	107%	0

LCS/MB LIMITS      QC LIMITS

(MNP) = d10-2-Methylnaphthalene      (38-109)      (29-112)  
(DBA) = d14-Dibenzo (a, h) anthracene      (28-131)      (10-133)

Prep Method: SW3520C  
Log Number Range: 05-7314 to 05-7318

ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: LCS-050405  
LCS/LCSD

Lab Sample ID: LCS-050405  
LIMS ID: 05-7314  
Matrix: Surface Water  
Data Release Authorized: *[Signature]*  
Reported: 05/10/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT

Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted LCS/LCSD: 05/04/05

Sample Amount LCS: 500 mL  
LCSD: 500 mL

Date Analyzed LCS: 05/09/05 09:57  
LCSD: 05/09/05 10:30

Final Extract Volume LCS: 0.50 mL  
LCSD: 0.50 mL

Instrument/Analyst LCS: NT4/LJR  
LCSD: NT4/LJR

Dilution Factor LCS: 1.00  
LCSD: 1.00

GPC Cleanup: NO

Analyte	Spike		LCS		Spike		LCSD	
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	RPD	
Pentachlorophenol	19.7	25.0	78.8%	22.0	25.0	88.0%	11.0%	

Semivolatile Surrogate Recovery

	LCS	LCSD
2,4,6-Tribromophenol	100%	97.3%

Results reported in  $\mu\text{g/L}$   
RPD calculated using sample concentrations per SW846.

SW8270 SEMIVOLATILES WATER SURROGATE RECOVERY SUMMARY

Matrix: Surface Water

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT

<u>Client ID</u>	<u>TBP TOT OUT</u>	
MB-050405	96.0%	0
LCS-050405	100%	0
LCSD-050405	97.3%	0
OF-02	102%	0
OF-03	87.2%	0
OF-05	93.9%	0
OF-04	89.1%	0
OF-01	85.3%	0

(TBP) = 2,4,6-Tribromophenol

LCS/MB LIMITS  
(38-116)

QC LIMITS  
(27-136)

Prep Method: SW3520C  
Log Number Range: 05-7314 to 05-7318

**ORGANICS ANALYSIS DATA SHEET**

LVI SW8270C SIM GC/MS

Page 1 of 1

Sample ID: OF-02

SAMPLE

Lab Sample ID: HZ68A

LIMS ID: 05-7314

Matrix: Surface Water

Data Release Authorized: *TTW*

Reported: 05/06/05

QC Report No: HZ68-Geomatrix Consultants

Project: SPI EVERETT

Date Sampled: 04/27/05

Date Received: 04/27/05

Date Extracted: 05/03/05

Date Analyzed: 05/06/05 10:27

Instrument/Analyst: NT2/Van

Sample Amount: 500 mL

Final Extract Volume: 0.50 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.01	0.01 B
208-96-8	Acenaphthylene	0.01	< 0.01 U
83-32-9	Acenaphthene	0.01	< 0.01 U
86-73-7	Fluorene	0.01	< 0.01 U
85-01-8	Phenanthrene	0.01	< 0.01 U
120-12-7	Anthracene	0.01	< 0.01 U
206-44-0	Fluoranthene	0.01	< 0.01 U
129-00-0	Pyrene	0.01	< 0.01 U
56-55-3	Benzo(a)anthracene	0.01	< 0.01 U
218-01-9	Chrysene	0.01	< 0.01 U
205-99-2	Benzo(b)fluoranthene	0.01	< 0.01 U
207-08-9	Benzo(k)fluoranthene	0.01	< 0.01 U
50-32-8	Benzo(a)pyrene	0.01	< 0.01 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.01	< 0.01 U
53-70-3	Dibenz(a,h)anthracene	0.01	< 0.01 U
191-24-2	Benzo(g,h,i)perylene	0.01	< 0.01 U

Reported in µg/L (ppb)

**SIM Semivolatile Surrogate Recovery**

d10-2-Methylnaphthalene	105%
d14-Dibenzo(a,h)anthracene	107%



ORGANICS ANALYSIS DATA SHEET

LVI SW8270C SIM GC/MS

Page 1 of 1

Sample ID: OF-03

SAMPLE

Lab Sample ID: HZ68B

LIMS ID: 05-7315

Matrix: Surface Water

Data Release Authorized: *YVW*

Reported: 05/06/05

QC Report No: HZ68-Geomatrix Consultants

Project: SPI EVERETT

Date Sampled: 04/27/05

Date Received: 04/27/05

Date Extracted: 05/03/05

Date Analyzed: 05/06/05 10:48

Instrument/Analyst: NT2/Van

Sample Amount: 470 mL

Final Extract Volume: 0.50 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.01	0.13 B
208-96-8	Acenaphthylene	0.01	< 0.01 U
83-32-9	Acenaphthene	0.01	0.06
86-73-7	Fluorene	0.01	0.03
85-01-8	Phenanthrene	0.01	< 0.01 U
120-12-7	Anthracene	0.01	< 0.01 U
206-44-0	Fluoranthene	0.01	< 0.01 U
129-00-0	Pyrene	0.01	< 0.01 U
56-55-3	Benzo(a)anthracene	0.01	< 0.01 U
218-01-9	Chrysene	0.01	< 0.01 U
205-99-2	Benzo(b)fluoranthene	0.01	< 0.01 U
207-08-9	Benzo(k)fluoranthene	0.01	< 0.01 U
50-32-8	Benzo(a)pyrene	0.01	< 0.01 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.01	< 0.01 U
53-70-3	Dibenz(a,h)anthracene	0.01	< 0.01 U
191-24-2	Benzo(g,h,i)perylene	0.01	< 0.01 U

Reported in  $\mu\text{g/L}$  (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	95.7%
d14-Dibenzo(a,h)anthracene	99.3%

ORGANICS ANALYSIS DATA SHEET

LVI SW8270C SIM GC/MS

Page 1 of 1

Sample ID: OF-05

SAMPLE

Lab Sample ID: HZ68C

LIMS ID: 05-7316

Matrix: Surface Water

Data Release Authorized: *YWW*

Reported: 05/06/05

QC Report No: HZ68-Geomatrix Consultants

Project: SPI EVERETT

Date Sampled: 04/27/05

Date Received: 04/27/05

Date Extracted: 05/03/05

Date Analyzed: 05/06/05 11:09

Instrument/Analyst: NT2/Van

Sample Amount: 500 mL

Final Extract Volume: 0.50 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.01	0.01 B
208-96-8	Acenaphthylene	0.01	< 0.01 U
83-32-9	Acenaphthene	0.01	0.01
86-73-7	Fluorene	0.01	< 0.01 U
85-01-8	Phenanthrene	0.01	< 0.01 U
120-12-7	Anthracene	0.01	< 0.01 U
206-44-0	Fluoranthene	0.01	< 0.01 U
129-00-0	Pyrene	0.01	< 0.01 U
56-55-3	Benzo(a)anthracene	0.01	< 0.01 U
218-01-9	Chrysene	0.01	< 0.01 U
205-99-2	Benzo(b)fluoranthene	0.01	< 0.01 U
207-08-9	Benzo(k)fluoranthene	0.01	< 0.01 U
50-32-8	Benzo(a)pyrene	0.01	< 0.01 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.01	< 0.01 U
53-70-3	Dibenz(a,h)anthracene	0.01	< 0.01 U
191-24-2	Benzo(g,h,i)perylene	0.01	< 0.01 U

Reported in  $\mu\text{g/L}$  (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	97.0%
d14-Dibenzo(a,h)anthracene	94.0%

ORGANICS ANALYSIS DATA SHEET  
LVI SW8270C SIM GC/MS  
Page 1 of 1

Sample ID: OF-04  
SAMPLE

Lab Sample ID: HZ68D  
LIMS ID: 05-7317  
Matrix: Surface Water  
Data Release Authorized: *www*  
Reported: 05/06/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/03/05  
Date Analyzed: 05/06/05 11:29  
Instrument/Analyst: NT2/Van

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.01	0.01 JB
208-96-8	Acenaphthylene	0.01	< 0.01 U
83-32-9	Acenaphthene	0.01	< 0.01 U
86-73-7	Fluorene	0.01	< 0.01 U
85-01-8	Phenanthrene	0.01	< 0.01 U
120-12-7	Anthracene	0.01	< 0.01 U
206-44-0	Fluoranthene	0.01	< 0.01 U
129-00-0	Pyrene	0.01	< 0.01 U
56-55-3	Benzo (a) anthracene	0.01	< 0.01 U
218-01-9	Chrysene	0.01	< 0.01 U
205-99-2	Benzo (b) fluoranthene	0.01	< 0.01 U
207-08-9	Benzo (k) fluoranthene	0.01	< 0.01 U
50-32-8	Benzo (a) pyrene	0.01	< 0.01 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.01	< 0.01 U
53-70-3	Dibenz (a,h) anthracene	0.01	< 0.01 U
191-24-2	Benzo (g,h,i) perylene	0.01	< 0.01 U

Reported in  $\mu\text{g/L}$  (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	106%
d14-Dibenzo (a,h) anthracene	109%

ORGANICS ANALYSIS DATA SHEET  
LVI SW8270C SIM GC/MS  
Page 1 of 1

Sample ID: OF-01  
SAMPLE



Lab Sample ID: HZ68E  
LIMS ID: 05-7318  
Matrix: Surface Water  
Data Release Authorized: *MMW*  
Reported: 05/06/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/03/05  
Date Analyzed: 05/06/05 11:50  
Instrument/Analyst: NT2/Van

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.01	0.04 B
208-96-8	Acenaphthylene	0.01	< 0.01 U
83-32-9	Acenaphthene	0.01	0.02
86-73-7	Fluorene	0.01	0.01
85-01-8	Phenanthrene	0.01	0.03
120-12-7	Anthracene	0.01	< 0.01 U
206-44-0	Fluoranthene	0.01	0.01
129-00-0	Pyrene	0.01	0.01
56-55-3	Benzo (a) anthracene	0.01	< 0.01 U
218-01-9	Chrysene	0.01	< 0.01 U
205-99-2	Benzo (b) fluoranthene	0.01	< 0.01 U
207-08-9	Benzo (k) fluoranthene	0.01	< 0.01 U
50-32-8	Benzo (a) pyrene	0.01	< 0.01 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.01	< 0.01 U
53-70-3	Dibenz (a,h) anthracene	0.01	< 0.01 U
191-24-2	Benzo (g,h,i) perylene	0.01	< 0.01 U

Reported in  $\mu\text{g/L}$  (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	98.0%
d14-Dibenzo (a,h) anthracene	107%

ORGANICS ANALYSIS DATA SHEET

LVI SW8270C SIM GC/MS

Page 1 of 1

Sample ID: MB-050305

METHOD BLANK

Lab Sample ID: MB-050305

LIMS ID: 05-7314

Matrix: Surface Water

Data Release Authorized: *mm*

Reported: 05/06/05

QC Report No: HZ68-Geomatrix Consultants

Project: SPI EVERETT

Date Sampled: NA

Date Received: NA

Date Extracted: 05/03/05

Date Analyzed: 05/06/05 09:25

Instrument/Analyst: NT2/Van

Sample Amount: 500 mL

Final Extract Volume: 0.50 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.01	0.01 J
208-96-8	Acenaphthylene	0.01	< 0.01 U
83-32-9	Acenaphthene	0.01	< 0.01 U
86-73-7	Fluorene	0.01	< 0.01 U
85-01-8	Phenanthrene	0.01	< 0.01 U
120-12-7	Anthracene	0.01	< 0.01 U
206-44-0	Fluoranthene	0.01	< 0.01 U
129-00-0	Pyrene	0.01	< 0.01 U
56-55-3	Benzo (a) anthracene	0.01	< 0.01 U
218-01-9	Chrysene	0.01	< 0.01 U
205-99-2	Benzo (b) fluoranthene	0.01	< 0.01 U
207-08-9	Benzo (k) fluoranthene	0.01	< 0.01 U
50-32-8	Benzo (a) pyrene	0.01	< 0.01 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.01	< 0.01 U
53-70-3	Dibenz (a,h) anthracene	0.01	< 0.01 U
191-24-2	Benzo (g,h,i) perylene	0.01	< 0.01 U

Reported in  $\mu\text{g/L}$  (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	86.3%
d14-Dibenzo (a,h) anthracene	90.0%

**ORGANICS ANALYSIS DATA SHEET**  
**TOTAL DIESEL RANGE HYDROCARBONS**  
 NWTPHD by GC/FID  
 Page 1 of 1  
 Matrix: Surface Water

QC Report No: HZ68-Geomatrix Consultants  
 Project: SPI EVERETT

Date Received: 04/27/05

Data Release Authorized: *mw*  
 Reported: 05/06/05

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result mg/L
MB-050405 05-7314	Method Blank HC ID: ---	05/04/05	05/04/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 0.25 U < 0.50 U 94.9%
HZ68A 05-7314	OF-02 HC ID: ---	05/04/05	05/04/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 0.25 U < 0.50 U 97.3%
HZ68B 05-7315	OF-03 HC ID: ---	05/04/05	05/04/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 0.25 U < 0.50 U 93.1%
HZ68C 05-7316	OF-05 HC ID: ---	05/04/05	05/04/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 0.25 U < 0.50 U 87.6%
HZ68D 05-7317	OF-04 HC ID: ---	05/04/05	05/04/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 0.25 U < 0.50 U 99.1%
HZ68E 05-7318	OF-01 HC ID: ---	05/04/05	05/04/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 0.25 U < 0.50 U 91.1%

Diesel quantitation on total peaks in the range from C12 to C24.  
 Motor Oil quantitation on total peaks in the range from C24 to C38.  
 HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in  
 ranges are not identifiable.

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1

Sample ID: LCS-050405

LCS/LCSD

Lab Sample ID: LCS-050405

LIMS ID: 05-7314

Matrix: Surface Water

Data Release Authorized: *m*

Reported: 05/06/05

QC Report No: HZ68-Geomatrix Consultants

Project: SPI EVERETT

Date Sampled: 04/27/05

Date Received: 04/27/05

Date Extracted LCS/LCSD: 05/04/05

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 05/04/05 18:13

Final Extract Volume LCS: 1.0 mL

LCSD: 05/04/05 18:29

LCSD: 1.0 mL

Instrument/Analyst LCS: FID/JRains

Dilution Factor LCS: 1.00

LCSD: FID/JRains

LCSD: 1.00

Range	Spike		LCS		Spike		LCSD		RPD
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	LCSD		
Diesel	2.65	3.00	88.3%	2.68	3.00	89.3%	1.1%		

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	91.8%	92.9%

Results reported in mg/L

RPD calculated using sample concentrations per SW846.

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Surface Water

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-050405	94.9%	0
LCS-050405	91.8%	0
LCSD-050405	92.9%	0
OF-02	97.3%	0
OF-03	93.1%	0
OF-05	87.6%	0
OF-04	99.1%	0
OF-01	91.1%	0

LCS/MB LIMITS      QC LIMITS

(OTER) = o-Terphenyl

(54-131)

(46-123)

Prep Method: SW3510C  
Log Number Range: 05-7314 to 05-7318



TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Surface Water  
Date Received: 04/27/05

ARI Job: HZ68  
Project: SPI EVERETT

ARI ID	Client ID	Client Amt	Final Vol	Prep Date
05-7314-050405MB1	Method Blank	500 mL	1.00 mL	05/04/05
05-7314-050405LCS1	Lab Control	500 mL	1.00 mL	05/04/05
05-7314-050405LCSD1	Lab Control Dup	500 mL	1.00 mL	05/04/05
05-7314-HZ68A	OF-02	500 mL	1.00 mL	05/04/05
05-7315-HZ68B	OF-03	500 mL	1.00 mL	05/04/05
05-7316-HZ68C	OF-05	500 mL	1.00 mL	05/04/05
05-7317-HZ68D	OF-04	500 mL	1.00 mL	05/04/05
05-7318-HZ68E	OF-01	500 mL	1.00 mL	05/04/05

SAMPLE RESULTS-CONVENTIONALS  
HZ68-Geomatrix Consultants



Matrix: Surface Water  
Data Release Authorized: *[Signature]*  
Reported: 05/10/05

Project: SPI EVERETT  
Event: NA  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Client ID: OF-02  
ARI ID: 05-7314 HZ68A

Analyte	Date Batch	Method	Units	RL	Sample
Total Suspended Solids	04/28/05 042805#1	EPA 160.2	mg/L	1.1	2.5

RL Analytical reporting limit  
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS  
HZ68-Geomatrix Consultants



Matrix: Surface Water  
Data Release Authorized: *ML*  
Reported: 05/10/05

Project: SPI EVERETT  
Event: NA  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Client ID: OF-03  
ARI ID: 05-7315 HZ68B

Analyte	Date Batch	Method	Units	RL	Sample
Total Suspended Solids	04/28/05 042805#1	EPA 160.2	mg/L	2.2	8.9

RL Analytical reporting limit  
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS  
HZ68-Geomatrix Consultants



Matrix: Surface Water  
Data Release Authorized: *[Signature]*  
Reported: 05/10/05

Project: SPI EVERETT  
Event: NA  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Client ID: OF-05  
ARI ID: 05-7316 HZ68C

Analyte	Date Batch	Method	Units	RL	Sample
Total Suspended Solids	04/28/05 042805#1	EPA 160.2	mg/L	1.3	28.7

RL Analytical reporting limit  
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS  
HZ68-Geomatrix Consultants



Matrix: Surface Water  
Data Release Authorized: *[Signature]*  
Reported: 05/10/05

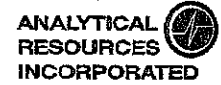
Project: SPI EVERETT  
Event: NA  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Client ID: OF-04  
ARI ID: 05-7317 HZ68D

Analyte	Date Batch	Method	Units	RL	Sample
Total Suspended Solids	04/28/05 042805#1	EPA 160.2	mg/L	1.0	< 1.0 U

RL Analytical reporting limit  
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS  
HZ68-Geomatrix Consultants



Matrix: Surface Water  
Data Release Authorized: *[Signature]*  
Reported: 05/10/05

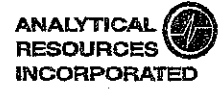
Project: SPI EVERETT  
Event: NA  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Client ID: OF-01  
ARI ID: 05-7318 HZ68E

Analyte	Date Batch	Method	Units	RL	Sample
Total Suspended Solids	04/28/05 042805#1	EPA 160.2	mg/L	1.1	11.9

RL Analytical reporting limit  
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS  
HZ68-Geomatrix Consultants



Matrix: Surface Water  
Data Release Authorized *BC*  
Reported: 05/10/05

Project: SPI EVERETT  
Event: NA  
Date Sampled: NA  
Date Received: NA

Analyte	Date	Units	Blank
Total Suspended Solids	04/28/05	mg/L	< 1.0 U

LAB CONTROL RESULTS-CONVENTIONALS  
HZ68-Geomatrix Consultants



Matrix: Surface Water  
Data Release Authorized *ML*  
Reported: 05/10/05

Project: SPI EVERETT  
Event: NA  
Date Sampled: NA  
Date Received: NA

Analyte	Date	Units	LCS	Spike Added	Recovery
Total Suspended Solids	04/28/05	mg/L	49.6	50.0	99.2%



REPLICATE RESULTS-CONVENTIONALS  
HZ68-Geomatrix Consultants



Matrix: Surface Water  
Data Release Authorized: *gr*  
Reported: 05/10/05

Project: SPI EVERETT  
Event: NA  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: HZ68B Client ID: OF-03					
Total Suspended Solids	04/28/05	mg/L	8.9	8.4	5.8%



INORGANICS ANALYSIS DATA SHEET  
TOTAL METALS  
Page 1 of 1

Sample ID: OF-02  
SAMPLE

Lab Sample ID: HZ68A  
LIMS ID: 05-7314  
Matrix: Surface Water  
Data Release Authorized: *[Signature]*  
Reported: 05/09/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/02/05	200.8	05/05/05	7440-38-2	Arsenic	0.2	1.0	
200.8	05/02/05	200.8	05/05/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/02/05	200.8	05/05/05	7440-47-3	Chromium	0.5	0.6	
200.8	05/02/05	200.8	05/05/05	7440-50-8	Copper	0.5	2.7	
200.8	05/02/05	200.8	05/05/05	7439-92-1	Lead	1	1	U
200.8	05/02/05	200.8	05/05/05	7440-66-6	Zinc	4	12	

U-Analyte undetected at given RL  
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET  
TOTAL METALS  
Page 1 of 1

Sample ID: OF-03  
SAMPLE

Lab Sample ID: HZ68B  
LIMS ID: 05-7315  
Matrix: Surface Water  
Data Release Authorized *[Signature]*  
Reported: 05/09/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT

Date Sampled: 04/27/05  
Date Received: 04/27/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/02/05	200.8	05/05/05	7440-38-2	Arsenic	0.5	22.9	
200.8	05/02/05	200.8	05/05/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/02/05	200.8	05/06/05	7440-47-3	Chromium	0.5	1.2	
200.8	05/02/05	200.8	05/05/05	7440-50-8	Copper	0.5	2.9	
200.8	05/02/05	200.8	05/05/05	7439-92-1	Lead	1	1	U
200.8	05/02/05	200.8	05/05/05	7440-66-6	Zinc	4	8	

U-Analyte undetected at given RL  
RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS  
Page 1 of 1

Sample ID: OF-05  
SAMPLE

Lab Sample ID: HZ68C  
LIMS ID: 05-7316  
Matrix: Surface Water  
Data Release Authorized: *[Signature]*  
Reported: 05/09/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT

Date Sampled: 04/27/05  
Date Received: 04/27/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/02/05	200.8	05/05/05	7440-38-2	Arsenic	0.2	35.8	
200.8	05/02/05	200.8	05/05/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/02/05	200.8	05/05/05	7440-47-3	Chromium	0.5	0.6	
200.8	05/02/05	200.8	05/05/05	7440-50-8	Copper	0.5	1.5	
200.8	05/02/05	200.8	05/05/05	7439-92-1	Lead	1	1	U
200.8	05/02/05	200.8	05/05/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL  
RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS  
Page 1 of 1

Sample ID: OF-04  
SAMPLE

Lab Sample ID: HZ68D  
LIMS ID: 05-7317  
Matrix: Surface Water  
Data Release Authorized: *DL*  
Reported: 05/09/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/02/05	200.8	05/05/05	7440-38-2	Arsenic	0.2	2.3	
200.8	05/02/05	200.8	05/05/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/02/05	200.8	05/05/05	7440-47-3	Chromium	0.5	0.7	
200.8	05/02/05	200.8	05/05/05	7440-50-8	Copper	0.5	1.9	
200.8	05/02/05	200.8	05/05/05	7439-92-1	Lead	1	1	U
200.8	05/02/05	200.8	05/05/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL  
RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS  
Page 1 of 1

Sample ID: OF-01  
SAMPLE

Lab Sample ID: HZ68E  
LIMS ID: 05-7318  
Matrix: Surface Water  
Data Release Authorized: *[Signature]*  
Reported: 05/09/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT

Date Sampled: 04/27/05  
Date Received: 04/27/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/02/05	200.8	05/05/05	7440-38-2	Arsenic	0.2	33.2	
200.8	05/02/05	200.8	05/05/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/02/05	200.8	05/05/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/02/05	200.8	05/05/05	7440-50-8	Copper	0.5	1.2	
200.8	05/02/05	200.8	05/05/05	7439-92-1	Lead	1	1	U
200.8	05/02/05	200.8	05/05/05	7440-66-6	Zinc	4	4	

U-Analyte undetected at given RL  
RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS  
Page 1 of 1

Sample ID: RIVER-01  
SAMPLE

Lab Sample ID: HZ68F  
LIMS ID: 05-7319  
Matrix: Surface Water  
Data Release Authorized:  
Reported: 05/09/05

QC Report No: HZ68-Geomatrix Consultants  
Project: SPI EVERETT

Date Sampled: 04/27/05  
Date Received: 04/27/05

*ma*

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
3010A	05/02/05	6010B	05/04/05	7440-70-2	Calcium	50	10,700	
3010A	05/02/05	6010B	05/04/05	7439-95-4	Magnesium	50	16,200	

Calculated Hardness (mg-CaCO3/L): 93

U-Analyte undetected at given RL  
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: HZ68MB

LIMS ID: 05-7314

Matrix: Surface Water

Data Release Authorized: 

Reported: 05/09/05

QC Report No: HZ68-Geomatrix Consultants

Project: SPI EVERETT

Date Sampled: NA

Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/02/05	200.8	05/05/05	7440-38-2	Arsenic	0.2	0.2	U
200.8	05/02/05	200.8	05/05/05	7440-43-9	Cadmium	0.2	0.2	U
3010A	05/02/05	6010B	05/04/05	7440-70-2	Calcium	50	50	U
200.8	05/02/05	200.8	05/05/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/02/05	200.8	05/05/05	7440-50-8	Copper	0.5	0.5	U
200.8	05/02/05	200.8	05/05/05	7439-92-1	Lead	1	1	U
3010A	05/02/05	6010B	05/04/05	7439-95-4	Magnesium	50	50	U
200.8	05/02/05	200.8	05/05/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL

RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: HZ68LCS

LIMS ID: 05-7314

Matrix: Surface Water

Data Release Authorized: *JR*

Reported: 05/09/05

QC Report No: HZ68-Geomatrix Consultants

Project: SPI EVERETT

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	24.5	25.0	98.0%	
Cadmium	200.8	23.6	25.0	94.4%	
Calcium	6010B	9510	10000	95.1%	
Chromium	200.8	24.4	25.0	97.6%	
Copper	200.8	25.1	25.0	100%	
Lead	200.8	24.6	25.0	98.4%	
Magnesium	6010B	9770	10000	97.7%	
Zinc	200.8	75.6	80.0	94.5%	

Reported in µg/L

N-Control limit not met

Control Limits: 80-120%





**Analytical Resources, Incorporated**  
Analytical Chemists and Consultants

May 16, 2005

Joe Morrice  
GeoMatrix Consultants  
600 University Suite 1020  
Seattle, WA 98101

**RE: Project: Everett – Sierra Pacific**  
**ARI Job No: HZ67**

Dear Joe:

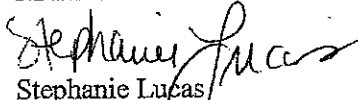
Please find enclosed a sample custody record (COC) and a set of analytical results for the above referenced project. Analytical Resources, Inc. accepted five sediment samples in good condition on April 27, 2005.

Selected samples were analyzed for NWTPH-D, PCB, PAH, TOC, PCP, and total metals as requested on the COC. Analysis for Dioxins was subcontracted to Pace Analytical of Minnesota. Dioxin data will follow in a separate report.

Please refer to the case narrative for anomalies associated with these samples.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact your project manager.

Sincerely,  
ANALYTICAL RESOURCES, INC.

  
Stephanie Lucas  
Project Manager  
steph@arilabs.com  
(206) 695-6213

HZ67

5-5/28

MCS Environmental  
6505 - 216<sup>th</sup> Street SW, Suite 100  
Mountlake Terrace, WA 98043  
(425) 667-4340 Ext: 2343

### CHAIN OF CUSTODY

Gary Maxwell

Place GOC Form Number Label Here  
or write in seq. number below:

Analysis: Containers										
TPH-D, PCB, PAHs	TOC, PCP, <sup>net</sup>	Dioxins								

Recorded by: GSM  
Checked by: GSM

MCS Environmental, Inc.  
OF-SED-02  
COC Form  
Initials: GSM  
Date: 4/27/05 Time: 1130

Date:											Number of containers
Time:											Number of Containers with Custody Seal Intact

MCS Environmental, Inc.  
OF-SED-01  
COC Form  
Initials: GSM  
Date: 4/27/05 Time: 1220

Date:											Number of containers
Time:											Number of Containers with Custody Seal Intact

MCS Environmental, Inc.  
OF-SED-03  
COC Form  
Initials: GSM  
Date: 4/27/05 Time: 1310

Date:											Number of containers
Time:											Number of Containers with Custody Seal Intact

OF-SED-05  
COC Form  
Initials: GSM  
Date: 4/27/05 Time: 1355  
MCS Environmental, Inc.

Date:											Number of containers
Time:											Number of Containers with Custody Seal Intact

OF-SED-04  
COC Form  
Initials: GSM  
Date: 4/27/05 ne: 1434

Date:											Number of containers
Time:											Number of Containers with Custody Seal Intact

Place Sample ID Label Here  
or Write ID Number Here:

Date:											Number of containers
Time:											Number of Containers with Custody Seal Intact

Place Sample ID Label Here  
or Write ID Number Here:

Date:											Number of containers
Time:											Number of Containers with Custody Seal Intact

Laboratory Sample Receipt	
Number of Sample Containers in Shipping Container	
Shipping Container Chain of Custody Seal Intact (Y/N)	
Receipt Condition Comments (e.g., thawed, warm)	

Relinquished By		Transported By		Received By	
Name: <u>Gary Maxwell</u>	Name: <u>[Signature]</u>	Name: <u>[Signature]</u>	Name: <u>[Signature]</u>	Name: <u>[Signature]</u>	Name: <u>[Signature]</u>
Date: <u>4-27-05</u>	Date: <u>4-27-05</u>	Date: <u>4-27-05</u>	Date: <u>4-27-05</u>	Date: <u>4-27-05</u>	Date: <u>4-27-05</u>
Time: <u>1529</u>	Time: <u>1712</u>	Time: <u>1719</u>	Time: <u>1719</u>	Time: <u>1719</u>	Time: <u>1719</u>



**Case Narrative**

Everett - Sierra Pacific

ARI Job: HZ67

May 16, 2005

**PAH by method 8270C**

The soil samples were screened prior to extraction on 5/3/05. The samples were analyzed between 5/5/05 and 5/9/05 within the method recommended holding time

**Surrogates:** All surrogate recoveries were within ARI calculated control limits.

**Method Blank:** The method blank was free of analytes of interest.

**Samples:** Anthracene was "J" flagged in samples OF-SED-05 and OF-SED-04. Pentachlorophenol was "J" flagged in sample OF-SED-04. The "J" indicates an estimated concentration when the value is less than ARI's established reporting limit(s).

No other anomalies were associated with these samples.

**LCS/LCSD (s):** All percent recoveries and RPDs were within control limits.

**Low Level PCBs by 8082**

The soil samples were screened prior to extraction on 5/3/05. The samples were analyzed on 5/6/05 within the method recommended holding time

**Surrogates:** All surrogate recoveries were within ARI calculated control limits.

**Method Blank:** The method blank was free of analytes of interest.

**Samples:** Aroclor 1260 has a raised reporting limit and has been "Y" flagged in sample OF-SED-02. Aroclor 1254 has a raised reporting limit and has been "Y" flagged in sample OF-SED-01. The "Y" indicates 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.

No other anomalies were associated with these samples.

**LCS/LCSD (s):** All percent recoveries and RPDs were within control limits.

**NWTPH-Dx by WDOE methods**

The soil samples were extracted on 5/3/05 and analyzed on 5/4/05 within the method recommended holding time.

**Surrogates:** All surrogate recoveries were within ARI calculated control limits.

**Method Blank:** The method blank was free of analytes of interest.



Case Narrative  
Everett - Sierra Pacific  
ARI Job: HZ67  
May 16, 2005  
Page 2

**Samples:** No anomalies were associated with these samples.

**LCS/LCSD (s):** All percent recoveries and RPDs were within control limits.

**Total Metals by 6010B**

The soil samples were prepped on 5/2/05 and analyzed on 5/4/05 within the method recommended holding time.

**Method Blank:** The method blank was free of contamination.

**Samples:** No anomalies were associated with these samples.

**LCS/Spike Blank:** All percent recoveries were in control.

**Total Organic Carbon**

The samples were analyzed on 4/29/05, 5/2/05 and 5/12/05 within the method recommended holding times.

**Method Blank:** The method blank was free of contamination.

**Samples:** No anomalies were associated with these samples.

**LCS/SRM/Replicate/MS/MSD:** All percent recoveries were in control.



## Data Reporting Qualifiers

Effective 12/28/04

### 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  $\geq$  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  $\leq 5$  times the Reporting Limit and the replicate control limit defaults to  $\pm 1$  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
- NR Spiked compound recovery is not reported due to chromatographic interference
- 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.
- 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
- 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
- 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.
- 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  $\geq 40\%$  RPD with no obvious chromatographic interference

### Geotechnical Data

- 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
- F Samples were frozen prior to particle size determination



SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: HZ67-Geomatrix Consultants  
Project:

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	TOT	OUT
MB-050305	68.4%	66.8%	80.8%	60.0%	69.6%	68.8%	61.3%	64.0%	0	
LCS-050305	67.2%	68.0%	77.6%	58.8%	66.9%	64.8%	59.5%	63.2%	0	
LCSD-050305	69.6%	68.8%	76.0%	61.2%	68.3%	68.8%	59.5%	66.4%	0	
OF-SED-02	63.6%	62.0%	61.6%	53.2%	63.5%	62.1%	59.7%	62.1%	0	
OF-SED-01	71.2%	70.0%	61.6%	56.8%	68.8%	71.2%	66.7%	66.9%	0	
OF-SED-03	66.0%	66.8%	54.0%	52.4%	63.2%	65.1%	61.1%	62.7%	0	
OF-SED-05	65.6%	65.6%	51.2%	54.0%	62.1%	63.7%	54.4%	60.5%	0	
OF-SED-04	56.4%	62.0%	48.4%	45.6%	58.7%	54.7%	55.2%	54.1%	0	

LCS/MB LIMITS      QC LIMITS

(NBZ) = d5-Nitrobenzene	(39-93)	(28-103)
(FBP) = 2-Fluorobiphenyl	(40-95)	(33-104)
(TPH) = d14-p-Terphenyl	(46-116)	(31-120)
(DCB) = d4-1,2-Dichlorobenzene	(41-86)	(30-84)
(PHL) = d5-Phenol	(45-91)	(29-109)
(2FP) = 2-Fluorophenol	(36-100)	(24-112)
(TBP) = 2,4,6-Tribromophenol	(34-110)	(27-134)
(2CP) = d4-2-Chlorophenol	(46-89)	(34-101)

Prep Method: SW3550B  
Log Number Range: 05-7309 to 05-7313

ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by SW8270 GC/MS  
Page 1 of 1

Sample ID: MB-050305  
METHOD BLANK

Lab Sample ID: MB-050305  
LIMS ID: 05-7309  
Matrix: Sediment  
Data Release Authorized:  
Reported: 05/11/05

QC Report No: HZ67-Geomatrix Consultants  
Project:

Date Sampled: NA  
Date Received: NA

Date Extracted: 05/03/05  
Date Analyzed: 05/05/05 13:23  
Instrument/Analyst: NT6/LJR  
GPC Cleanup: No

Sample Amount: 25.0 g  
Final Extract Volume: 0.5 mL  
Dilution Factor: 1.00  
Percent Moisture: NA  
pH: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	20	< 20 U
208-96-8	Acenaphthylene	20	< 20 U
83-32-9	Acenaphthene	20	< 20 U
86-73-7	Fluorene	20	< 20 U
87-86-5	Pentachlorophenol	100	< 100 U
85-01-8	Phenanthrene	20	< 20 U
120-12-7	Anthracene	20	< 20 U
206-44-0	Fluoranthene	20	< 20 U
129-00-0	Pyrene	20	< 20 U
56-55-3	Benzo (a) anthracene	20	< 20 U
218-01-9	Chrysene	20	< 20 U
205-99-2	Benzo (b) fluoranthene	20	< 20 U
207-08-9	Benzo (k) fluoranthene	20	< 20 U
50-32-8	Benzo (a) pyrene	20	< 20 U
193-39-5	Indeno (1,2,3-cd) pyrene	20	< 20 U
53-70-3	Dibenz (a,h) anthracene	20	< 20 U
191-24-2	Benzo (g,h,i) perylene	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.4%	2-Fluorobiphenyl	66.8%
d14-p-Terphenyl	80.8%	d4-1,2-Dichlorobenzene	60.0%
d5-Phenol	69.6%	2-Fluorophenol	68.8%
2,4,6-Tribromophenol	61.3%	d4-2-Chlorophenol	64.0%

ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by SW8270 GC/MS  
Page 1 of 1

Sample ID: OF-SED-02  
SAMPLE

Lab Sample ID: HZ67A  
LIMS ID: 05-7309  
Matrix: Sediment  
Data Release Authorized:  
Reported: 05/11/05

QC Report No: HZ67-Geomatrix Consultants  
Project:  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/03/05  
Date Analyzed: 05/09/05 18:33  
Instrument/Analyst: NT6/LJR  
GPC Cleanup: No

Sample Amount: 25.1 g-dry-wt  
Final Extract Volume: 0.5 mL  
Dilution Factor: 1.00  
Percent Moisture: 49.8%  
pH: 7.1

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	20	26
208-96-8	Acenaphthylene	20	28
83-32-9	Acenaphthene	20	32
86-73-7	Fluorene	20	20
87-86-5	Pentachlorophenol	100	< 100 U
85-01-8	Phenanthrene	20	120
120-12-7	Anthracene	20	130
206-44-0	Fluoranthene	20	1,200
129-00-0	Pyrene	20	910
56-55-3	Benzo (a) anthracene	20	340
218-01-9	Chrysene	20	780
205-99-2	Benzo (b) fluoranthene	20	1,200
207-08-9	Benzo (k) fluoranthene	20	780
50-32-8	Benzo (a) pyrene	20	700
193-39-5	Indeno (1,2,3-cd) pyrene	20	200
53-70-3	Dibenz (a, h) anthracene	20	82
191-24-2	Benzo (g, h, i) perylene	20	200

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	63.6%	2-Fluorobiphenyl	62.0%
d14-p-Terphenyl	61.6%	d4-1,2-Dichlorobenzene	53.2%
d5-Phenol	63.5%	2-Fluorophenol	62.1%
2,4,6-Tribromophenol	59.7%	d4-2-Chlorophenol	62.1%

ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by SW8270 GC/MS  
Page 1 of 1

Sample ID: OF-SED-01  
SAMPLE

Lab Sample ID: HZ67B  
LIMS ID: 05-7310  
Matrix: Sediment  
Data Release Authorized:  
Reported: 05/11/05

QC Report No: HZ67-Geomatrix Consultants  
Project:

Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/03/05  
Date Analyzed: 05/09/05 18:02  
Instrument/Analyst: NT6/LJR  
GPC Cleanup: No

Sample Amount: 25.2 g-dry-wt  
Final Extract Volume: 0.5 mL  
Dilution Factor: 1.00  
Percent Moisture: 55.9%  
pH: 7.1

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	20	35
208-96-8	Acenaphthylene	20	24
83-32-9	Acenaphthene	20	25
86-73-7	Fluorene	20	41
87-86-5	Pentachlorophenol	99	< 99 U
85-01-8	Phenanthrene	20	300
120-12-7	Anthracene	20	210
206-44-0	Fluoranthene	20	900
129-00-0	Pyrene	20	530
56-55-3	Benzo (a) anthracene	20	240
218-01-9	Chrysene	20	600
205-99-2	Benzo (b) fluoranthene	20	550
207-08-9	Benzo (k) fluoranthene	20	400
50-32-8	Benzo (a) pyrene	20	340
193-39-5	Indeno (1,2,3-cd) pyrene	20	96
53-70-3	Dibenz (a,h) anthracene	20	25
191-24-2	Benzo (g,h,i) perylene	20	94

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	71.2%	2-Fluorobiphenyl	70.0%
d14-p-Terphenyl	61.6%	d4-1,2-Dichlorobenzene	56.8%
d5-Phenol	68.8%	2-Fluorophenol	71.2%
2,4,6-Tribromophenol	66.7%	d4-2-Chlorophenol	66.9%

ORGANICS ANALYSIS DATA SHEET

PSDDA Semivolatiles by SW8270 GC/MS

Page 1 of 1



Sample ID: OF-SED-03

SAMPLE

Lab Sample ID: HZ67C

LIMS ID: 05-7311

Matrix: Sediment

Data Release Authorized:

Reported: 05/11/05

QC Report No: HZ67-Geomatrix Consultants

Project:

Date Sampled: 04/27/05

Date Received: 04/27/05

Date Extracted: 05/03/05

Date Analyzed: 05/09/05 17:30

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Sample Amount: 25.6 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 41.9%

pH: 7.0

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	20	27
208-96-8	Acenaphthylene	20	< 20 U
83-32-9	Acenaphthene	20	23
86-73-7	Fluorene	20	31
87-86-5	Pentachlorophenol	98	< 98 U
85-01-8	Phenanthrene	20	130
120-12-7	Anthracene	20	45
206-44-0	Fluoranthene	20	360
129-00-0	Pyrene	20	200
56-55-3	Benzo (a) anthracene	20	120
218-01-9	Chrysene	20	180
205-99-2	Benzo (b) fluoranthene	20	100
207-08-9	Benzo (k) fluoranthene	20	110
50-32-8	Benzo (a) pyrene	20	68
193-39-5	Indeno (1,2,3-cd) pyrene	20	< 20 U
53-70-3	Dibenz (a, h) anthracene	20	< 20 U
191-24-2	Benzo (g, h, i) perylene	20	< 20 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	66.0%	2-Fluorobiphenyl	65.8%
d14-p-Terphenyl	54.0%	d4-1,2-Dichlorobenzene	52.4%
d5-Phenol	63.2%	2-Fluorophenol	65.1%
2,4,6-Tribromophenol	61.1%	d4-2-Chlorophenol	62.7%

ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by SW8270 GC/MS  
Page 1 of 1

Sample ID: OF-SED-05  
SAMPLE

Lab Sample ID: HZ67D  
LIMS ID: 05-7312  
Matrix: Sediment  
Data Release Authorized:  
Reported: 05/11/05

QC Report No: HZ67-Geomatrix Consultants  
Project:

Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/03/05  
Date Analyzed: 05/09/05 16:59  
Instrument/Analyst: NT6/LJR  
GPC Cleanup: No

Sample Amount: 25.0 g-dry-wt  
Final Extract Volume: 0.5 mL  
Dilution Factor: 1.00  
Percent Moisture: 41.8%  
pH: 7.3

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	20	< 20 U
208-96-8	Acenaphthylene	20	< 20 U
83-32-9	Acenaphthene	20	< 20 U
86-73-7	Fluorene	20	< 20 U
87-86-5	Pentachlorophenol	100	< 100 U
85-01-8	Phenanthrene	20	56
120-12-7	Anthracene	20	20 J
206-44-0	Fluoranthene	20	94
129-00-0	Pyrene	20	47
56-55-3	Benzo (a) anthracene	20	26
218-01-9	Chrysene	20	38
205-99-2	Benzo (b) fluoranthene	20	36
207-08-9	Benzo (k) fluoranthene	20	32
50-32-8	Benzo (a) pyrene	20	22
193-39-5	Indeno (1,2,3-cd) pyrene	20	< 20 U
53-70-3	Dibenz (a,h) anthracene	20	< 20 U
191-24-2	Benzo (g,h,i) perylene	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	65.6%	2-Fluorobiphenyl	65.6%
d14-p-Terphenyl	51.2%	d4-1,2-Dichlorobenzene	54.0%
d5-Phenol	62.1%	2-Fluorophenol	63.7%
2,4,6-Tribromophenol	54.4%	d4-2-Chlorophenol	60.5%

ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by SW8270 GC/MS  
Page 1 of 1

Sample ID: OF-SED-04  
SAMPLE

Lab Sample ID: HZ67E  
LIMS ID: 05-7313  
Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 05/11/05

QC Report No: HZ67-Geomatrix Consultants  
Project:

Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/03/05  
Date Analyzed: 05/09/05 16:27  
Instrument/Analyst: NT6/LJR  
GPC Cleanup: No

Sample Amount: 25.1 g-dry-wt  
Final Extract Volume: 0.5 mL  
Dilution Factor: 1.00  
Percent Moisture: 26.1%  
pH: 7.5

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	20	< 20 U
208-96-8	Acenaphthylene	20	22
83-32-9	Acenaphthene	20	< 20 U
86-73-7	Fluorene	20	< 20 U
87-86-5	Pentachlorophenol	100	20 J
85-01-8	Phenanthrene	20	35
120-12-7	Anthracene	20	20 J
206-44-0	Fluoranthene	20	110
129-00-0	Pyrene	20	98
56-55-3	Benzo (a) anthracene	20	49
218-01-9	Chrysene	20	63
205-99-2	Benzo (b) fluoranthene	20	32
207-08-9	Benzo (k) fluoranthene	20	42
50-32-8	Benzo (a) pyrene	20	43
193-39-5	Indeno (1,2,3-cd) pyrene	20	< 20 U
53-70-3	Dibenz (a, h) anthracene	20	< 20 U
191-24-2	Benzo (g, h, i) perylene	20	< 20 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	56.4%	2-Fluorobiphenyl	62.0%
d14-p-Terphenyl	48.4%	d4-1,2-Dichlorobenzene	45.6%
d5-Phenol	58.7%	2-Fluorophenol	54.7%
2,4,6-Tribromophenol	55.2%	d4-2-Chlorophenol	54.1%

ORGANICS ANALYSIS DATA SHEET  
PSDDA Semivolatiles by GC/MS  
Page 1 of 1

Sample ID: LCS-050305  
LCS/LCSD

Lab Sample ID: LCS-050305  
LIMS ID: 05-7309  
Matrix: Sediment  
Data Release Authorized:  
Reported: 05/11/05

QC Report No: HZ67-Geomatrix Consultants  
Project:  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted LCS/LCSD: 05/03/05

Sample Amount LCS: 25.0 g

Date Analyzed LCS: 05/05/05 13:55

Final Extract Volume LCS: 0.5 mL

LCSD: 05/05/05 14:27

LCSD: 0.5 mL

Instrument/Analyst LCS: NT6/LJR

Dilution Factor LCS: 1.00

LCSD: NT6/LJR

LCSD: 1.00

GPC Cleanup: NO

Percent Moisture: NA

pH: NA

Analyte	Spike		LCS		Spike		LCSD	
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	RPD	
Acenaphthene	328	500	65.6%	376	500	75.2%	13.6%	
Pentachlorophenol	479	750	63.9%	532	750	70.9%	10.5%	
Pyrene	370	500	74.0%	397	500	79.4%	7.0%	

Semivolatile Surrogate Recovery

	LCS	LCSD
d5-Nitrobenzene	67.2%	69.6%
2-Fluorobiphenyl	68.0%	68.8%
d14-p-Terphenyl	77.6%	76.0%
d4-1,2-Dichlorobenzene	58.8%	61.2%
d5-Phenol	66.9%	68.3%
2-Fluorophenol	64.8%	68.8%
2,4,6-Tribromophenol	59.5%	59.5%
d4-2-Chlorophenol	63.2%	66.4%

Results reported in µg/kg  
RPD calculated using sample concentrations per SW846.



SW8082/PCB SOIL/SEDIMENTS SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: HZ67-Geomatrix Consultants  
Project:

Client ID	DCBP	TCMX	TOI	OUT
MB-050305	63.2%	58.8%	0	
LCS-050305	69.8%	75.0%	0	
LCSD-050305	63.5%	78.0%	0	
OF-SED-02	50.5%	79.2%	0	
OF-SED-01	65.0%	82.2%	0	
OF-SED-03	62.0%	72.8%	0	
OF-SED-05	69.8%	80.2%	0	
OF-SED-04	59.8%	65.8%	0	

LCS/MB LIMITS      QC LIMITS

(DCBP) = Decachlorobiphenyl      (49-140)      (30-164)  
(TCMX) = Tetrachlorometaxylene      (30-135)      (26-143)

Prep Method: SW3550B  
Log Number Range: 05-7309 to 05-7313

ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082  
Page 1 of 1

Sample ID: MB-050305  
METHOD BLANK

Lab Sample ID: MB-050305  
LIMS ID: 05-7309  
Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 05/10/05

QC Report No: HZ67-Geomatrix Consultants  
Project:

Date Sampled: NA  
Date Received: NA

Date Extracted: 05/03/05  
Date Analyzed: 05/06/05 03:02  
Instrument/Analyst: ECD4/Yev  
GPC Cleanup: No  
Sulfur Cleanup: Yes  
Acid Cleanup: Yes

Sample Amount: 25.0 g  
Final Extract Volume: 1.0 mL  
Dilution Factor: 1.00  
Silica Gel: No  
pH: NA  
Percent Moisture: NA

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	4.0	< 4.0 U
53469-21-9	Aroclor 1242	4.0	< 4.0 U
12672-29-6	Aroclor 1248	4.0	< 4.0 U
11097-69-1	Aroclor 1254	4.0	< 4.0 U
11096-82-5	Aroclor 1260	4.0	< 4.0 U
11104-28-2	Aroclor 1221	4.0	< 4.0 U
11141-16-5	Aroclor 1232	4.0	< 4.0 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	63.2%
Tetrachlorometaxylene	58.8%



ORGANICS ANALYSIS DATA SHEET  
 PCB by GC/ECD Method SW8082  
 Page 1 of 1

Sample ID: OF-SED-02  
 SAMPLE

Lab Sample ID: HZ67A  
 LIMS ID: 05-7309  
 Matrix: Sediment  
 Data Release Authorized:  
 Reported: 05/10/05

QC Report No: HZ67-Geomatrix Consultants  
 Project:  
 Date Sampled: 04/27/05  
 Date Received: 04/27/05

Date Extracted: 05/03/05  
 Date Analyzed: 05/06/05 04:13  
 Instrument/Analyst: ECD4/Yev  
 GPC Cleanup: No  
 Sulfur Cleanup: Yes  
 Acid Cleanup: Yes

Sample Amount: 25.2 g-dry-wt  
 Final Extract Volume: 1.0 mL  
 Dilution Factor: 1.00  
 Silica Gel: No  
 pH: 7.1  
 Percent Moisture: 49.8%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	4.0	< 4.0 U
53469-21-9	Aroclor 1242	4.0	< 4.0 U
12672-29-6	Aroclor 1248	4.0	< 4.0 U
11097-69-1	Aroclor 1254	4.0	13
11096-82-5	Aroclor 1260	10	< 10 Y
11104-28-2	Aroclor 1221	4.0	< 4.0 U
11141-16-5	Aroclor 1232	4.0	< 4.0 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	50.5%
Tetrachlorometaxylene	79.2%

ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082  
Page 1 of 1

Sample ID: OF-SED-01  
SAMPLE

Lab Sample ID: HZ67B  
LIMS ID: 05-7310  
Matrix: Sediment  
Data Release Authorized:  
Reported: 05/10/05

QC Report No: HZ67-Geomatrix Consultants  
Project:  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/03/05  
Date Analyzed: 05/06/05 04:37  
Instrument/Analyst: ECD4/Yev  
GPC Cleanup: No  
Sulfur Cleanup: Yes  
Acid Cleanup: Yes

Sample Amount: 25.4 g-dry-wt  
Final Extract Volume: 1.0 mL  
Dilution Factor: 1.00  
Silica Gel: No  
pH: 7.1  
Percent Moisture: 55.9%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	3.9	< 3.9 U
53469-21-9	Aroclor 1242	3.9	< 3.9 U
12672-29-6	Aroclor 1248	3.9	< 3.9 U
11097-69-1	Aroclor 1254	9.4	< 9.4 Y
11096-82-5	Aroclor 1260	3.9	< 3.9 U
11104-28-2	Aroclor 1221	3.9	< 3.9 U
11141-16-5	Aroclor 1232	3.9	< 3.9 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	65.0%
Tetrachlorometaxylene	82.2%



Sample ID: OF-SED-03  
SAMPLE

Lab Sample ID: HZ67C  
LIMS ID: 05-7311  
Matrix: Sediment  
Data Release Authorized:  
Reported: 05/10/05

QC Report No: HZ67-Geomatrix Consultants  
Project:  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/03/05  
Date Analyzed: 05/06/05 05:01  
Instrument/Analyst: ECD4/Yev  
GPC Cleanup: No  
Sulfur Cleanup: Yes  
Acid Cleanup: Yes

Sample Amount: 25.7 g-dry-wt  
Final Extract Volume: 1.0 mL  
Dilution Factor: 1.00  
Silica Gel: No  
pH: 7.0  
Percent Moisture: 41.9%

CAS Number	Analyte	RI	Result
12674-11-2	Aroclor 1016	3.9	< 3.9 U
53469-21-9	Aroclor 1242	3.9	< 3.9 U
12672-29-6	Aroclor 1248	3.9	< 3.9 U
11097-69-1	Aroclor 1254	3.9	< 3.9 U
11096-82-5	Aroclor 1260	3.9	< 3.9 U
11104-28-2	Aroclor 1221	3.9	< 3.9 U
11141-16-5	Aroclor 1232	3.9	< 3.9 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	62.0%
Tetrachlorometaxylene	72.8%



ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082  
Page 1 of 1

Sample ID: OF-SED-05  
SAMPLE

Lab Sample ID: HZ67D  
LIMS ID: 05-7312  
Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 05/10/05

QC Report No: HZ67-Geomatrix Consultants  
Project:  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/03/05  
Date Analyzed: 05/06/05 05:24  
Instrument/Analyst: ECD4/Yev  
GPC Cleanup: No  
Sulfur Cleanup: Yes  
Acid Cleanup: Yes

Sample Amount: 25.3 g-dry-wt  
Final Extract Volume: 1.0 mL  
Dilution Factor: 1.00  
Silica Gel: No  
pH: 7.3  
Percent Moisture: 41.8%

CAS Number	Analyte	RI	Result
12674-11-2	Aroclor 1016	4.0	< 4.0 U
53469-21-9	Aroclor 1242	4.0	< 4.0 U
12672-29-6	Aroclor 1248	4.0	< 4.0 U
11097-69-1	Aroclor 1254	4.0	< 4.0 U
11096-82-5	Aroclor 1260	4.0	< 4.0 U
11104-28-2	Aroclor 1221	4.0	< 4.0 U
11141-16-5	Aroclor 1232	4.0	< 4.0 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	69.8%
Tetrachlorometaxylene	80.2%

ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082  
Page 1 of 1

Sample ID: OF-SED-04  
SAMPLE



Lab Sample ID: HZ67E  
LIMS ID: 05-7313  
Matrix: Sediment  
Data Release Authorized:  
Reported: 05/10/05

QC Report No: HZ67-Geomatrix Consultants  
Project:

Date Sampled: 04/27/05  
Date Received: 04/27/05

Date Extracted: 05/03/05  
Date Analyzed: 05/06/05 05:48  
Instrument/Analyst: ECD4/Yev  
GPC Cleanup: No  
Sulfur Cleanup: Yes  
Acid Cleanup: Yes

Sample Amount: 25.6 g-dry-wt  
Final Extract Volume: 1.0 mL  
Dilution Factor: 1.00  
Silica Gel: No  
pH: 7.5  
Percent Moisture: 26.1%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	3.9	< 3.9 U
53469-21-9	Aroclor 1242	3.9	< 3.9 U
12672-29-6	Aroclor 1248	3.9	< 3.9 U
11097-69-1	Aroclor 1254	3.9	< 3.9 U
11096-82-5	Aroclor 1260	3.9	< 3.9 U
11104-28-2	Aroclor 1221	3.9	< 3.9 U
11141-16-5	Aroclor 1232	3.9	< 3.9 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	59.8%
Tetrachlorometaxylene	65.8%



ORGANICS ANALYSIS DATA SHEET  
 PCB by GC/ECD Method SW8082  
 Page 1 of 1

Sample ID: LCS-050305  
 LCS/LCSD

Lab Sample ID: LCS-050305  
 LIMS ID: 05-7309  
 Matrix: Sediment  
 Data Release Authorized: *AS*  
 Reported: 05/10/05

QC Report No: HZ67-Geomatrix Consultants  
 Project:

Date Sampled: NA  
 Date Received: NA

Date Extracted LCS/LCSD: 05/03/05

Sample Amount LCS: 25.0 g-dry-wt  
 LCSD: 25.0 g-dry-wt

Date Analyzed LCS: 05/06/05 03:26

Final Extract Volume LCS: 1.0 mL

LCSD: 05/06/05 03:49

LCSD: 1.0 mL

Instrument/Analyst LCS: ECD4/Yev

Dilution Factor LCS: 1.00

LCSD: ECD4/Yev

LCSD: 1.00

GPC Cleanup: No

Silica Gel: No

Sulfur Cleanup: Yes

pH: NA

Acid Cleanup: Yes

Percent Moisture: NA

Analyte	Spike		LCS		Spike		LCSD		RPD
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	LCSD		
Aroclor 1016	10.5	20.2	52.1%	12.9	20.2	64.0%	20.5%	20.5%	
Aroclor 1260	11.6	20.2	57.5%	14.0	20.2	69.4%	18.8%	18.8%	

PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	69.8%	63.5%
Tetrachlorometaxylene	75.0%	78.0%

Results reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.



TPHD SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: HZ67-Geomatrix Consultants  
Project:

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
050305MBS	86.7%	0
050305LCS	80.0%	0
050305LCSD	83.8%	0
OF-SED-02	92.2%	0
OF-SED-01	68.4%	0
OF-SED-03	82.2%	0
OF-SED-05	68.7%	0
OF-SED-04	79.3%	0

LCS/MB LIMITS      QC LIMITS

(OTER) = o-Terphenyl

(39-134)


(26-128)

Prep Method: SW3550B  
Log Number Range: 05-7309 to 05-7313

ORGANICS ANALYSIS DATA SHEET  
TOTAL DIESEL RANGE HYDROCARBONS  
NWTPHD by GC/FID  
Page 1 of 1  
Matrix: Sediment

QC Report No: HZ67-Geomatrix Consultants  
Project:

Date Received: 04/27/05

Data Release Authorized:   
Reported: 05/06/05

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-050305 05-7309	Method Blank HC ID: ---	05/03/05	05/04/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 5.0 U < 10 U 86.7%
HZ67A 05-7309	OF-SED-02 HC ID: DRO/RRO	05/03/05	05/04/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	17 63 92.2%
HZ67B 05-7310	OF-SED-01 HC ID: DRO/RRO	05/03/05	05/04/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	15 61 68.4%
HZ67C 05-7311	OF-SED-03 HC ID: ---	05/03/05	05/04/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 8.6 U < 17 U 82.2%
HZ67D 05-7312	OF-SED-05 HC ID: ---	05/03/05	05/04/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 8.6 U < 17 U 68.7%
HZ67E 05-7313	OF-SED-04 HC ID: DRO/MOTOR OIL	05/03/05	05/04/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	8.9 39 79.3%

Reported in mg/kg (ppm)

Diesel quantitation on total peaks in the range from C12 to C24.  
Motor Oil quantitation on total peaks in the range from C24 to C38.  
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.



ORGANICS ANALYSIS DATA SHEET  
 NWTPHD by GC/FID  
 Page 1 of 1

Sample ID: LCS-050305  
 LCS/LCSD

Lab Sample ID: LCS-050305  
 LIMS ID: 05-7309  
 Matrix: Sediment  
 Data Release Authorized:  
 Reported: 05/06/05

QC Report No: HZ67-Geomatrix Consultants  
 Project:

Date Sampled: 04/27/05  
 Date Received: 04/27/05

Date Extracted LCS/LCSD: 05/03/05

Sample Amount LCS: 10.0 g  
 LCSD: 10.0 g

Date Analyzed LCS: 05/04/05 14:20  
 LCSD: 05/04/05 14:35

Final Extract Volume LCS: 1.0 mL  
 LCSD: 1.0 mL

Instrument/Analyst LCS: FID/JRains  
 LCSD: FID/JRains

Dilution Factor LCS: 1.00  
 LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	116	150	77.3%	121	150	80.7%	4.2%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	80.0%	83.8%

Results reported in mg/kg  
 RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Sediment  
Date Received: 04/27/05

ARI Job: HZ67  
Project:

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
05-7309-050305MB1	Method Blank	10.0 g	1.00 mL	-	05/03/05
05-7309-050305LCS1	Lab Control	10.0 g	1.00 mL	-	05/03/05
05-7309-050305LCSD1	Lab Control Dup	10.0 g	1.00 mL	-	05/03/05
05-7309-HZ67A	OF-SED-02	5.02 g	1.00 mL	D	05/03/05
05-7310-HZ67B	OF-SED-01	4.43 g	1.00 mL	D	05/03/05
05-7311-HZ67C	OF-SED-03	5.83 g	1.00 mL	D	05/03/05
05-7312-HZ67D	OF-SED-05	5.84 g	1.00 mL	D	05/03/05
05-7313-HZ67E	OF-SED-04	7.42 g	1.00 mL	D	05/03/05

Basis: D=Dry Weight W=As Received  
Diesel Extraction Report

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS  
Page 1 of 1

Sample ID: OF-SED-02  
SAMPLE

Lab Sample ID: HZ67A  
LIMS ID: 05-7309  
Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 05/05/05

QC Report No: HZ67-Geomatrix Consultants  
Project:

Date Sampled: 04/27/05  
Date Received: 04/27/05

Percent Total Solids: 48.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/02/05	6010B	05/04/05	7440-38-2	Arsenic	10	20	
3050B	05/02/05	6010B	05/04/05	7440-43-9	Cadmium	0.4	0.4	U
3050B	05/02/05	6010B	05/04/05	7440-47-3	Chromium	1	50	
3050B	05/02/05	6010B	05/04/05	7440-50-8	Copper	0.4	58.1	
3050B	05/02/05	6010B	05/04/05	7439-92-1	Lead	4	14	
3050B	05/02/05	6010B	05/04/05	7440-66-6	Zinc	1	90	

U-Analyte undetected at given RL  
RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: OF-SED-01  
SAMPLE

Lab Sample ID: HZ67B

LIMS ID: 05-7310

Matrix: Sediment

Data Release Authorized: *[Signature]*

Reported: 05/05/05

QC Report No: HZ67-Geomatrix Consultants

Project:

Date Sampled: 04/27/05

Date Received: 04/27/05

Percent Total Solids: 44.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/02/05	6010B	05/04/05	7440-38-2	Arsenic	10	30	
3050B	05/02/05	6010B	05/04/05	7440-43-9	Cadmium	0.4	0.4	U
3050B	05/02/05	6010B	05/04/05	7440-47-3	Chromium	1	55	
3050B	05/02/05	6010B	05/04/05	7440-50-8	Copper	0.4	76.7	
3050B	05/02/05	6010B	05/04/05	7439-92-1	Lead	4	18	
3050B	05/02/05	6010B	05/04/05	7440-66-6	Zinc	1	95	

U-Analyte undetected at given RL

RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS  
Page 1 of 1

Sample ID: OF-SED-03  
SAMPLE

Lab Sample ID: HZ67C  
LIMS ID: 05-7311  
Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 05/05/05

QC Report No: HZ67-Geomatrix Consultants  
Project:

Date Sampled: 04/27/05  
Date Received: 04/27/05

Percent Total Solids: 58.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/02/05	6010B	05/04/05	7440-38-2	Arsenic	8	15	
3050B	05/02/05	6010B	05/04/05	7440-43-9	Cadmium	0.3	0.3	U
3050B	05/02/05	6010B	05/04/05	7440-47-3	Chromium	0.8	43.2	
3050B	05/02/05	6010B	05/04/05	7440-50-8	Copper	0.3	45.5	
3050B	05/02/05	6010B	05/04/05	7439-92-1	Lead	3	11	
3050B	05/02/05	6010B	05/04/05	7440-66-6	Zinc	0.9	71.6	

U-Analyte undetected at given RL  
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS  
Page 1 of 1

Sample ID: OF-SED-05  
SAMPLE

Lab Sample ID: HZ67D  
LIMS ID: 05-7312  
Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 05/05/05

QC Report No: HZ67-Geomatrix Consultants  
Project:

Date Sampled: 04/27/05  
Date Received: 04/27/05

Percent Total Solids: 58.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/02/05	6010B	05/04/05	7440-38-2	Arsenic	8	22	
3050B	05/02/05	6010B	05/04/05	7440-43-9	Cadmium	0.3	0.3	U
3050B	05/02/05	6010B	05/04/05	7440-47-3	Chromium	0.8	43.4	
3050B	05/02/05	6010B	05/04/05	7440-50-8	Copper	0.3	51.1	
3050B	05/02/05	6010B	05/04/05	7439-92-1	Lead	3	13	
3050B	05/02/05	6010B	05/04/05	7440-66-6	Zinc	1	73	

U-Analyte undetected at given RL  
RL-Reporting Limit





INORGANICS ANALYSIS DATA SHEET

TOTAL METALS  
Page 1 of 1

Sample ID: OF-SED-04  
SAMPLE

Lab Sample ID: HZ67E  
LIMS ID: 05-7313  
Matrix: Sediment  
Data Release Authorized *[Signature]*  
Reported: 05/05/05

QC Report No: HZ67-Geomatrix Consultants  
Project:

Date Sampled: 04/27/05  
Date Received: 04/27/05

Percent Total Solids: 74.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/02/05	6010B	05/04/05	7440-38-2	Arsenic	6	14	
3050B	05/02/05	6010B	05/04/05	7440-43-9	Cadmium	0.2	0.2	U
3050B	05/02/05	6010B	05/04/05	7440-47-3	Chromium	0.6	30.5	
3050B	05/02/05	6010B	05/04/05	7440-50-8	Copper	0.2	32.7	
3050B	05/02/05	6010B	05/04/05	7439-92-1	Lead	2	36	
3050B	05/02/05	6010B	05/04/05	7440-66-6	Zinc	0.7	57.6	

U-Analyte undetected at given RL  
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: HZ67MB

LIMS ID: 05-7309

Matrix: Sediment

Data Release Authorized 

Reported: 05/05/05

QC Report No: HZ67-Geomatrix Consultants

Project:

Date Sampled: NA

Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/02/05	6010B	05/04/05	7440-38-2	Arsenic	5	5	U
3050B	05/02/05	6010B	05/04/05	7440-43-9	Cadmium	0.2	0.2	U
3050B	05/02/05	6010B	05/04/05	7440-47-3	Chromium	0.5	0.5	U
3050B	05/02/05	6010B	05/04/05	7440-50-8	Copper	0.2	0.2	U
3050B	05/02/05	6010B	05/04/05	7439-92-1	Lead	2	2	U
3050B	05/02/05	6010B	05/04/05	7440-66-6	Zinc	0.6	0.6	U

U-Analyte undetected at given RL

RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET  
TOTAL METALS  
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: HZ67LCS  
LIMS ID: 05-7309  
Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 05/05/05

QC Report No: HZ67-Geomatrix Consultants  
Project:  
Date Sampled: NA  
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010B	215	200	108%	
Cadmium	6010B	52.9	50.0	106%	
Chromium	6010B	49.6	50.0	99.2%	
Copper	6010B	51.6	50.0	103%	
Lead	6010B	207	200	104%	
Zinc	6010B	49.3	50.0	98.6%	

Reported in mg/kg-dry

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

SAMPLE RESULTS-CONVENTIONALS  
HZ67-Geomatrix Consultants



Matrix: Sediment  
Data Release Authorized: *OR*  
Reported: 05/16/05

Project: NA  
Event: NA  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Client ID: OF-SED-02  
ARI ID: 05-7309 HZ67A

Analyte	Date	Method	Units	RL	Sample
Total Solids	04/28/05 042805#1	EPA 160.3	Percent	0.01	49.80
Total Organic Carbon	05/02/05 050205#1	Plumb, 1981	Percent	0.020	3.68

RL Analytical reporting limit  
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS  
HZ67-Geomatrix Consultants



Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 05/16/05

Project: NA  
Event: NA  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Client ID: OF-SED-01  
ARI ID: 05-7310 HZ67B

Analyte	Date	Method	Units	RL	Sample
Total Solids	04/28/05 042805#1	EPA 160.3	Percent	0.01	42.70
Total Organic Carbon	04/29/05 042905#1	Plumb, 1981	Percent	0.020	4.56

RL Analytical reporting limit  
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS  
HZ67-Geomatrix Consultants



Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 05/16/05

Project: NA  
Event: NA  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Client ID: OF-SED-03  
ARI ID: 05-7311 HZ67C

Analyte	Date	Method	Units	RL	Sample
Total Solids	04/28/05 042805#1	EPA 160.3	Percent	0.01	56.20
Total Organic Carbon	04/29/05 042905#1	Plumb,1981	Percent	0.020	1.69

RL Analytical reporting limit  
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS  
HZ67-Geomatrix Consultants



Matrix: Sediment  
Data Release Authorized *DR*  
Reported: 05/16/05

Project: NA  
Event: NA  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Client ID: OF-SED-05  
ARI ID: 05-7312 HZ67D

Analyte	Date	Method	Units	RL	Sample
Total Solids	04/28/05 042805#1	EPA 160.3	Percent	0.01	58.10
Total Organic Carbon	05/12/05 051205#1	Plumb, 1981	Percent	0.020	1.05

RL Analytical reporting limit  
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS  
HZ67-Geomatrix Consultants



Matrix: Sediment  
Data Release Authorized: *[Signature]*  
Reported: 05/16/05

Project: NA  
Event: NA  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Client ID: OF-SED-04  
ARI ID: 05-7313 HZ67E

Analyte	Date	Method	Units	RL	Sample
Total Solids	04/28/05 042805#1	EPA 160.3	Percent	0.01	72.80
Total Organic Carbon	05/12/05 051205#1	Plumb, 1981	Percent	0.020	0.585

RL Analytical reporting limit  
U Undetected at reported detection limit



METHOD BLANK RESULTS-CONVENTIONALS  
HZ67-Geomatrix Consultants



Matrix: Sediment  
Data Release Authorized: *DL*  
Reported: 05/16/05

Project: NA  
Event: NA  
Date Sampled: NA  
Date Received: NA

Analyte	Date	Units	Blank
Total Solids	04/28/05	Percent	< 0.01 U
	04/28/05		< 0.01 U
Total Organic Carbon	04/29/05	Percent	< 0.020 U
	05/02/05		< 0.020 U
	05/12/05		< 0.020 U

LAB CONTROL RESULTS-CONVENTIONALS  
HZ67-Geomatrix Consultants



Matrix: Sediment  
Data Release Authorized: *BL*  
Reported: 05/16/05

Project: NA  
Event: NA  
Date Sampled: NA  
Date Received: NA

Analyte	Date	Units	LCS	Spike Added	Recovery
Total Organic Carbon	04/29/05	Percent	0.530	0.500	106.0%
	05/02/05		0.548	0.500	109.6%
	05/12/05		0.483	0.500	96.6%

STANDARD REFERENCE RESULTS-CONVENTIONALS  
HZ67-Geomatrix Consultants



Matrix: Sediment  
Data Release Authorized *gjl*  
Reported: 05/16/05

Project: NA  
Event: NA  
Date Sampled: NA  
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon	04/29/05	Percent	3.37	3.35	100.6%
NIST #8704	05/02/05		3.08	3.35	91.9%
	05/12/05		3.05	3.35	91.0%

REPLICATE RESULTS-CONVENTIONALS  
HZ67-Geomatrix Consultants



Matrix: Sediment  
Data Release Authorized *gr*  
Reported: 05/16/05

Project: NA  
Event: NA  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: HZ67A Client ID: OF-SED-02					
Total Solids	04/28/05	Percent	49.80	48.40 49.80	1.6%
Total Organic Carbon	05/02/05	Percent	3.68	3.03 3.34	9.7%

MS/MSD RESULTS-CONVENTIONALS  
HZ67-Geomatrix Consultants



Matrix: Sediment  
Data Release Authorized *JK*  
Reported: 05/16/05

Project: NA  
Event: NA  
Date Sampled: 04/27/05  
Date Received: 04/27/05

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: HZ67A Client ID: OF-SED-02						
Total Organic Carbon	05/02/05	Percent	3.68	8.14	4.58	97.4%





Pace Analytical Services, Inc.  
1700 Elm Street  
Minneapolis, MN 55414  
Phone: 612.607.1700  
Fax: 612.607.6444

## DETERMINATION OF PCDD/PCDF LEVELS

Prepared for:

Analytical Resources, Inc.  
Attn: Mary Lou Fox Stephanie Lucas  
4611 South 134<sup>th</sup> Place, Suite 100  
Tukwila, WA 98168



This report contains 19 pages.

The results reported herein conform to the most current NELAC standards, where applicable; unless otherwise narrated in the body of the report.

Client Project Number: HZ67

Client Purchase Order Number: NA

## REPORT OF LABORATORY ANALYSIS

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**REPORT OF: CHEMICAL ANALYSES**

Pace Analytical Services, Inc.  
1700 Elm Street  
Minneapolis, MN 55414  
Phone: 612.607.1700  
Fax: 612.607.6444

**PROJECT: PCDD/PCDF ANALYSES**

**DATE: May 19, 2005**

**ISSUED TO:** Analytical Resources, Inc.  
Attn: Mary Lou Fox  
4611 South 134<sup>th</sup> Place  
Tukwila, WA 98168

**REPORT NO: 05-1012437**

**INTRODUCTION**

This report presents the results from the analyses performed on five samples submitted by a representative of Analytical Resources, Inc. The samples were analyzed for the presence or absence of polychlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs) using a modified version of USEPA Method 8290.

**SAMPLE IDENTIFICATION**

<u>Client ID</u>	<u>Sample Type</u>	<u>Date Received</u>	<u>Pace ID</u>
05-7309-HZ67A OF-SED-02	Sediment	04/29/05	1012437001
05-7310-HZ67B OF-SED-01	Sediment	04/29/05	1012437002
05-7311-HZ67C OF-SED-03	Sediment	04/29/05	1012437003
05-7312-HZ67D OF-SED-05	Sediment	04/29/05	1012437004
05-7313-HZ67E OF-SED-04	Sediment	04/29/05	1012437005

**RESULTS**

The results are included in the following:

- Appendix A – Chain of Custody Documentation
- Appendix B – PCDD/PCDF Results

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REPORT OF: CHEMICAL ANALYSES

PROJECT: PCDD/PCDF ANALYSES

DATE: May 19, 2005

PAGE: 2

REPORT NO: 05-1012437

DISCUSSION

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts generally ranged from 48-117%. Elevated recovery values were obtained for several internal standards in sample OF-SED-02, due to the presence of a suppressive interference that impacted the labeled HxCDD recovery standard; values above 135% were flagged "P" on the results table. All of the remaining labeled standard recoveries obtained for the samples were within the 40-135% target range for this method. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

In some cases, the presence of interfering substances impacted the determinations of selected congeners. The affected values were flagged "E" where polychlorinated diphenyl ethers were present, or "I" where incorrect isotope ratios were obtained.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results, found at the beginning of Appendix B, show the blank to be free of PCDDs and PCDFs, with the exception of a trace level Total HxCDD. This was below the calibration range for this method. The Total HxCDD levels reported for the field samples were higher than the corresponding blank level by one or more orders of magnitude. These results indicate that the sample processing procedures did not significantly impact the results of the field sample analyses.

Laboratory and matrix spike samples were also prepared with the sample batch using clean sand or sample material that had been fortified with native standard materials. The results show that the spiked native compounds in the laboratory spike sample were recovered at 110-144%. Five of the native congeners in the lab spike were recovered above the 70-130% target range; the affected values were flagged "P" on the results table. Somewhat variable recovery values were obtained for the spiked native congeners in the matrix spike samples, due to high levels of these compounds in the sample material. Relative percent differences for the matrix spike samples ranged from 1.0-42.8%.

It should be noted that several labeled standard recoveries in the laboratory blank and spike samples were below the 40-135% target range. The affected values were flagged "P" on the results tables.

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REPORT OF: CHEMICAL ANALYSES

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Minneapolis, MN 55414  
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Fax: 612.607.6444

PROJECT: PCDD/PCDF ANALYSES

DATE: May 19, 2005

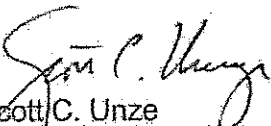
PAGE: 3

REPORT NO: 05-1012437

**REMARKS**

The sample extracts will be retained for a period of 15 days from the date of this report and then discarded unless other arrangements are made. The raw mass spectral data will be archived for a period of not less than one year. Questions regarding the data contained in this report may be directed to the author at the number provided below.

Pace Analytical Services, Inc.

  
Scott C. Unze  
Project Manager, HRMS  
(612) 607-6383

**REPORT OF LABORATORY ANALYSIS**

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**TABLE 1. 2,3,7,8-TCDD Equivalency Factors (TEFs) for the Polychlorinated Dibenzo-p-dioxins and Dibenzofurans**

Number	Compound(s)	TEF
1	2,3,7,8-TCDD	1.00
2	1,2,3,7,8-PeCDD	0.50
3	1,2,3,6,7,8-HxCDD	0.1
4	1,2,3,7,8,9-HxCDD	0.1
5	1,2,3,4,7,8-HxCDD	0.1
6	1,2,3,4,6,7,8-HpCDD	0.01
7	OCDD	0.001
8	* Total - TCDD	0.0
9	* Total - PeCDD	0.0
10	* Total - HxCDD	0.0
11	* Total - HpCDD	0.0
12	2,3,7,8-TCDF	0.10
13	1,2,3,7,8-PeCDF	0.05
14	2,3,4,7,8-PeCDF	0.5
15	1,2,3,6,7,8-HxCDF	0.1
16	1,2,3,7,8,9-HxCDF	0.1
17	1,2,3,4,7,8-HxCDF	0.1
18	2,3,4,6,7,8-HxCDF	0.1
19	1,2,3,4,6,7,8-HpCDF	0.01
20	1,2,3,4,7,8,9-HpCDF	0.01
21	OCDF	0.001
22	* Total - TCDF	0.0
23	* Total - PeCDF	0.0
24	* Total - HxCDF	0.0
25	* Total - HpCDF	0.0

\*Excluding the 2,3,7,8-substituted congeners.

Reference: 1989 ITEFs

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## Appendix A

### **REPORT OF LABORATORY ANALYSIS**

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SUBCONTRACTOR ANALYSIS REQUEST  
 CUSTODY TRANSFER 04\28\05



ARI Project: HZ67

1012437

Laboratory: Pace Analytical, Inc.  
 Lab Contact: Scott Unze  
 Lab Address: 1700 Elm St.  
 Minneapolis, MN 55414  
 Phone: 612-607-1700  
 Fax:

ARI Client: Geomatrix Consultants  
 Project ID:  
 ARI PMgr: Stephanie Lucas  
 Phone: (206) 340-2866 Ext 213  
 Fax: (206) 695-6201

Analytical Protocol: PSDDA  
 Special Instructions:

Requested Turn Around: 05/12/05  
 Fax Results (Y/N): Yes

Limits of Liability. Subcontractor is expected to perform all requested services in accordance with appropriate methodology following Standard Operating Procedures that meet 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 negotiated amount for said services. The agreement by the Subcontractor to perform services requested by ARI releases 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 Subcontractor.

ARI Sample ID	Client Sample ID/ Add'l Sample ID	Sampled	Matrix	Bottles	Analyses
05-7309-HZ67A	OF-SED-02	4/27/05	Sediment	1	Dioxin (Low Res) 1012437001
Special Instructions: NONE					
05-7310-HZ67B	OF-SED-01	4/27/05	Sediment	1	Dioxin (Low Res) 002
Special Instructions: NONE					
05-7311-HZ67C	OF-SED-03	4/27/05	Sediment	1	Dioxin (Low Res) 003
Special Instructions: NONE					
05-7312-HZ67D	OF-SED-05	4/27/05	Sediment	1	Dioxin (Low Res) 004
Special Instructions: NONE					
05-7313-HZ67E	OF-SED-04	4/27/05	Sediment	1	Dioxin (Low Res) 005
Special Instructions: NONE					

Carrier	DHL	Airbill	26063429354	Date	4/28/05
Relinquished by	<i>[Signature]</i>	Company	PAI	Date	4/28/05
Received by	<i>[Signature]</i>	Company	PAI	Date	4/29/05
				Time	1500
				Time	1010

SUBCONTRACTOR ANALYSIS REQUEST  
CUSTODY TRANSFER 04\28\05



ARI Project: HZ67

Laboratory: Pace Analytical, Inc.  
Lab Contact: ~~Scott Hase~~ Michelle Kruse  
Lab Address: 1700 Elm St.  
Minneapolis, MN 55414  
Phone: 612-607-1700  
Fax: 612-607-6444

ARI Client: Geomatrix Consultants  
Project ID:  
ARI PMgr: Stephanie Lucas  
Phone: (206) 340-2886 Ext 213  
Fax: (206) 695-6201  
(206) 495-6215 - Direct

Analytical Protocol: PSDDA  
Special Instructions:

Requested Turn Around: 05/12/05  
Fax Results (Y/N): Yes

Revised  
4-29-05

Limits of Liability. Subcontractor is expected to perform all requested services in accordance with appropriate methodology following Standard Operating Procedures that meet 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 negotiated amount for said services. The agreement by the Subcontractor to perform services requested by ARI releases 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 Subcontractor.

ARI Sample ID	Client Sample ID/ Add'l Sample ID	Sampled	Matrix	Bottles	Analyses
05-7309-HZ67A	OF-SED-02	4/27/05	Sediment	1	Dioxin ( <del>Low Res</del> )
Special Instructions: NONE					
05-7310-HZ67B	OF-SED-01	4/27/05	Sediment	1	Dioxin ( <del>Low Res</del> )
Special Instructions: NONE					
05-7311-HZ67C	OF-SED-03	4/27/05	Sediment	1	Dioxin ( <del>Low Res</del> )
Special Instructions: NONE					
05-7312-HZ67D	OF-SED-05	4/27/05	Sediment	1	Dioxin ( <del>Low Res</del> )
Special Instructions: NONE					
05-7313-HZ67E	OF-SED-04	4/27/05	Sediment	1	Dioxin ( <del>Low Res</del> )
Special Instructions: NONE					

Ⓢ Full scan Dioxin  
PCDD/PCDF Ⓢ  
8290

Stephanie Lucas - ARI 4-29-05

Carrier		Airbill		Date	
Relinquished by	Company	Date	Time		
Received by	Company	Date	Time		



*Pace Analytical Services, Inc.*  
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## Appendix B

### **REPORT OF LABORATORY ANALYSIS**

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**Method 8290 Blank Analysis Results**

Client - Analytical Resources Inc.

Lab Sample ID	BLANK-6952	Matrix	Solid
Filename	F50508B_03	Dilution	NA
Total Amount Extracted	20.2 g	Extracted	05/05/2005
ICAL Date	03/24/2005	Analyzed	05/08/2005 22:29
CCal Filename(s)	F50508A_16 & F50508B_16	Injected By	BAL

Native Isomers	Conc ng/Kg	EMPC ng/Kg	LRL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.120 A	2,3,7,8-TCDF-13C	2.00	23 P
Total TCDF	ND	----	0.099	2,3,7,8-TCDD-13C	2.00	23 P
				1,2,3,7,8-PeCDF-13C	2.00	39 P
2,3,7,8-TCDD	ND	----	0.150 A	2,3,4,7,8-PeCDF-13C	2.00	48
Total TCDD	ND	----	0.099	1,2,3,7,8-PeCDD-13C	2.00	48
				1,2,3,4,7,8-HxCDF-13C	2.00	64
1,2,3,7,8-PeCDF	ND	----	0.500	1,2,3,6,7,8-HxCDF-13C	2.00	59
2,3,4,7,8-PeCDF	ND	----	0.500	2,3,4,6,7,8-HxCDF-13C	2.00	64
Total PeCDF	ND	----	0.500	1,2,3,7,8,9-HxCDF-13C	2.00	66
				1,2,3,4,7,8-HxCDD-13C	2.00	65
1,2,3,7,8-PeCDD	ND	----	0.500	1,2,3,6,7,8-HxCDD-13C	2.00	55
Total PeCDD	ND	----	0.500	1,2,3,4,6,7,8-HpCDF-13C	2.00	48
				1,2,3,4,7,8,9-HpCDF-13C	2.00	47
1,2,3,4,7,8-HxCDF	ND	----	0.500	1,2,3,4,6,7,8-HpCDD-13C	2.00	50
1,2,3,6,7,8-HxCDF	ND	----	0.500	OCDD-13C	4.00	41
2,3,4,6,7,8-HxCDF	ND	----	0.500			
1,2,3,7,8,9-HxCDF	ND	----	0.500	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	0.500	1,2,3,7,8,9-HxCDD-13C	2.00	NA
				2,3,7,8-TCDD-37Cl4	0.20	25
1,2,3,4,7,8-HxCDD	ND	----	0.500			
1,2,3,6,7,8-HxCDD	ND	----	0.500			
1,2,3,7,8,9-HxCDD	ND	----	0.500			
Total HxCDD	0.50	----	0.500 J			
				Total 2,3,7,8-TCDD		
1,2,3,4,6,7,8-HpCDF	ND	----	0.500	Equivalence: 0.00 ng/Kg		
1,2,3,4,7,8,9-HpCDF	ND	----	0.500	(Using ITE Factors)		
Total HpCDF	ND	----	0.500			
1,2,3,4,6,7,8-HpCDD	ND	----	0.500			
Total HpCDD	ND	----	0.500			
OCDF	ND	----	0.990			
OCDD	ND	----	0.990			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).  
EMPC = Estimated Maximum Possible Concentration  
LRL = Lower Reporting Limit  
J = Concentration detected is below the calibration range  
P = Recovery outside of target range  
A = Detection Limit based on signal-to-noise measurement

I = Interference  
E = PCDE Interference  
ND = Not Detected  
NA = Not Applicable  
NC = Not Calculated  
\* = See Discussion

Report No.....1012437

**REPORT OF LABORATORY ANALYSIS**

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### Method 8290 Analysis Results

Client - Analytical Resources Inc.

Client's Sample ID	05-7310-HZ67B OF-SED-01		
Lab Sample ID	1012437002		
Filename	U50513A_13		
Injected By	SMT		
Total Amount Extracted	23.1 g	Matrix	Sediment
% Moisture	56.8	Dilution	NA
Dry Weight Extracted	10.0 g	Collected	04/27/2005
ICAL Date	01/26/2005	Received	04/29/2005
CCal Filename(s)	U50512B_16 & U50513A_16	Extracted	05/05/2005
Method Blank ID	BLANK-6952	Analyzed	05/13/2005 23:58

Native Isomers	Conc ng/Kg	EMPC ng/Kg	LRL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	---	1.5	0.20	E	2,3,7,8-TCDF-13C	2.00	73
Total TCDF	9.70	---	0.20		2,3,7,8-TCDD-13C	2.00	78
					1,2,3,7,8-PeCDF-13C	2.00	64
2,3,7,8-TCDD	0.35	---	0.33	JA	2,3,4,7,8-PeCDF-13C	2.00	69
Total TCDD	25.00	---	0.20		1,2,3,7,8-PeCDD-13C	2.00	81
					1,2,3,4,7,8-HxCDF-13C	2.00	117
1,2,3,7,8-PeCDF	ND	---	1.00		1,2,3,6,7,8-HxCDF-13C	2.00	91
2,3,4,7,8-PeCDF	1.30	---	1.00	J	2,3,4,6,7,8-HxCDF-13C	2.00	96
Total PeCDF	5.50	---	1.00		1,2,3,7,8,9-HxCDF-13C	2.00	94
					1,2,3,4,7,8-HxCDD-13C	2.00	106
1,2,3,7,8-PeCDD	1.20	---	1.00	J	1,2,3,6,7,8-HxCDD-13C	2.00	80
Total PeCDD	19.00	---	1.00		1,2,3,4,6,7,8-HpCDF-13C	2.00	90
					1,2,3,4,7,8,9-HpCDF-13C	2.00	80
1,2,3,4,7,8-HxCDF	ND	---	1.00		1,2,3,4,6,7,8-HpCDD-13C	2.00	87
1,2,3,6,7,8-HxCDF	ND	---	1.00		OCDD-13C	4.00	70
2,3,4,6,7,8-HxCDF	ND	---	1.00				
1,2,3,7,8,9-HxCDF	---	1.2	1.00	I	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	24.00	---	1.00		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	2.40	---	1.00	J	2,3,7,8-TCDD-37Cl4	0.20	77
1,2,3,6,7,8-HxCDD	5.40	---	1.00				
1,2,3,7,8,9-HxCDD	2.50	---	1.00	J			
Total HxCDD	76.00	---	1.00				
1,2,3,4,6,7,8-HpCDF	---	23.0	1.00	I	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	---	1.3	1.00	E	Equivalence: 4.6 ng/Kg		
Total HpCDF	50.00	---	1.00		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	110.00	---	1.00				
Total HpCDD	330.00	---	1.00				
OCDF	62.00	---	2.00				
OCDD	860.00	---	2.00				

Results reported on a dry weight basis  
 Conc = Concentration (Totals include 2,3,7,8-substituted isomers)  
 EMPC = Estimated Maximum Possible Concentration  
 A = Detection Limit based on signal-to-noise measurement  
 J = Concentration detected is below the calibration range  
 B = Less than 10 times higher than method blank level  
 P = Recovery outside of target range  
 Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit  
 I = Interference  
 E = PCDE Interference  
 S = Saturated signal  
 ND = Not Detected  
 NA = Not Applicable  
 NC = Not Calculated  
 \* = See Discussion

Report No.....1012437

## REPORT OF LABORATORY ANALYSIS

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**Method 8290 Analysis Results**

Client - Analytical Resources Inc.

Client's Sample ID	05-7309-HZ67A OF-SED-02		
Lab Sample ID	1012437001		
Filename	U50513A_12		
Injected By	SMT		
Total Amount Extracted	21.3 g	Matrix	Sediment
% Moisture	52.8	Dilution	NA
Dry Weight Extracted	10.0 g	Collected	04/27/2005
ICAL Date	01/26/2005	Received	04/29/2005
CCal Filename(s)	U50512B_16 & U50513A_16	Extracted	05/05/2005
Method Blank ID	BLANK-6952	Analyzed	05/13/2005 23:07

Native Isomers	Conc ng/Kg	EMPC ng/Kg	LRL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	---	3.0	0.67	EA	2,3,7,8-TCDF-13C	2.00	80
Total TCDF	22.00	---	0.20		2,3,7,8-TCDD-13C	2.00	93
					1,2,3,7,8-PeCDF-13C	2.00	87
2,3,7,8-TCDD	0.46	---	0.34	JA	2,3,4,7,8-PeCDF-13C	2.00	92
Total TCDD	31.00	---	0.20		1,2,3,7,8-PeCDD-13C	2.00	108
					1,2,3,4,7,8-HxCDF-13C	2.00	204 P
1,2,3,7,8-PeCDF	ND	---	1.00		1,2,3,6,7,8-HxCDF-13C	2.00	150 P
2,3,4,7,8-PeCDF	3.30	---	1.00	J	2,3,4,6,7,8-HxCDF-13C	2.00	153 P
Total PeCDF	12.00	---	1.00		1,2,3,7,8,9-HxCDF-13C	2.00	169 P
					1,2,3,4,7,8-HxCDD-13C	2.00	176 P
1,2,3,7,8-PeCDD	1.80	---	1.00	J	1,2,3,6,7,8-HxCDD-13C	2.00	139 P
Total PeCDD	26.00	---	1.00		1,2,3,4,6,7,8-HpCDF-13C	2.00	160 P
					1,2,3,4,7,8,9-HpCDF-13C	2.00	157 P
1,2,3,4,7,8-HxCDF	1.80	---	1.00	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	169 P
1,2,3,6,7,8-HxCDF	---	1.9	1.00	E	OCDD-13C	4.00	132
2,3,4,6,7,8-HxCDF	2.10	---	1.00	J			
1,2,3,7,8,9-HxCDF	1.70	---	1.00	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	29.00	---	1.00		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	2.20	---	1.00	J	2,3,7,8-TCDD-37Cl4	0.20	92
1,2,3,6,7,8-HxCDD	8.70	---	1.00				
1,2,3,7,8,9-HxCDD	1.50	---	1.00	J			
Total HxCDD	85.00	---	1.00				
1,2,3,4,6,7,8-HpCDF	26.00	---	1.00		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	---	1.5	1.00	E	Equivalence: 7.6 ng/Kg		
Total HpCDF	80.00	---	1.00		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	140.00	---	1.00				
Total HpCDD	320.00	---	1.00				
OCDF	61.00	---	2.00				
OCDD	1100.00	---	2.00				

Results reported on a dry weight basis  
 Conc = Concentration (Totals include 2,3,7,8-substituted isomers)  
 EMPC = Estimated Maximum Possible Concentration  
 A = Detection Limit based on signal-to-noise measurement  
 J = Concentration detected is below the calibration range  
 B = Less than 10 times higher than method blank level  
 P = Recovery outside of target range  
 Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit  
 I = Interference  
 E = PCDF Interference  
 S = Saturated signal  
 ND = Not Detected  
 NA = Not Applicable  
 NC = Not Calculated  
 \* = See Discussion

Report No.....1012437

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**Method 8290 Analysis Results**

Client - Analytical Resources Inc.

Client's Sample ID	05-7311-HZ67C OF-SED-03			
Lab Sample ID	1012437003			
Filename	U50513B_12			
Injected By	SMT			
Total Amount Extracted	18.9 g	Matrix	Sediment	
% Moisture	47.0	Dilution	NA	
Dry Weight Extracted	10.0 g	Collected	04/27/2005	
ICAL Date	01/26/2005	Received	04/29/2005	
CCal Filename(s)	U50513A_16 & U50513B_17	Extracted	05/05/2005	
Method Blank ID	BLANK-6952	Analyzed	05/14/2005 12:41	

Native Isomers	Conc ng/Kg	EMPC ng/Kg	LRL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	---	1.60	0.24	EA	2,3,7,8-TCDF-13C	2.00	85
Total TCDF	10.0	---	0.20		2,3,7,8-TCDD-13C	2.00	76
					1,2,3,7,8-PeCDF-13C	2.00	86
2,3,7,8-TCDD	---	0.38	0.28	IA	2,3,4,7,8-PeCDF-13C	2.00	93
Total TCDD	35.0	---	0.20		1,2,3,7,8-PeCDD-13C	2.00	92
					1,2,3,4,7,8-HxCDF-13C	2.00	115
1,2,3,7,8-PeCDF	---	1.10	1.00	I	1,2,3,6,7,8-HxCDF-13C	2.00	90
2,3,4,7,8-PeCDF	1.2	---	1.00	J	2,3,4,6,7,8-HxCDF-13C	2.00	96
Total PeCDF	6.2	---	1.00		1,2,3,7,8,9-HxCDF-13C	2.00	97
					1,2,3,4,7,8-HxCDD-13C	2.00	97
1,2,3,7,8-PeCDD	1.1	---	1.00	J	1,2,3,6,7,8-HxCDD-13C	2.00	68
Total PeCDD	22.0	---	1.00		1,2,3,4,6,7,8-HpCDF-13C	2.00	67
					1,2,3,4,7,8,9-HpCDF-13C	2.00	56
1,2,3,4,7,8-HxCDF	1.3	---	1.00	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	53
1,2,3,6,7,8-HxCDF	ND	---	1.00		OCDD-13C	4.00	50
2,3,4,6,7,8-HxCDF	ND	---	1.00				
1,2,3,7,8,9-HxCDF	ND	---	1.00		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	19.0	---	1.00		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.4	---	1.00	J	2,3,7,8-TCDD-37Cl4	0.20	78
1,2,3,6,7,8-HxCDD	3.6	---	1.00	J			
1,2,3,7,8,9-HxCDD	1.8	---	1.00	J			
Total HxCDD	41.0	---	1.00				
1,2,3,4,6,7,8-HpCDF	13.0	---	1.00		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	---	1.00		Equivalence: 3.1 ng/Kg		
Total HpCDF	39.0	---	1.00		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	53.0	---	1.00				
Total HpCDD	140.0	---	1.00				
OCDF	29.0	---	2.00				
OCDD	430.0	---	2.00				

Results reported on a dry weight basis  
 Conc = Concentration (Totals include 2,3,7,8-substituted isomers)  
 EMPC = Estimated Maximum Possible Concentration  
 A = Detection Limit based on signal-to-noise measurement  
 J = Concentration detected is below the calibration range  
 B = Less than 10 times higher than method blank level  
 P = Recovery outside of target range  
 Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit  
 I = Interference  
 E = PCDE Interference  
 S = Saturated signal  
 ND = Not Detected  
 NA = Not Applicable  
 NC = Not Calculated  
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**Method 8290 Analysis Results**

Client - Analytical Resources Inc.

Client's Sample ID	05-7313-HZ67E OF-SED-04		
Lab Sample ID	1012437005		
Filename	U50513A_14		
Injected By	SMT		
Total Amount Extracted	13.6 g	Matrix	Sediment
% Moisture	25.2	Dilution	NA
Dry Weight Extracted	10.1 g	Collected	04/27/2005
ICAL Date	01/26/2005	Received	04/29/2005
CCal Filename(s)	U50512B_16 & U50513A_16	Extracted	05/05/2005
Method Blank ID	BLANK-6952	Analyzed	05/14/2005 00:49

Native Isomers	Conc ng/Kg	EMPC ng/Kg	LRL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	---	0.79	0.20	E	2,3,7,8-TCDF-13C	2.00	73
Total TCDF	6.60	---	0.20		2,3,7,8-TCDD-13C	2.00	75
					1,2,3,7,8-PeCDF-13C	2.00	65
2,3,7,8-TCDD	0.31	---	0.20	J	2,3,4,7,8-PeCDF-13C	2.00	71
Total TCDD	5.90	---	0.20		1,2,3,7,8-PeCDD-13C	2.00	77
					1,2,3,4,7,8-HxCDF-13C	2.00	92
1,2,3,7,8-PeCDF	---	4.70	0.99	E	1,2,3,6,7,8-HxCDF-13C	2.00	79
2,3,4,7,8-PeCDF	2.50	---	0.99	J	2,3,4,6,7,8-HxCDF-13C	2.00	88
Total PeCDF	31.00	---	0.99		1,2,3,7,8,9-HxCDF-13C	2.00	84
					1,2,3,4,7,8-HxCDD-13C	2.00	93
1,2,3,7,8-PeCDD	---	1.70	0.99	I	1,2,3,6,7,8-HxCDD-13C	2.00	70
Total PeCDD	4.60	---	0.99	J	1,2,3,4,6,7,8-HpCDF-13C	2.00	77
					1,2,3,4,7,8,9-HpCDF-13C	2.00	68
1,2,3,4,7,8-HxCDF	4.90	---	0.99	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	75
1,2,3,6,7,8-HxCDF	4.10	---	0.99	J	OCDD-13C	4.00	68
2,3,4,6,7,8-HxCDF	3.60	---	0.99	J			
1,2,3,7,8,9-HxCDF	ND	---	0.99		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	150.00	---	0.99		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	4.90	---	0.99	J	2,3,7,8-TCDD-37Cl4	0.20	76
1,2,3,6,7,8-HxCDD	17.00	---	0.99				
1,2,3,7,8,9-HxCDD	9.10	---	0.99				
Total HxCDD	130.00	---	0.99				
1,2,3,4,6,7,8-HpCDF	200.00	---	0.99		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	6.50	---	0.99		Equivalence: 16 ng/Kg		
Total HpCDF	510.00	---	0.99		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	390.00	---	0.99				
Total HpCDD	940.00	---	0.99				
OCDF	400.00	---	2.00				
OCDD	3500.00	---	2.00				

Results reported on a dry weight basis  
 Conc = Concentration (Totals include 2,3,7,8-substituted isomers)  
 EMPC = Estimated Maximum Possible Concentration  
 A = Detection Limit based on signal-to-noise measurement  
 J = Concentration detected is below the calibration range  
 B = Less than 10 times higher than method blank level  
 P = Recovery outside of target range  
 Na = Value obtained from additional analysis

LRL = Lower Reporting Limit  
 I = Interference  
 E = PCDF Interference  
 S = Saturated signal  
 ND = Not Detected  
 NA = Not Applicable  
 NC = Not Calculated  
 \* = See Discussion

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**Method 8290 Analysis Results**

Client - Analytical Resources Inc.

Client's Sample ID	05-7312-HZ67D OF-SED-05		
Lab Sample ID	1012437004		
Filename	U50513B_13		
Injected By	SMT		
Total Amount Extracted	17.9 g	Matrix	Sediment
% Moisture	43.4	Dilution	NA
Dry Weight Extracted	10.1 g	Collected	04/27/2005
ICAL Date	01/26/2005	Received	04/29/2005
CCal Filename(s)	U50513A_16 & U50513B_17	Extracted	05/05/2005
Method Blank ID	BLANK-6952	Analyzed	05/14/2005 13:31

Native isomers	Conc ng/Kg	EMPC ng/Kg	LRL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	----	1.1	0.20	I	2,3,7,8-TCDF-13C	2.00	97
Total TCDF	4.90	----	0.20		2,3,7,8-TCDD-13C	2.00	72
					1,2,3,7,8-PeCDF-13C	2.00	84
2,3,7,8-TCDD	ND	----	0.30	A	2,3,4,7,8-PeCDF-13C	2.00	96
Total TCDD	5.30	----	0.20		1,2,3,7,8-PeCDD-13C	2.00	92
					1,2,3,4,7,8-HxCDF-13C	2.00	109
1,2,3,7,8-PeCDF	----	3.6	0.99	E	1,2,3,6,7,8-HxCDF-13C	2.00	94
2,3,4,7,8-PeCDF	2.00	----	0.99	J	2,3,4,6,7,8-HxCDF-13C	2.00	104
Total PeCDF	9.70	----	0.99		1,2,3,7,8,9-HxCDF-13C	2.00	101
					1,2,3,4,7,8-HxCDD-13C	2.00	85
1,2,3,7,8-PeCDD	1.40	----	0.99	J	1,2,3,6,7,8-HxCDD-13C	2.00	70
Total PeCDD	5.80	----	0.99		1,2,3,4,6,7,8-HpCDF-13C	2.00	63
					1,2,3,4,7,8,9-HpCDF-13C	2.00	57
1,2,3,4,7,8-HxCDF	1.60	----	0.99	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	48
1,2,3,6,7,8-HxCDF	1.50	----	0.99	J	OCDD-13C	4.00	54
2,3,4,6,7,8-HxCDF	1.00	----	0.99	J			
1,2,3,7,8,9-HxCDF	ND	----	0.99		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	40.00	----	0.99		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	2.30	----	0.99	J	2,3,7,8-TCDD-37Cl4	0.20	82
1,2,3,6,7,8-HxCDD	9.40	----	0.99				
1,2,3,7,8,9-HxCDD	4.80	----	0.99	J			
Total HxCDD	61.00	----	0.99				
1,2,3,4,6,7,8-HpCDF	33.00	----	0.99		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	2.30	----	0.99	J	Equivalence: 7.4 ng/Kg		
Total HpCDF	110.00	----	0.99		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	170.00	----	0.99				
Total HpCDD	410.00	----	0.99				
OCDF	110.00	----	2.00				
OCDD	1600.00	----	2.00				

Results reported on a dry weight basis  
 Conc = Concentration (Totals include 2,3,7,8-substituted isomers)  
 EMPC = Estimated Maximum Possible Concentration  
 A = Detection Limit based on signal-to-noise measurement  
 J = Concentration detected is below the calibration range  
 B = Less than 10 times higher than method blank level  
 P = Recovery outside of target range  
 Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit  
 I = Interference  
 E = PCDE Interference  
 S = Saturated signal  
 ND = Not Detected  
 NA = Not Applicable  
 NC = Not Calculated  
 \* = See Discussion

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Pace Analytical Services, Inc.  
 1700 Elm Street - Suite 200  
 Minneapolis, MN 55414

Tel: 612-607-1700  
 Fax: 612-607-6444

### Method 8290 Laboratory Control Spike Results

Client - Analytical Resources Inc.

Lab Sample ID	LCS-6953	Matrix	Solid
Filename	F50508B_01	Dilution	NA
Total Amount Extracted	20.2 g	Extracted	05/05/2005
ICAL Date	03/24/2005	Analyzed	05/08/2005 20:17
CCal Filename(s)	F50508A_16 & F50508B_16	Injected By	BAL
Method Blank ID	BLANK-6952		

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.24	121	2,3,7,8-TCDF-13C	2.00	6 P
				2,3,7,8-TCDD-13C	2.00	7 P
				1,2,3,7,8-PeCDF-13C	2.00	26 P
2,3,7,8-TCDD	0.20	0.24	121	2,3,4,7,8-PeCDF-13C	2.00	41
				1,2,3,7,8-PeCDD-13C	2.00	44
				1,2,3,4,7,8-HxCDF-13C	2.00	63
1,2,3,7,8-PeCDF	1.00	1.30	130	1,2,3,6,7,8-HxCDF-13C	2.00	56
2,3,4,7,8-PeCDF	1.00	1.28	128	2,3,4,6,7,8-HxCDF-13C	2.00	65
1,2,3,7,8-PeCDD	1.00	1.10	110	1,2,3,7,8,9-HxCDF-13C	2.00	67
				1,2,3,4,7,8-HxCDD-13C	2.00	59
				1,2,3,6,7,8-HxCDD-13C	2.00	56
1,2,3,4,7,8-HxCDF	1.00	1.14	114	1,2,3,4,6,7,8-HpCDF-13C	2.00	51
1,2,3,6,7,8-HxCDF	1.00	1.25	125	1,2,3,4,7,8,9-HpCDF-13C	2.00	47
2,3,4,6,7,8-HxCDF	1.00	1.25	125	1,2,3,4,6,7,8-HpCDD-13C	2.00	54
1,2,3,7,8,9-HxCDF	1.00	1.18	118	OCDD-13C	4.00	45
1,2,3,4,7,8-HxCDD	1.00	1.25	125	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
				2,3,7,8-TCDD-37Cl4	0.20	8
1,2,3,6,7,8-HxCDD	1.00	1.31	131 P			
1,2,3,7,8,9-HxCDD	1.00	1.30	130			
1,2,3,4,6,7,8-HpCDF	1.00	1.38	138 P			
				1,2,3,4,7,8,9-HpCDF	1.00	1.38
1,2,3,4,6,7,8-HpCDD	1.00	1.16	116			
OCDF	2.00	2.87	144 P			
OCDD	2.00	2.65	132 P			

Qs = Quantity Spiked  
 Qm = Quantity Measured  
 Rec. = Recovery (Expressed as Percent)  
 P = Recovery outside of target range  
 X = Background subtracted value  
 Nn = Value obtained from additional analysis  
 NA = Not Applicable  
 \* = See Discussion

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**Method 8290 Spike Sample Results**

Client - Analytical Resources Inc.

Client's Sample ID	05-7313-HZ67E OF-SED-04-MS		
Lab Sample ID	1012437005-MS		
Filename	U50513A_01	Matrix	Sediment
Total Amount Extracted	13.6 g	Dilution	NA
ICAL Date	01/26/2005	Extracted	05/05/2005
CCal Filename(s)	U50512B_16 & U50513A_16	Analyzed	05/13/2005 13:52
Method Blank ID	BLANK-6952	Injected By	SMT

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.22	108	2,3,7,8-TCDF-13C	2.00	73
				2,3,7,8-TCDD-13C	2.00	78
				1,2,3,7,8-PeCDF-13C	2.00	70
2,3,7,8-TCDD	0.20	0.19	95	2,3,4,7,8-PeCDF-13C	2.00	77
				1,2,3,7,8-PeCDD-13C	2.00	87
				1,2,3,4,7,8-HxCDF-13C	2.00	97
1,2,3,7,8-PeCDF	1.00	0.79	79	1,2,3,6,7,8-HxCDF-13C	2.00	74
2,3,4,7,8-PeCDF	1.00	1.02	102	2,3,4,6,7,8-HxCDF-13C	2.00	83
				1,2,3,7,8,9-HxCDF-13C	2.00	86
				1,2,3,4,7,8-HxCDD-13C	2.00	91
1,2,3,7,8-PeCDD	1.00	0.92	92	1,2,3,6,7,8-HxCDD-13C	2.00	70
				1,2,3,4,6,7,8-HpCDF-13C	2.00	73
				1,2,3,4,7,8,9-HpCDF-13C	2.00	67
1,2,3,4,7,8-HxCDF	1.00	0.97	97	1,2,3,4,6,7,8-HpCDD-13C	2.00	78
1,2,3,6,7,8-HxCDF	1.00	1.00	100	OCDD-13C	4.00	71
2,3,4,6,7,8-HxCDF	1.00	0.95	95			
1,2,3,7,8,9-HxCDF	1.00	0.92	92	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.08	108	2,3,7,8-TCDD-37Cl4	0.20	77
1,2,3,6,7,8-HxCDD	1.00	1.33	133			
1,2,3,7,8,9-HxCDD	1.00	1.15	115			
1,2,3,4,6,7,8-HpCDF	1.00	4.64	464			
1,2,3,4,7,8,9-HpCDF	1.00	1.24	124			
1,2,3,4,6,7,8-HpCDD	1.00	9.15	915			
OCDF	2.00	10.60	530			
OCDD	2.00	70.79	3540			

Qs = Quantity Spiked  
 Qm = Quantity Measured  
 Rec. = Recovery (Expressed as Percent)  
 P = Recovery outside of target range of 40-135%  
 X = Background subtracted value  
 E = PCDE Interference  
 Nn = Value obtained from additional analysis  
 NA = Not Applicable  
 \* = See Discussion

Report No.....1012437

**REPORT OF LABORATORY ANALYSIS**

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### Method 8290 Spike Sample Results

Client - Analytical Resources Inc.

Client's Sample ID	05-7313-HZ67E OF-SED-04-MSD	Matrix	Sediment
Lab Sample ID	1012437005-MSD	Dilution	NA
Filename	U50513A_02	Extracted	05/05/2005
Total Amount Extracted	13.6 g	Analyzed	05/13/2005 14:38
ICAL Date	01/26/2005	Injected By	SMT
CCal Filename(s)	U50512B_16 & U50513A_16		
Method Blank ID	BLANK-6952		

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.23	117	2,3,7,8-TCDF-13C 2,3,7,8-TCDD-13C	2.00 2.00	67 72
2,3,7,8-TCDD	0.20	0.20	102	1,2,3,7,8-PeCDF-13C 2,3,4,7,8-PeCDF-13C 1,2,3,7,8-PeCDD-13C	2.00 2.00 2.00	67 73 81
1,2,3,7,8-PeCDF	1.00	0.78	78	1,2,3,4,7,8-HxCDF-13C 1,2,3,6,7,8-HxCDF-13C	2.00 2.00	91 67
2,3,4,7,8-PeCDF	1.00	1.11	111	2,3,4,6,7,8-HxCDF-13C 1,2,3,7,8,9-HxCDF-13C 1,2,3,4,7,8-HxCDD-13C	2.00 2.00 2.00	70 73 81
1,2,3,7,8-PeCDD	1.00	0.96	96	1,2,3,6,7,8-HxCDD-13C 1,2,3,4,6,7,8-HpCDF-13C 1,2,3,4,7,8,9-HpCDF-13C	2.00 2.00 2.00	59 60 48
1,2,3,4,7,8-HxCDF	1.00	1.02	102	1,2,3,4,6,7,8-HpCDD-13C OCDD-13C	2.00 4.00	60 44
1,2,3,6,7,8-HxCDF	1.00	1.05	105			
2,3,4,6,7,8-HxCDF	1.00	1.06	106			
1,2,3,7,8,9-HxCDF	1.00	0.98	98	1,2,3,4-TCDD-13C 1,2,3,7,8,9-HxCDD-13C	2.00 2.00	NA NA
1,2,3,4,7,8-HxCDD	1.00	1.09	109	2,3,7,8-TCDD-37Cl4	0.20	72
1,2,3,6,7,8-HxCDD	1.00	1.36	136			
1,2,3,7,8,9-HxCDD	1.00	1.12	112			
1,2,3,4,6,7,8-HpCDF	1.00	3.19	319			
1,2,3,4,7,8,9-HpCDF	1.00	1.22	122			
1,2,3,4,6,7,8-HpCDD	1.00	7.06	706			
OCDF	2.00	6.86	343			
OCDD	2.00	52.00	2600			

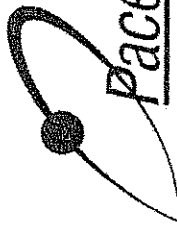
Qs = Quantity Spiked  
Qm = Quantity Measured  
Rec. = Recovery (Expressed as Percent)  
P = Recovery outside of target range of 40-135%  
X = Background subtracted value  
E = PCDE Interference  
Nn = Value obtained from additional analysis  
NA = Not Applicable  
\* = See Discussion

Report No.....1012437

## REPORT OF LABORATORY ANALYSIS

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**Pace Analytical**<sup>TM</sup>

Pace Analytical Services, Inc.  
1700 Elm Street - Suite 200  
Minneapolis, MN 55414

Tel: 612-607-1700  
Fax: 612-607-6444

**Method 8290 Spike Sample Results**

Client - Analytical Resources Inc.

Client Sample ID 05-7313-HZ67E OF-SED-04  
Lab Sample ID 1012437005  
MS ID 1012437005-MS  
MSD ID 1012437005-MSD

Sample Filename U50513A\_14  
MS Filename U50513A\_01  
MSD Filename U50513A\_02

Dry Weights  
Sample Amount 10.1 g  
MS Amount 10.2 g  
MSD Amount 10.2 g

Analyte	Sample Conc. ng/Kg	MS/MSD Qs (ng)	MS Qm (ng)	MSD Qm (ng)	RPD	MS % Rec.	Background Subtracted MSD % Rec.	RPD
2,3,7,8-TCDF	0.000	0.20	0.22	0.23	8.5	104	113	8.8
2,3,7,8-TCDD	0.310	0.20	0.19	0.20	7.3	94	101	7.4
1,2,3,7,8-PeCDF	0.000	1.00	0.79	0.78	1.9	74	73	2.0
2,3,4,7,8-PeCDF	2.523	1.00	1.02	1.11	7.8	100	108	8.0
1,2,3,7,8-PeCDD	0.000	1.00	0.92	0.96	4.0	90	94	4.1
1,2,3,4,7,8-HxCDF	4.897	1.00	0.97	1.02	5.8	92	97	6.1
1,2,3,6,7,8-HxCDF	4.130	1.00	1.00	1.05	5.0	95	100	5.2
2,3,4,6,7,8-HxCDF	3.594	1.00	0.95	1.06	11.0	91	102	11.4
1,2,3,7,8,9-HxCDF	0.000	1.00	0.92	0.98	5.8	92	98	5.8
1,2,3,4,7,8-HxCDD	4.931	1.00	1.08	1.09	1.0	103	104	1.0
1,2,3,6,7,8-HxCDD	17.027	1.00	1.33	1.36	2.0	116	118	2.3
1,2,3,7,8,9-HxCDD	9.062	1.00	1.15	1.12	2.4	106	103	2.6
1,2,3,4,6,7,8-HpCDF	196.935	1.00	4.64	3.19	37.2	264	118	76.4
1,2,3,4,7,8,9-HpCDF	6.473	1.00	1.24	1.22	2.0	117	115	2.1
1,2,3,4,6,7,8-HpCDD	385.218	1.00	9.15	7.06	25.7	523	314	49.9
OCDF	397.005	2.00	10.60	6.86	42.8	328	141	79.8
OCDD	3501.427	2.00	70.79	52.00	30.6	1758	817	73.1

**Definitions**

MS = Matrix Spike  
MSD = Matrix Spike Duplicate  
Qm = Quantity Measured  
Qs = Quantity Spiked  
% Rec. = Percent Recovery  
RPD = Relative Percent Difference

CDD = Chlorinated dibenzo-p-dioxin  
CDF = Chlorinated dibenzo-p-furan  
T = Tetra  
Pe = Penta  
Hx = Hexa  
Hp = Hepta  
O = Octa





**Analytical Resources, Incorporated**

Analytical Chemists and Consultants

May 24, 2005

Joe Morrice  
GeoMatrix Consultants  
600 University, Suite 1020  
Seattle, WA 98101

**RE: Project: SPI Everett**  
**ARI Job No: IA71**

Dear Joe:

Please find enclosed a sample custody record (COC) and a set of analytical results for the samples from the project referenced above. Analytical Resources, Inc. accepted seven water samples in good condition on May 9, 2005.

The samples were analyzed for PCP, TSS, dissolved metals as requested on the COC.

These analyses proceeded without incident of note.

Copies of these reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

A handwritten signature in cursive script that reads "Stephanie Lucas".

Stephanie Lucas  
Project Manager  
steph@arilabs.com  
(206) 695-6213



**Analytical Resources, Incorporated**  
Analytical Chemists and Consultants  
May 24, 2005

Joe Morrice  
GeoMatrix Consultants  
600 University, Suite 1020  
Seattle, WA 98101

**RE: Project: SPI Everett**  
**ARI Job No: IA71**

Dear Joe:

Please find enclosed a sample custody record (COC) and a set of analytical results for the samples from the project referenced above. Analytical Resources, Inc. accepted seven water samples in good condition on April 27, 2005.

The samples were analyzed for PCP, TSS, dissolved metals as requested on the COC.

These analyses proceeded without incident of note.

Copies of these reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

*Stephanie Lucas*  
Stephanie Lucas  
Project Manager  
steph@arilabs.com  
(206) 695-6213

# Chain of Custody Record & Laboratory Analysis Request

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



Page: 1 of 1  
 Date: 5-9-05  
 No. of Coolers: 1  
 Cooler Temps: 71X  
 Ice Present?

Turn-around Requested: 5FD  
 Phone: 206-342-1260  
 Client Company: GERMANIA  
 Client Contact: JOE MANICUS  
 Client Project Name: SPI EVERED  
 Client Project #: 10360  
 Samplers: 309

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested			Notes/Comments
					PCP	(B22C)	TSS	
MW-100S	5-9-05	1100	W	1	X			
MW-100D	1030			1	X			
MW-100B-3	1205			3	X	X		
MW-103S	1205			1	X			
MW-103D	1230			1	X			
MW-105S	1440			1	X			
MW-105D	1955			1	X			
Relinquished by: <i>[Signature]</i> Date & Time: 5-9-05 1703 Received by: <i>[Signature]</i> Date & Time: 5-9-05 1703 Printed Name: J. Manic Company: GERMANIA Printed Name: ERIC BRADSON Company: ARI								

**Comments/Special Instructions:**  
 As, Cd, Cr, Cu, Pb, Zn  
 by ICA MS  
 -Field Filtered.

**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, notwithstanding 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.

SW8270 SEMIVOLATILES WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360

<u>Client ID</u>	<u>TBP TOT OUT</u>	
MB-051005	73.3%	0
LCS-051005	70.7%	0
LCSD-051005	66.9%	0
MW-RA8-3	73.6%	0

(TBP) = 2,4,6-Tribromophenol

<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(38-116)	(27-136)

Prep Method: SW3520C  
Log Number Range: 05-8022 to 05-8022

ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: MB-051005  
METHOD BLANK

Lab Sample ID: MB-051005  
LIMS ID: 05-8022  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/13/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: NA  
Date Received: NA

Date Extracted: 05/10/05  
Date Analyzed: 05/11/05 14:30  
Instrument/Analyst: NT6/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	5.0	< 5.0 U

Reported in  $\mu\text{g/L}$  (ppb)

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol	73.3%
----------------------	-------

ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: MW-RA8-3  
SAMPLE

Lab Sample ID: IA71C  
LIMS ID: 05-8022  
Matrix: Water  
Data Release Authorized:  
Reported: 05/13/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/09/05  
Date Received: 05/09/05

Date Extracted: 05/10/05  
Date Analyzed: 05/11/05 16:37  
Instrument/Analyst: NT6/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	5.0	5.6

Reported in  $\mu\text{g/L}$  (ppb)

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol 73.6%



ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: LCS-051005  
LCS/LCSD

Lab Sample ID: LCS-051005  
LIMS ID: 05-8022  
Matrix: Water  
Data Release Authorized:  
Reported: 05/13/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/09/05  
Date Received: 05/09/05

Date Extracted LCS/LCSD: 05/10/05

Sample Amount LCS: 500 mL  
LCSD: 500 mL

Date Analyzed LCS: 05/11/05 15:02

Final Extract Volume LCS: 0.50 mL

LCSD: 05/11/05 15:34

LCSD: 0.50 mL

Instrument/Analyst LCS: NT6/LJR

Dilution Factor LCS: 1.00

LCSD: NT6/LJR

LCSD: 1.00

GPC Cleanup: NO

Analyte	Spike		LCS		Spike		LCSD	
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	RPD	
Pentachlorophenol	28.3	37.5	75.5%	28.8	37.5	76.8%	1.8%	


Semivolatile Surrogate Recovery

	LCS	LCSD
2,4,6-Tribromophenol	70.7%	66.9%

Results reported in  $\mu\text{g/L}$   
RPD calculated using sample concentrations per SW846.

INORGANICS ANALYSIS DATA SHEET  
DISSOLVED METALS  
Page 1 of 1

Sample ID: MW-100S  
SAMPLE

Lab Sample ID: IA71A  
LIMS ID: 05-8020  
Matrix: Water  
Data Release Authorized:   
Reported: 05/23/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/09/05  
Date Received: 05/09/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/12/05	200.8	05/16/05	7440-38-2	Arsenic	0.5	1.2	
200.8	05/12/05	200.8	05/16/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/12/05	200.8	05/16/05	7440-47-3	Chromium	0.5	0.6	
200.8	05/19/05	200.8	05/20/05	7440-50-8	Copper	0.5	2.2	
200.8	05/12/05	200.8	05/16/05	7439-92-1	Lead	1	1	U
200.8	05/12/05	200.8	05/16/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL  
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET  
DISSOLVED METALS  
Page 1 of 1

Sample ID: MW-100S  
DUPLICATE

Lab Sample ID: IA71A  
LIMS ID: 05-8020  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/23/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/09/05  
Date Received: 05/09/05

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	1.2	1.2	0.0%	+/- 0.5	L
Cadmium	200.8	0.2 U	0.2 U	0.0%	+/- 0.2	L
Chromium	200.8	0.6	0.5	18.2%	+/- 0.5	L
Copper	200.8	2.2	2.3	4.4%	+/- 0.5	L
Lead	200.8	1 U	1 U	0.0%	+/- 1	L
Zinc	200.8	4 U	4 U	0.0%	+/- 4	L

Reported in µg/L

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



INORGANICS ANALYSIS DATA SHEET  
DISSOLVED METALS  
Page 1 of 1

Sample ID: MW-100S  
MATRIX SPIKE

Lab Sample ID: IA71A  
LIMS ID: 05-8020  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/23/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/09/05  
Date Received: 05/09/05

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	1.2	27.6	25.0	106%	
Cadmium	200.8	0.2 U	24.2	25.0	96.8%	
Chromium	200.8	0.6	24.4	25.0	95.2%	
Copper	200.8	2.2	23.9	25.0	86.8%	
Lead	200.8	1 U	26	25	104%	
Zinc	200.8	4 U	75	80	93.8%	


Reported in µg/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%

INORGANICS ANALYSIS DATA SHEET  
DISSOLVED METALS  
Page 1 of 1

Sample ID: MW-100D  
SAMPLE

Lab Sample ID: IA71B  
LIMS ID: 05-8021  
Matrix: Water  
Data Release Authorized:   
Reported: 05/23/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/09/05  
Date Received: 05/09/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	pg/L	Q
200.8	05/12/05	200.8	05/16/05	7440-38-2	Arsenic	0.5	9.1	
200.8	05/12/05	200.8	05/16/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/12/05	200.8	05/16/05	7440-47-3	Chromium	0.5	1.0	
200.8	05/12/05	200.8	05/16/05	7440-50-8	Copper	0.5	2.4	
200.8	05/12/05	200.8	05/16/05	7439-92-1	Lead	1	1	U
200.8	05/12/05	200.8	05/16/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL  
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET  
DISSOLVED METALS  
Page 1 of 1

Sample ID: MW-RA8-3  
SAMPLE

Lab Sample ID: IA71C  
LIMS ID: 05-8022  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/23/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/09/05  
Date Received: 05/09/05


Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/12/05	200.8	05/16/05	7440-38-2	Arsenic	0.2	2.1	
200.8	05/12/05	200.8	05/16/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/12/05	200.8	05/16/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/12/05	200.8	05/16/05	7440-50-8	Copper	0.5	0.7	
200.8	05/12/05	200.8	05/16/05	7439-92-1	Lead	1	1	U
200.8	05/12/05	200.8	05/16/05	7440-66-6	Zinc	4	5	

U-Analyte undetected at given RL  
RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET  
DISSOLVED METALS  
Page 1 of 1

Sample ID: MW-103S  
SAMPLE

Lab Sample ID: IA71D  
LIMS ID: 05-8023  
Matrix: Water  
Data Release Authorized:   
Reported: 05/23/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/09/05  
Date Received: 05/09/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/12/05	200.8	05/16/05	7440-38-2	Arsenic	0.2	1.0	
200.8	05/12/05	200.8	05/16/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/12/05	200.8	05/17/05	7440-47-3	Chromium	0.5	0.5	
200.8	05/12/05	200.8	05/16/05	7440-50-8	Copper	0.5	3.4	
200.8	05/12/05	200.8	05/16/05	7439-92-1	Lead	1	1	U
200.8	05/12/05	200.8	05/16/05	7440-66-6	Zinc	4	7	

U-Analyte undetected at given RL  
RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET  
DISSOLVED METALS  
Page 1 of 1

Sample ID: MW-103D  
SAMPLE

Lab Sample ID: IA71E  
LIMS ID: 05-8024  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/23/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/09/05  
Date Received: 05/09/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/12/05	200.8	05/16/05	7440-38-2	Arsenic	0.2	6.3	
200.8	05/12/05	200.8	05/16/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/12/05	200.8	05/16/05	7440-47-3	Chromium	0.5	1.1	
200.8	05/12/05	200.8	05/16/05	7440-50-8	Copper	0.5	3.2	
200.8	05/12/05	200.8	05/16/05	7439-92-1	Lead	1	1	U
200.8	05/12/05	200.8	05/16/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL  
RL-Reporting Limit





INORGANICS ANALYSIS DATA SHEET  
DISSOLVED METALS  
Page 1 of 1

Sample ID: MW-105S  
SAMPLE

Lab Sample ID: IA71F  
LIMS ID: 05-8025  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/23/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/09/05  
Date Received: 05/09/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/12/05	200.8	05/16/05	7440-38-2	Arsenic	0.2	1.4	
200.8	05/12/05	200.8	05/16/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/12/05	200.8	05/17/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/12/05	200.8	05/16/05	7440-50-8	Copper	0.5	3.8	
200.8	05/12/05	200.8	05/16/05	7439-92-1	Lead	1	1	U
200.8	05/12/05	200.8	05/16/05	7440-66-6	Zinc	4	164	

U-Analyte undetected at given RL  
RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET  
DISSOLVED METALS  
Page 1 of 1

Sample ID: MW-105D  
SAMPLE

Lab Sample ID: IA71G  
LIMS ID: 05-8026  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/23/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/09/05  
Date Received: 05/09/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	pg/L	Q
200.8	05/12/05	200.8	05/16/05	7440-38-2	Arsenic	0.2	0.8	
200.8	05/12/05	200.8	05/16/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/12/05	200.8	05/17/05	7440-47-3	Chromium	1	1	
200.8	05/12/05	200.8	05/16/05	7440-50-8	Copper	0.5	0.5	U
200.8	05/12/05	200.8	05/16/05	7439-92-1	Lead	1	1	U
200.8	05/12/05	200.8	05/16/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL  
RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET  
DISSOLVED METALS  
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: IA71MB  
LIMS ID: 05-8021  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/23/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: NA  
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/12/05	200.8	05/16/05	7440-38-2	Arsenic	0.2	0.2	U
200.8	05/12/05	200.8	05/16/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/12/05	200.8	05/16/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/12/05	200.8	05/16/05	7440-50-8	Copper	0.5	0.5	U
200.8	05/12/05	200.8	05/16/05	7439-92-1	Lead	1	1	U
200.8	05/12/05	200.8	05/16/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL  
RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET  
DISSOLVED METALS  
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: IA71LCS  
LIMS ID: 05-8021  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/23/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: NA  
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	26.0	25.0	104%	
Cadmium	200.8	25.1	25.0	100%	
Chromium	200.8	26.0	25.0	104%	
Copper	200.8	26.0	25.0	104%	
Lead	200.8	26	25	104%	
Zinc	200.8	79	80	98.8%	

Reported in µg/L

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



INORGANICS ANALYSIS DATA SHEET  
DISSOLVED METALS  
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: IA71MB  
LIMS ID: 05-8020  
Matrix: Water  
Data Release Authorized: *OK*  
Reported: 05/23/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: NA  
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	pg/L	Q
200.8	05/19/05	200.8	05/20/05	7440-50-8	Copper	0.5	0.5	U

U-Analyte undetected at given RL  
RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET  
DISSOLVED METALS  
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: IA71LCS  
LIMS ID: 05-8020  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/23/05

QC Report No: IA71-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: NA  
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Copper	200.8	26.1	25.0	104%	

Reported in µg/L

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

SAMPLE RESULTS-CONVENTIONALS  
IA71-Geomatrix Consultants



Matrix: Water  
Data Release Authorized: *ML*  
Reported: 05/12/05

Project: SPI EVERETT  
Event: 10360  
Date Sampled: 05/09/05  
Date Received: 05/09/05

Client ID: MW-RA8-3  
ARI ID: 05-8022 IA71C

Analyte	Date Batch	Method	Units	RL	Sample
Total Suspended Solids	05/10/05 051005#1	EPA 160.2	mg/L	2.2	3.7

RL Analytical reporting limit  
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS  
IA71-Geomatrix Consultants



Matrix: Water  
Data Release Authorized: *JM*  
Reported: 05/12/05

Project: SPI EVERETT  
Event: 10360  
Date Sampled: NA  
Date Received: NA

Analyte	Date	Units	Blank
Total Suspended Solids	05/10/05	mg/L	< 1.0 U



LAB CONTROL RESULTS-CONVENTIONALS  
IA71-Geomatrix Consultants



Matrix: Water  
Data Release Authorized *ML*  
Reported: 05/12/05

Project: SPI EVERETT  
Event: 10360  
Date Sampled: NA  
Date Received: NA

Analyte	Date	Units	LCS	Spike Added	Recovery
Total Suspended Solids	05/10/05	mg/L	49.6	50.0	99.2%

REPLICATE RESULTS-CONVENTIONALS  
IA71-Geomatrix Consultants



Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/12/05

Project: SPI EVERETT  
Event: 10360  
Date Sampled: 05/09/05  
Date Received: 05/09/05

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: IA71C Client ID: MW-RA8-3					
Total Suspended Solids	05/10/05	mg/L	3.7	3.0	20.9%





**Analytical Resources, Incorporated**

Analytical Chemists and Consultants

May 24, 2005

Joe Morrice  
GeoMatrix Consultants  
600 University, Suite 1020  
Seattle, WA 98101

**RE: Project: SPI Everett**  
**ARI Job No: IB06**

Dear Joe:

Please find enclosed a sample custody record (COC) and a set of analytical results for the samples from the project referenced above. Analytical Resources, Inc. accepted six soil samples and sixteen water samples in good condition on May 12, 2005.

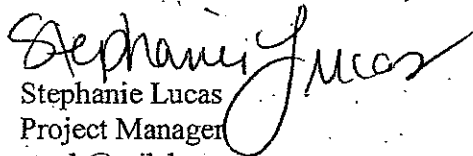
Selected samples were analyzed for PCP, TSS, PAH, SIM PAH, hardness, PCB, NWTPH-Dx, and total metals, as requested on the COC.

Please refer to the case narrative for anomalies associated with these samples.

Copies of these reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

  
Stephanie Lucas  
Project Manager  
steph@arilabs.com  
(206) 695-6213

# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **IBOLE** Turn-around Requested: **5 TO**

ARI Client Company: **GEANTAR** Phone: **206-342-1735**

Client Contact: **See Manual**

Client Project Name: **SLE OVERT**

Client Project #: **10360** Samplers: **SMT**

Page: **3** of **5**

Date: **5-11-05** Ice Present? **Y**

No. of Coolers: **3** Cooler Temps: **3.5, 4.0, 6.0**

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	Analysis Requested				Notes/Comments
					PCP	TSS	PAHs	THANONS	
GP-07 5-8	5-11	1600	S	1	X				
GP-09 5	1610		W	1					
GP-09 D	1645		W	1					
GP-10 7-9	1730		S	1	X				
GP-10 S	<del>1745</del>		<del>W</del>	<del>3</del>	X				
GP-10 D	<del>185</del>		<del>W</del>	<del>3</del>	X				
GP-11 4-7	1900		S	2	X				
GP-11 S	1910		W	3	X				
GP-11 D	1925		W	3	X				
River 5/11/05	2005		W	1				X	

Relinquished by: (Signature)	Relinquished by: (Signature)
Printed Name: <b>Bob Mander</b>	Printed Name:
Company: <b>ARI</b>	Company:
Date & Time: <b>5-12-05 1416</b>	Date & Time: <b>5/12/05 1416</b>

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

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

# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **IB06** Turn-around Requested: **STD**

ARI Client Company: **GEOMATRIA** Phone: **206 342-1760**

Client Contact: **JOE MANSUE**

Client Project Name: **SPE EVERETT**

Client Project #: **10360** Samplers: **JM7**

Page: **4** of **5**

Date: **5-11** Ice Present?

No. of Coolers: **3** Cooler Temps: **3.5, 4.0, 6.0**

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	Analysis Requested			Notes/Comments
					Mems	PCOS	TH-01	
GP-06 2-6	5-11	930	S	2	X	X		
GP-04 S		940	W	1	X			
GP-04 D		1025	W	1	X			
GP-04 2-6		1105	S	1	X			
GP-04 S		1120	W	1	X			
GP-04 D		1200	W	1	X			
GP-04 DD		1340	W	1	X			
GP-05 4-6		1450	S	1	X			
GP-05 S		1500	W	1	X			
GP-05 D		1530	W	1	X			
Comments/Special Instructions	Relinquished by: (Signature) <i>[Signature]</i> Date & Time: <b>5-12-05 1416</b>				Received by: (Signature) <i>[Signature]</i> Date & Time: <b>5/12/05 1416</b>			
	Printed Name: <b>JOE MANSUE</b> Company: <b>GMA</b>				Printed Name: <b>BRIAN LEGG</b> Company: <b>GMA</b>			

**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 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.





**Case Narrative**

**SPI Everett**

**ARI Job: IB06**

**May 24, 2005**

**Pentachlorophenol by 8270C**

The water samples were extracted on 5/16/05. The samples were analyzed on 5/18/05 and 5/19/05 within the method recommended holding time

**Surrogates:** All surrogate recoveries were within ARI calculated control limits. Due to a high dilution necessary to get PCP within calibration range, the surrogate was diluted out of sample **GP-10S-dilution**.

**Method Blank:** The method blank was free of analytes of interest.

**Samples:** Sample **GP-10S** contained PCP at an "E" flag concentration that exceeded the linear range of the detector. The sample was diluted and re-analyzed. Both runs are reported.

No other anomalies were associated with these samples.

**LCS/LCSD (s):** All percent recoveries and RPDs were within control limits.

**Pentachlorophenol by 8270C-SIM**

The soil samples were screened prior to extraction on 5/18/05. The samples were analyzed on 5/20/05 within the method recommended holding time

**Surrogates:** All surrogate recoveries were within ARI calculated control limits.

**Method Blank:** The method blank was free of analytes of interest.

**Samples:** No anomalies were associated with these samples.

**LCS/LCSD (s):** All percent recoveries and RPDs were within control limits.

**PAH by 8270C**

The soil samples were screened prior to extraction on 5/18/05. The samples were analyzed on 5/19/05 within the method recommended holding time

**Surrogates:** All surrogate recoveries were within ARI calculated control limits.

**Method Blank:** The method blank was free of analytes of interest.

**Samples:** No anomalies were associated with these samples.

**LCS/LCSD (s):** All percent recoveries and RPDs were within control limits.





**PCBs by 8082**

The soil samples were screened prior to extraction on 5/16/05. The samples were analyzed on 5/17/05 within the method recommended holding time

**Surrogates:** All surrogate recoveries were within ARI calculated control limits.

**Method Blank:** The method blank was free of analytes of interest.

**Samples:** Aroclor 1254 is "J" flagged in sample GP-06 2-6. The "J" indicates an estimated concentration when the value is less than ARI's established reporting limit(s).

No other anomalies were associated with these samples.

**LCS/LCSD (s):** All percent recoveries and RPDs were within control limits.

**NWTWPH-Dx**

The soil samples were extracted on 5/19/05. The samples were analyzed on 5/20/05 within the method recommended holding time

**Surrogates:** All surrogate recoveries were within ARI calculated control limits.

**Method Blank:** The method blank was free of analytes of interest.

**Samples:** No anomalies were associated with these samples.

**LCS/LCSD (s):** All percent recoveries and RPDs were within control limits.

**Total Metals by 6010B**

The samples were prepped on 5/17/05 and 5/18/05. The samples were analyzed between 5/19/05 and 5/23/05 within the method recommended holding time.

**Method Blank:** The method blanks were free of contamination.

**Samples:** No anomalies were associated with these samples.

**LCS/Spike Blank:** All percent recoveries were in control.

**Total Suspended Solids**

The samples were analyzed on 5/13/05 within the method recommended holding time.

**Method Blank:** The method blank was free of contamination.

**Samples:** No anomalies were associated with these samples.

**LCS/Replicate:** All percent recoveries and RPDs were in control.

**SW8270 SEMIVOLATILES WATER SURROGATE RECOVERY SUMMARY**

Matrix: Water

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360

<u>Client ID</u>	<u>TBP TOT OUT</u>	
MB-051605	89.3%	0
LCS-051605	87.2%	0
LCSD-051605	86.1%	0
GP-10 S	70.8%	0
GP-10 S DL	D	0
GP-10 D	78.9%	0
GP-11 S	75.5%	0
GP-11 D	64.8%	0
MW-102S	76.5%	0

(TBP) = 2,4,6-Tribromophenol

<b>LCS/MB LIMITS</b>	<b>QC LIMITS</b>
(38-116)	(27-136)

Prep Method: SW3520C  
Log Number Range: 05-8256 to 05-8268

ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: MB-051605  
METHOD BLANK

Lab Sample ID: MB-051605  
LIMS ID: 05-8256  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/23/05

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: NA  
Date Received: NA

Date Extracted: 05/16/05  
Date Analyzed: 05/18/05 10:16  
Instrument/Analyst: NT6/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	5.0	< 5.0 U

Reported in  $\mu\text{g/L}$  (ppb)

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol 89.3%

ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: GP-10 S  
SAMPLE

Lab Sample ID: IB06I  
LIMS ID: 05-8256  
Matrix: Water  
Data Release Authorized: *AB*  
Reported: 05/23/05

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Date Extracted: 05/16/05  
Date Analyzed: 05/19/05 14:18  
Instrument/Analyst: NT6/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 5.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	25	10,000 E

Reported in  $\mu\text{g/L}$  (ppb)

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol	70.8%
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ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: GP-10 S  
DILUTION

Lab Sample ID: IB06I  
LIMS ID: 05-8256  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/23/05

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Date Extracted: 05/16/05  
Date Analyzed: 05/19/05 17:29  
Instrument/Analyst: NT6/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 250

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	1,200	14,000


Reported in  $\mu\text{g/L}$  (ppb)

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol D

**ORGANICS ANALYSIS DATA SHEET**  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: GP-10 D  
SAMPLE

Lab Sample ID: IB06J  
LIMS ID: 05-8257  
Matrix: Water  
Data Release Authorized:   
Reported: 05/23/05

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Date Extracted: 05/16/05  
Date Analyzed: 05/19/05 14:50  
Instrument/Analyst: NT6/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	5.0	15
Reported in $\mu\text{g/L}$ (ppb)			
<u>Semivolatile Surrogate Recovery</u>			
	2,4,6-Tribromophenol	78.9%	

ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: GP-11 S  
SAMPLE

Lab Sample ID: IB06K  
LIMS ID: 05-8258  
Matrix: Water  
Data Release Authorized:  
Reported: 05/23/05 *AS*

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Date Extracted: 05/16/05  
Date Analyzed: 05/18/05 14:31  
Instrument/Analyst: NT6/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	5.0	< 5.0 U


Reported in  $\mu\text{g/L}$  (ppb)

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol 75.5%

ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: GP-11 D  
SAMPLE

Lab Sample ID: IB06L  
LIMS ID: 05-8259  
Matrix: Water  
Data Release Authorized:   
Reported: 05/23/05

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Date Extracted: 05/16/05  
Date Analyzed: 05/18/05 15:03  
Instrument/Analyst: NT6/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	5.0	< 5.0 U

Reported in  $\mu\text{g/L}$  (ppb)


Semivolatile Surrogate Recovery

2,4,6-Tribromophenol	64.8%
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ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: MW-102S  
SAMPLE

Lab Sample ID: IB06U  
LIMS ID: 05-8268  
Matrix: Water  
Data Release Authorized:  
Reported: 05/23/05 

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: 05/12/05  
Date Received: 05/12/05

Date Extracted: 05/16/05  
Date Analyzed: 05/18/05 15:36  
Instrument/Analyst: NT6/LJR

Sample Amount: 500 mL  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	5.0	< 5.0 U

Reported in  $\mu\text{g/L}$  (ppb)

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol 76.5%

ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: LCS-051605  
LCS/LCSD

Lab Sample ID: LCS-051605  
LIMS ID: 05-8256  
Matrix: Water  
Data Release Authorized: *AS*  
Reported: 05/23/05

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Date Extracted LCS/LCSD: 05/16/05

Sample Amount LCS: 500 mL  
LCSD: 500 mL

Date Analyzed LCS: 05/18/05 10:48  
LCSD: 05/18/05 11:20

Final Extract Volume LCS: 0.50 mL  
LCSD: 0.50 mL

Instrument/Analyst LCS: NT6/LJR  
LCSD: NT6/LJR

Dilution Factor LCS: 1.00  
LCSD: 1.00

GPC Cleanup: NO

Analyte	Spike		LCS		Spike		RPD
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	
Pentachlorophenol	20.0	25.0	80.0%	21.9	25.0	87.6%	9.1%

Semivolatile Surrogate Recovery

	LCS	LCSD
2,4,6-Tribromophenol	87.2%	86.1%

Results reported in µg/L  
RPD calculated using sample concentrations per SW846.

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360

<u>Client ID</u>	<u>TBP</u>	<u>TOT OUT</u>
MB-051805	91.5%	0
LCS-051805	82.9%	0
LCSD-051805	100%	0
GP-11 4-7	72.0%	0

LCS/MB LIMITS      QC LIMITS

(TBP) = 2,4,6-Tribromophenol

(30-160)

(30-160)

Prep Method: SW3550B  
Log Number Range: 05-8250 to 05-8250

**ORGANICS ANALYSIS DATA SHEET**

Semivolatiles by Selected Ion Monitoring GC/MS  
Page 1 of 1

Sample ID: MB-051805  
METHOD BLANK

Lab Sample ID: MB-051805  
LIMS ID: 05-8250  
Matrix: Soil  
Data Release Authorized:  
Reported: 05/20/05

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: NA  
Date Received: NA

Date Extracted: 05/18/05  
Date Analyzed: 05/20/05 12:38  
Instrument/Analyst: NT1/Van  
GPC Cleanup: No

Sample Amount: 7.50 g  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00  
Percent Moisture: NA  
pH: NA

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	33	< 33 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

2,4,6-Tribromophenol	91.5%
----------------------	-------

**ORGANICS ANALYSIS DATA SHEET**

Semivolatiles by Selected Ion Monitoring GC/MS  
Page 1 of 1

Sample ID: GP-11 4-7  
SAMPLE

Lab Sample ID: IB06C  
LIMS ID: 05-8250  
Matrix: Soil  
Data Release Authorized:  
Reported: 05/20/05

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Date Extracted: 05/18/05  
Date Analyzed: 05/20/05 13:54  
Instrument/Analyst: NT1/Van  
GPC Cleanup: No

Sample Amount: 5.96 g-dry-wt  
Final Extract Volume: 0.50 mL  
Dilution Factor: 1.00  
Percent Moisture: 20.6 %  
pH: 6.7

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	42	< 42 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**SIM Semivolatile Surrogate Recovery**

2,4,6-Tribromophenol 72.0%

**ORGANICS ANALYSIS DATA SHEET**  
Semivolatiles by SW8270C SIM GC/MS  
Page 1 of 1

Sample ID: LCS-051805  
LCS/LCSD

Lab Sample ID: LCS-051805  
LIMS ID: 05-8250  
Matrix: Soil  
Data Release Authorized: *ANB*  
Reported: 05/23/05

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Date Extracted LCS/LCSD: 05/18/05

Sample Amount LCS: 7.50 g

Date Analyzed LCS: 05/20/05 13:03

Final Extract Volume LCS: 0.50 g

LCSD: 05/20/05 13:29

LCSD: 0.50 mL

Instrument/Analyst LCS: NT1/Van

Dilution Factor LCS: 1.00

LCSD: NT1/Van

LCSD: 1.00

GPC Cleanup: No

pH: NA

Alumina Cleanup: No

Moisture: NA

Analyte	Spike		LCS		Spike		LCSD		RPD
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	LCSD		
Pentachlorophenol	1920	2500	76.8%	2260	2500	90.4%	16.3%		

Reported in  $\mu\text{g}/\text{kg}$  (ppb)  
RPD calculated using sample concentrations per SW846.

**SIM Semivolatile Surrogate Recovery**

	LCS	LCSD
2,4,6-Tribromophenol	82.9%	100%

SW8270 PNA SURROGATE RECOVERY SUMMARY



Matrix: Soil

QC Report No: IB06-Geomatrix Consultants  
 Project: SPI Everett  
 10360

Client ID	TER	FBP	TOT OUT
MB-051805	83.2%	67.2%	0
LCS-051805	79.6%	65.6%	0
LCSD-051805	76.0%	62.8%	0
GP-11 4-7	85.2%	59.6%	0

	LCS/MB LIMITS	QC LIMITS
(TER) = dl4-p-Terphenyl	(50-113)	(30-123)
(FBP) = 2-Fluorobiphenyl	(30-160)	(30-160)

Prep Method: SW3550B  
 Log Number Range: 05-8250 to 05-8250

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270C GC/MS

Page 1 of 1

Sample ID: MB-051805

METHOD BLANK

Lab Sample ID: MB-051805

LIMS ID: 05-8250

Matrix: Soil

Data Release Authorized:

Reported: 05/23/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: NA

Date Received: NA

Date Extracted: 05/18/05

Date Analyzed: 05/19/05 11:09

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: Yes

Sample Amount: 7.50 g

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: NA

pH: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
83-32-9	Acenaphthene	67	< 67 U
86-73-7	Fluorene	67	< 67 U
85-01-8	Phenanthrene	67	< 67 U
120-12-7	Anthracene	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
56-55-3	Benzo (a) anthracene	67	< 67 U
218-01-9	Chrysene	67	< 67 U
205-99-2	Benzo (b) fluoranthene	67	< 67 U
207-08-9	Benzo (k) fluoranthene	67	< 67 U
50-32-8	Benzo (a) pyrene	67	< 67 U
193-39-5	Indeno (1,2,3-cd) pyrene	67	< 67 U
53-70-3	Dibenz (a,h) anthracene	67	< 67 U
191-24-2	Benzo (g,h,i) perylene	67	< 67 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**Semivolatile Surrogate Recovery**

d14-p-Terphenyl	83.2%
2-Fluorobiphenyl	67.2%



**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270C GC/MS

Page 1 of 1

Sample ID: GP-11 4-7

SAMPLE

Lab Sample ID: IB06C

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8250

Project: SPI Everett

Matrix: Soil

10360

Data Release Authorized: *[Signature]*

Date Sampled: 05/11/05

Reported: 05/23/05

Date Received: 05/12/05

Date Extracted: 05/18/05

Sample Amount: 5.99 g-dry-wt

Date Analyzed: 05/19/05 16:57

Final Extract Volume: 0.5 mL

Instrument/Analyst: NT6/LJR

Dilution Factor: 1.00

GPC Cleanup: No

Percent Moisture: 20.6%

Alumina: Yes

pH: 6.7

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	84	< 84 U
208-96-8	Acenaphthylene	84	< 84 U
83-32-9	Acenaphthene	84	< 84 U
86-73-7	Fluorene	84	< 84 U
85-01-8	Phenanthrene	84	< 84 U
120-12-7	Anthracene	84	< 84 U
206-44-0	Fluoranthene	84	< 84 U
129-00-0	Pyrene	84	< 84 U
56-55-3	Benzo (a) anthracene	84	< 84 U
218-01-9	Chrysene	84	< 84 U
205-99-2	Benzo (b) fluoranthene	84	< 84 U
207-08-9	Benzo (k) fluoranthene	84	< 84 U
50-32-8	Benzo (a) pyrene	84	< 84 U
193-39-5	Indeno (1,2,3-cd) pyrene	84	< 84 U
53-70-3	Dibenz (a,h) anthracene	84	< 84 U
191-24-2	Benzo (g,h,i) perylene	84	< 84 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**Semivolatile Surrogate Recovery**

d14-p-Terphenyl	85.2%
2-Fluorobiphenyl	59.6%

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270C GC/MS

Page 1 of 1

Sample ID: LCS-051805

LCS/LCSD

Lab Sample ID: LCS-051805

LIMS ID: 05-8250

Matrix: Soil

Data Release Authorized:

Reported: 05/23/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: NA

Date Received: 05/12/05

Date Extracted LCS/LCSD: 05/18/05

Sample Amount LCS: 7.50 g

LCSD: 7.50 g

Date Analyzed LCS: 05/19/05 11:40

Final Extract Volume LCS: 0.50 mL

LCSD: 05/19/05 12:12

LCSD: 0.50 mL

Instrument/Analyst LCS: NT6/LJR

Dilution Factor LCS: 1.00

LCSD: NT6/LJR

LCSD: 1.00

GPC Cleanup: NO

Alumina Cleanup: YES

Analyte	Spike		LCS		Spike		RPD
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	
Naphthalene	973	1670	58.3%	985	1670	59.0%	1.2%
Acenaphthene	1040	1670	62.3%	1050	1670	62.9%	1.0%
Fluoranthene	1250	1670	74.9%	1240	1670	74.3%	0.8%
Benzo(a)anthracene	1220	1670	73.1%	1220	1670	73.1%	0.0%

**Semivolatile Surrogate Recovery**

	LCS	LCSD
d14-p-Terphenyl	79.6%	76.0%
2-Fluorobiphenyl	65.6%	62.8%

Results reported in  $\mu\text{g}/\text{kg}$

RPD calculated using sample concentrations per SW846.

SW8082/PCB SOIL/SEDIMENTS SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360

<u>Client ID</u>	<u>DCBP</u>	<u>TCMX</u>	<u>TOT OUT</u>
MB-051605	117%	78.5%	0
LCS-051605	111%	90.2%	0
LCSD-051605	110%	90.2%	0
GP-06 2-6	137%	111%	0

LCS/MB LIMITS                      QC LIMITS

(DCBP) = Decachlorobiphenyl                      (49-140)                      (30-164)  
(TCMX) = Tetrachlorometaxylene                      (30-135)                      (26-143)

Prep Method: SW3550B  
Log Number Range: 05-8251 to 05-8251

**ORGANICS ANALYSIS DATA SHEET**

PCB by GC/ECD Method SW8082

Page 1 of 1


Sample ID: MB-051605

METHOD BLANK

Lab Sample ID: MB-051605

LIMS ID: 05-8251

Matrix: Soil

Data Release Authorized: 

Reported: 05/18/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: NA

Date Received: NA

Date Extracted: 05/16/05

Date Analyzed: 05/17/05 18:42

Instrument/Analyst: ECD5/PK

GPC Cleanup: No

Sulfur Cleanup: Yes

Acid Cleanup: Yes

Sample Amount: 12.0 g

Final Extract Volume: 4.0 mL

Dilution Factor: 1.00

Silica Gel: No

pH: NA

Percent Moisture: NA

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**PCB Surrogate Recovery**

Decachlorobiphenyl	117%
Tetrachlorometaxylene	78.5%

**ORGANICS ANALYSIS DATA SHEET**  
 PCB by GC/ECD Method SW8082  
 Page 1 of 1

Sample ID: GP-06 2-6  
**SAMPLE**

Lab Sample ID: IB06D  
 LIMS ID: 05-8251  
 Matrix: Soil  
 Data Release Authorized:  
 Reported: 05/18/05

QC Report No: IB06-Geomatrix Consultants  
 Project: SPI Everett  
 10360  
 Date Sampled: 05/11/05  
 Date Received: 05/12/05

Date Extracted: 05/16/05  
 Date Analyzed: 05/17/05 20:07  
 Instrument/Analyst: ECD5/PK  
 GPC Cleanup: No  
 Sulfur Cleanup: Yes  
 Acid Cleanup: Yes

Sample Amount: 9.60 g-dry-wt  
 Final Extract Volume: 4.0 mL  
 Dilution Factor: 1.00  
 Silica Gel: No  
 pH: 6.5  
 Percent Moisture: 20.3%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	42	< 42 U
53469-21-9	Aroclor 1242	42	< 42 U
12672-29-6	Aroclor 1248	42	< 42 U
11097-69-1	Aroclor 1254	42	37 J
11096-82-5	Aroclor 1260	42	< 42 U
11104-28-2	Aroclor 1221	42	< 42 U
11141-16-5	Aroclor 1232	42	< 42 U

Reported in  $\mu\text{g/kg}$  (ppb)

**PCB Surrogate Recovery**

Decachlorobiphenyl	137%
Tetrachlorometaxylene	111%

ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082  
Page 1 of 1

Sample ID: LCS-051605  
LCS/LCSD

Lab Sample ID: LCS-051605  
LIMS ID: 05-8251  
Matrix: Soil  
Data Release Authorized: *AS*  
Reported: 05/18/05

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: NA  
Date Received: NA

Date Extracted LCS/LCSD: 05/16/05

Sample Amount LCS: 12.0 g-dry-wt  
LCSD: 12.0 g-dry-wt

Date Analyzed LCS: 05/17/05 18:59  
LCSD: 05/17/05 19:16

Final Extract Volume LCS: 4.0 mL  
LCSD: 4.0 mL

Instrument/Analyst LCS: ECD5/PK  
LCSD: ECD5/PK

Dilution Factor LCS: 1.00  
LCSD: 1.00

GPC Cleanup: No  
Sulfur Cleanup: Yes  
Acid Cleanup: Yes

Silica Gel: No  
pH: NA  
Percent Moisture: NA

Analyte	Spike		LCS		Spike		LCSD		RPD
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	LCSD		
Aroclor 1016	130	167	78.0%	143	167	85.8%	9.5%		
Aroclor 1260	176	167	106%	183	167	110%	3.9%		

**PCB Surrogate Recovery**

	LCS	LCSD
Decachlorobiphenyl	111%	110%
Tetrachlorometaxylene	90.2%	90.2%

Results reported in  $\mu\text{g}/\text{kg}$  (ppb)  
RPD calculated using sample concentrations per SW846.

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
051905MBS	84.0%	0
051905LCS	72.4%	0
GP-06 2-6	86.9%	0
GP-04 2-6	82.9%	0

LCS/MB LIMITS . QC LIMITS

(OTER) = o-Terphenyl


(39-134)

(26-128)

Prep Method: SW3550B  
Log Number Range: 05-8251 to 05-8252

ORGANICS ANALYSIS DATA SHEET  
TOTAL DIESEL RANGE HYDROCARBONS  
NWTPHD by GC/FID  
Page 1 of 1  
Matrix: Soil

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Received: 05/12/05

Data Release Authorized:   
Reported: 05/23/05

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-051905 05-8251	Method Blank HC ID: ---	05/19/05	05/20/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 5.0 U < 10 U 84.0%
IB06D 05-8251	GP-06 2-6 HC ID: DRO/RRO	05/19/05	05/20/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	38 93 86.9%
IB06E 05-8252	GP-04 2-6 HC ID: ---	05/19/05	05/20/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 6.2 U < 12 U 82.9%

Reported in mg/kg (ppm)

Diesel quantitation on total peaks in the range from C12 to C24.  
Motor Oil quantitation on total peaks in the range from C24 to C38.  
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.



ORGANICS ANALYSIS DATA SHEET  
NWTPHD by GC/FID  
Page 1 of 1

Sample ID: LCS-051905  
LAB CONTROL

Lab Sample ID: LCS-051905  
LIMS ID: 05-8251  
Matrix: Soil  
Data Release Authorized:  
Reported: 05/23/05

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Date Extracted: 05/19/05  
Date Analyzed: 05/20/05 07:59  
Instrument/Analyst: FID/JGR

Sample Amount: 10.0 g  
Final Extract Volume: 1.0 mL  
Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	105	150	70.0%

TPHD Surrogate Recovery

o-Terphenyl	72.4%
-------------	-------

Results reported in mg/kg

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil  
Date Received: 05/12/05

ARI Job: IB06  
Project: SPI Everett  
10360

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
05-8251-051905MB1	Method Blank	10.0 g	1.00 mL	-	05/19/05
05-8251-051905LCS1	Lab Control	10.0 g	1.00 mL	-	05/19/05
05-8251-IB06D	GP-06 2-6	8.00 g	1.00 mL	D	05/19/05
05-8252-IB06E	GP-04 2-6	8.05 g	1.00 mL	D	05/19/05



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-09 5-8

SAMPLE

Lab Sample ID: IB06A

LIMS ID: 05-8248

Matrix: Soil

Data Release Authorized: *[Signature]*  
Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: 05/11/05

Date Received: 05/12/05

Percent Total Solids: 89.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/17/05	6010B	05/23/05	7440-38-2	Arsenic	5	22	
3050B	05/17/05	6010B	05/23/05	7440-43-9	Cadmium	0.2	0.2	U
3050B	05/17/05	6010B	05/23/05	7440-47-3	Chromium	0.5	28.6	
3050B	05/17/05	6010B	05/23/05	7440-50-8	Copper	0.2	24.8	
3050B	05/17/05	6010B	05/23/05	7439-92-1	Lead	2	5	
3050B	05/17/05	6010B	05/23/05	7440-66-6	Zinc	0.6	44.3	

U-Analyte undetected at given RL

RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: GP-09 5-8

DUPLICATE

Lab Sample ID: IB06A

LIMS ID: 05-8248

Matrix: Soil

Data Release Authorized: *au*

Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: 05/11/05

Date Received: 05/12/05

**MATRIX DUPLICATE QUALITY CONTROL REPORT**

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010B	22	24	8.7%	+/- 5	L
Cadmium	6010B	0.2 U	0.2 U	0.0%	+/- 0.2	L
Chromium	6010B	28.6	29.5	3.1%	+/- 20%	
Copper	6010B	24.8	24.9	0.4%	+/- 20%	
Lead	6010B	5	5	0.0%	+/- 2	L
Zinc	6010B	44.3	44.1	0.5%	+/- 20%	

Reported in mg/kg-dry

\*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-09 5-8

MATRIX SPIKE

Lab Sample ID: IB06A

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8248

Project: SPI Everett

Matrix: Soil

10360

Data Release Authorized: *DC*

Date Sampled: 05/11/05

Reported: 05/25/05

Date Received: 05/12/05

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010B	22	236	209	102%	
Cadmium	6010B	0.2 U	51.4	52.2	98.5%	
Chromium	6010B	28.6	88.6	52.2	115%	
Copper	6010B	24.8	81.5	52.2	109%	
Lead	6010B	5	211	209	98.6%	
Zinc	6010B	44.3	93.4	52.2	94.1%	

Reported in mg/kg-dry

N-Control Limit Not Met

H-% Recovery Not Applicable, Sample Concentration Too High

NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1

Sample ID: GP-10 7-9

SAMPLE

Lab Sample ID: IB06B

LIMS ID: 05-8249

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: 05/11/05

Date Received: 05/12/05

Percent Total Solids: 86.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/17/05	6010B	05/23/05	7440-38-2	Arsenic	6	16	
3050B	05/17/05	6010B	05/23/05	7440-43-9	Cadmium	0.2	0.2	U
3050B	05/17/05	6010B	05/23/05	7440-47-3	Chromium	0.6	25.3	
3050B	05/17/05	6010B	05/23/05	7440-50-8	Copper	0.2	23.1	
3050B	05/17/05	6010B	05/23/05	7439-92-1	Lead	2	10	
3050B	05/17/05	6010B	05/23/05	7440-66-6	Zinc	0.7	43.9	

U-Analyte undetected at given RL

RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**  
Page 1 of 1

Sample ID: GP-11 4-7  
SAMPLE

Lab Sample ID: IB06C

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8250

Project: SPI Everett

Matrix: Soil

10360

Data Release Authorized: *[Signature]*

Date Sampled: 05/11/05

Reported: 05/25/05

Date Received: 05/12/05

Percent Total Solids: 83.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/17/05	6010B	05/23/05	7440-38-2	Arsenic	6	51	
3050B	05/17/05	6010B	05/23/05	7440-43-9	Cadmium	0.2	0.2	U
3050B	05/17/05	6010B	05/23/05	7440-47-3	Chromium	0.6	27.8	
3050B	05/17/05	6010B	05/23/05	7440-50-8	Copper	0.2	21.1	
3050B	05/17/05	6010B	05/23/05	7439-92-1	Lead	2	22	
3050B	05/17/05	6010B	05/23/05	7440-66-6	Zinc	0.7	48.6	

U-Analyte undetected at given RL  
RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1

Sample ID: GP-06 2-6

SAMPLE

Lab Sample ID: IB06D

LIMS ID: 05-8251

Matrix: Soil

Data Release Authorized *BL*

Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: 05/11/05

Date Received: 05/12/05

Percent Total Solids: 74.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/17/05	6010B	05/23/05	7440-38-2	Arsenic	6	17	
3050B	05/17/05	6010B	05/23/05	7440-43-9	Cadmium	0.3	0.3	U
3050B	05/17/05	6010B	05/23/05	7440-47-3	Chromium	0.6	25.1	
3050B	05/17/05	6010B	05/23/05	7440-50-8	Copper	0.3	45.4	
3050B	05/17/05	6010B	05/23/05	7439-92-1	Lead	3	48	
3050B	05/17/05	6010B	05/23/05	7440-66-6	Zinc	0.8	86.7	

U-Analyte undetected at given RL

RL-Reporting Limit



**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1

Sample ID: GP-04 2-6

SAMPLE

Lab Sample ID: IB06E

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8252

Project: SPI Everett

Matrix: Soil

10360

Data Release Authorized *BL*

Date Sampled: 05/11/05

Reported: 05/25/05

Date Received: 05/12/05

Percent Total Solids: 81.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/17/05	6010B	05/23/05	7440-38-2	Arsenic	6	40	
3050B	05/17/05	6010B	05/23/05	7440-43-9	Cadmium	0.2	0.2	U
3050B	05/17/05	6010B	05/23/05	7440-47-3	Chromium	0.6	30.5	
3050B	05/17/05	6010B	05/23/05	7440-50-8	Copper	0.2	28.5	
3050B	05/17/05	6010B	05/23/05	7439-92-1	Lead	2	52	
3050B	05/17/05	6010B	05/23/05	7440-66-6	Zinc	0.7	79.0	

U-Analyte undetected at given RL

RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: GP-05 4-6

SAMPLE

Lab Sample ID: IB06F

LIMS ID: 05-8253

Matrix: Soil

Data Release Authorized: *gc*

Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: 05/11/05

Date Received: 05/12/05

Percent Total Solids: 79.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/17/05	6010B	05/23/05	7440-38-2	Arsenic	6	6	
3050B	05/17/05	6010B	05/23/05	7440-43-9	Cadmium	0.2	0.2	U
3050B	05/17/05	6010B	05/23/05	7440-47-3	Chromium	0.6	28.2	
3050B	05/17/05	6010B	05/23/05	7440-50-8	Copper	0.2	20.1	
3050B	05/17/05	6010B	05/23/05	7439-92-1	Lead	2	5	
3050B	05/17/05	6010B	05/23/05	7440-66-6	Zinc	0.7	41.9	

U-Analyte undetected at given RL

RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1

Sample ID: GP-09 S

SAMPLE

Lab Sample ID: IB06G

LIMS ID: 05-8254

Matrix: Water

Data Release Authorized *[Signature]*

Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: 05/11/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/20/05	7440-38-2	Arsenic	2	836	
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/19/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.5	U
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL

RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: GP-09 S

DUPLICATE

Lab Sample ID: IB06G

LIMS ID: 05-8254

Matrix: Water

Data Release Authorized: *BA*

Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: 05/11/05

Date Received: 05/12/05

**MATRIX DUPLICATE QUALITY CONTROL REPORT**

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	836	839	0.4%	+/- 20%	
Cadmium	200.8	0.2 U	0.2 U	0.0%	+/- 0.2	L
Chromium	200.8	0.5 U	0.5 U	0.0%	+/- 0.5	L
Copper	200.8	0.5 U	0.5 U	0.0%	+/- 0.5	L
Lead	200.8	1 U	1 U	0.0%	+/- 1	L
Zinc	200.8	4 U	4 U	0.0%	+/- 4	L

Reported in µg/L

\*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: GP-09 S

MATRIX SPIKE

Lab Sample ID: IB06G

LIMS ID: 05-8254

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: 05/11/05

Date Received: 05/12/05

**MATRIX SPIKE QUALITY CONTROL REPORT**

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	836	856	25.0	80.0%	H
Cadmium	200.8	0.200 U	23.9	25.0	95.6%	
Chromium	200.8	0.500 U	19.3	25.0	77.2%	
Copper	200.8	0.500 U	23.2	25.0	92.8%	
Lead	200.8	1.00 U	25.3	25.0	101%	
Zinc	200.8	4.00 U	73.0	80.0	91.2%	

Reported in µg/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%

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1


Sample ID: GP-09 D

SAMPLE

Lab Sample ID: IB06H

LIMS ID: 05-8255

Matrix: Water

Data Release Authorized: 

Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: 05/11/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	1.8	
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/20/05	7440-47-3	Chromium	1	11	
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.5	U
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL

RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: GP-10 S

SAMPLE

Lab Sample ID: IB06I

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8256

Project: SPI Everett

Matrix: Water

10360

Data Release Authorized *DL*

Date Sampled: 05/11/05

Reported: 05/25/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	59.3	
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/19/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	1.1	
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL

RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1

Sample ID: GP-10 D

SAMPLE

Lab Sample ID: IB06J

LIMS ID: 05-8257

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: 05/11/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	6.6	
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/19/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	1.0	
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL

RL-Reporting Limit



**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS  
Page 1 of 1

Sample ID: GP-11 S  
SAMPLE

Lab Sample ID: IB06K

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8258

Project: SPI Everett

Matrix: Water

10360

Data Release Authorized: *JK*

Date Sampled: 05/11/05

Reported: 05/25/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	53.2	
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/19/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	2.3	
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL  
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-11 D

SAMPLE

Lab Sample ID: IB06L

LIMS ID: 05-8259

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: 05/11/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/19/05	7440-38-2	Arsenic	0.5	1.2	
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/19/05	7440-47-3	Chromium	0.5	0.9	
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.5	U
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL  
RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS  
Page 1 of 1

Sample ID: RIVER 5/11/05  
SAMPLE

Lab Sample ID: IB06M  
LIMS ID: 05-8260  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
3010A	05/18/05	6010B	05/23/05	7440-70-2	Calcium	50	38,900	
3010A	05/18/05	6010B	05/23/05	7439-95-4	Magnesium	50	115,000	

Calculated Hardness (mg-CaCO3/L): 570

U-Analyte undetected at given RL  
RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-06 S  
SAMPLE

Lab Sample ID: IB06N

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8261

Project: SPI Everett

Matrix: Water

10360

Data Release Authorized: *BC*

Date Sampled: 05/11/05

Reported: 05/25/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/20/05	7440-38-2	Arsenic	0.2	4.8	
200.8	05/18/05	200.8	05/20/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/23/05	7440-47-3	Chromium	1	1	U
200.8	05/18/05	200.8	05/20/05	7440-50-8	Copper	0.5	0.8	
200.8	05/18/05	200.8	05/20/05	7439-92-1	Lead	1	1	U
200.8	05/18/05	200.8	05/20/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL  
RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: GP-06 D

SAMPLE

Lab Sample ID: IB060

LIMS ID: 05-8262

Matrix: Water

Data Release Authorized *M*

Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: 05/11/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	2.3	
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/20/05	7440-47-3	Chromium	0.5	4.0	
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.7	
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-04 S

SAMPLE

Lab Sample ID: IB06P

LIMS ID: 05-8263

Matrix: Water

Data Release Authorized: *gc*

Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: 05/11/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/20/05	7440-38-2	Arsenic	1	420	
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/20/05	7440-47-3	Chromium	0.5	0.6	
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.6	
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL  
RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: GP-04 D

SAMPLE

Lab Sample ID: IB06Q

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8264

Project: SPI Everett

Matrix: Water

10360

Data Release Authorized *[Signature]*

Date Sampled: 05/11/05

Reported: 05/25/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	2.8	
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/20/05	7440-47-3	Chromium	0.5	4.7	
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.6	
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL

RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-04 DD  
SAMPLE

Lab Sample ID: IB06R

LIMS ID: 05-8265

Matrix: Water

Data Release Authorized *JK*  
Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett  
10360

Date Sampled: 05/11/05  
Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	1.1	
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/19/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.5	U
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL  
RL-Reporting Limit



**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: GP-05 S

SAMPLE

Lab Sample ID: IB06S

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8266

Project: SPI Everett

Matrix: Water

10360

Data Release Authorized *[Signature]*

Date Sampled: 05/11/05

Reported: 05/25/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	-Q
200.8	05/18/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	17.8	
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/20/05	7440-47-3	Chromium	0.5	3.8	
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	6.2	
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	3	
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	15	

U-Analyte undetected at given RL  
RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: GP-05 D

SAMPLE

Lab Sample ID: IB06T

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8267

Project: SPI Everett

Matrix: Water

10360

Data Release Authorized: *JK*

Date Sampled: 05/11/05

Reported: 05/25/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	1.4	
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/20/05	7440-47-3	Chromium	0.5	3.7	
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	2.0	
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL  
RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: MW-102S

SAMPLE

Lab Sample ID: IB06U

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8268

Project: SPI Everett

Matrix: Water

10360

Data Release Authorized *JAC*

Date Sampled: 05/12/05

Reported: 05/25/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	1.6	
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/19/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.7	
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	5	

U-Analyte undetected at given RL

RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1

Sample ID: MW104 S

SAMPLE

Lab Sample ID: IB06V

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8269

Project: SPI Everett

Matrix: Water

10360

Data Release Authorized: *[Signature]*

Date Sampled: 05/12/05

Reported: 05/25/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	0.4	
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/18/05	200.8	05/19/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	2.0	
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL  
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Sample ID: METHOD BLANK

Page 1 of 1

Lab Sample ID: IB06MB

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8249

Project: SPI Everett

Matrix: Soil

10360

Data Release Authorized: *DR*

Date Sampled: NA

Reported: 05/25/05

Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/17/05	6010B	05/23/05	7440-38-2	Arsenic	5	5	U
3050B	05/17/05	6010B	05/23/05	7440-43-9	Cadmium	0.2	0.2	U
3050B	05/17/05	6010B	05/23/05	7440-47-3	Chromium	0.5	0.5	U
3050B	05/17/05	6010B	05/23/05	7440-50-8	Copper	0.2	0.2	U
3050B	05/17/05	6010B	05/23/05	7439-92-1	Lead	2	2	U
3050B	05/17/05	6010B	05/23/05	7440-66-6	Zinc	0.6	0.6	U

U-Analyte undetected at given RL

RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: IB06LCS

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8249

Project: SPI Everett

Matrix: Soil

10360

Data Release Authorized: *[Signature]*

Date Sampled: NA

Reported: 05/25/05

Date Received: NA

**BLANK SPIKE QUALITY CONTROL REPORT**

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010B	211	200	106%	
Cadmium	6010B	50.9	50.0	102%	
Chromium	6010B	50.1	50.0	100%	
Copper	6010B	50.1	50.0	100%	
Lead	6010B	205	200	102%	
Zinc	6010B	50.0	50.0	100%	

Reported in mg/kg-dry

N-Control limit not met

Control Limits: 80-120%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: IB06MB

LIMS ID: 05-8255

Matrix: Water

Data Release Authorized: *Dr*

Reported: 05/25/05

QC Report No: IB06-Geomatrix Consultants

Project: SPI Everett

10360

Date Sampled: NA

Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/18/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	0.2	U
200.8	05/18/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
3010A	05/18/05	6010B	05/23/05	7440-70-2	Calcium	50	50	U
200.8	05/18/05	200.8	05/19/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/18/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.5	U
200.8	05/18/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
3010A	05/18/05	6010B	05/23/05	7439-95-4	Magnesium	50	50	U
200.8	05/18/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

Sample ID: LAB CONTROL

TOTAL METALS

Page 1 of 1

Lab Sample ID: IB06LCS

QC Report No: IB06-Geomatrix Consultants

LIMS ID: 05-8255

Project: SPI Everett

Matrix: Water

10360

Data Release Authorized: *AL*

Date Sampled: NA

Reported: 05/25/05

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	25.3	25.0	101%	
Cadmium	200.8	24.5	25.0	98.0%	
Calcium	6010B	10400	10000	104%	
Chromium	200.8	25.2	25.0	101%	
Copper	200.8	25.5	25.0	102%	
Lead	200.8	25.8	25.0	103%	
Magnesium	6010B	10800	10000	108%	
Zinc	200.8	77.4	80.0	96.8%	

Reported in µg/L

N-Control limit not met

Control Limits: 80-120%



SAMPLE RESULTS-CONVENTIONALS  
IB06-Geomatrix Consultants



Matrix: Water  
Data Release Authorized: *BC*  
Reported: 05/17/05

Project: SPI Everett  
Event: 10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Client ID: GP-10 S  
ARI ID: 05-8256 IB06I

Analyte	Date Batch	Method	Units	RL	Sample
Total Suspended Solids	05/13/05 051305#1	EPA 160.2	mg/L	10.0	409

RL Analytical reporting limit  
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS  
IB06-Geomatrix Consultants



Matrix: Water  
Data Release Authorized *JL*  
Reported: 05/17/05

Project: SPI Everett  
Event: 10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Client ID: GP-10 D  
ARI ID: 05-8257 IB06J

Analyte	Date Batch	Method	Units	RL	Sample
Total Suspended Solids	05/13/05 051305#1	EPA 160.2	mg/L	33.3	4,000

RL Analytical reporting limit  
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS  
IB06-Geomatrix Consultants



Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/17/05

Project: SPI Everett  
Event: 10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Client ID: GP-11 S  
ARI ID: 05-8258 IB06K

Analyte	Date Batch	Method	Units	RL	Sample
Total Suspended Solids	05/13/05 051305#1	EPA 160.2	mg/L	1.1	6.6

RL Analytical reporting limit  
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS  
IB06-Geomatrix Consultants



Matrix: Water  
Data Release Authorized: *JL*  
Reported: 05/17/05

Project: SPI Everett  
Event: 10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Client ID: GP-11 D  
ARI ID: 05-8259 IB06L

Analyte	Date Batch	Method	Units	RL	Sample
Total Suspended Solids	05/13/05 051305#1	EPA 160.2	mg/L	10.0	1,380

RL Analytical reporting limit  
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS  
IB06-Geomatrix Consultants



Matrix: Water  
Data Release Authorized *[Signature]*  
Reported: 05/17/05

Project: SPI Everett  
Event: 10360  
Date Sampled: 05/12/05  
Date Received: 05/12/05

Client ID: MW-102S  
ARI ID: 05-8268 IB06U

Analyte	Date Batch	Method	Units	RL	Sample
Total Suspended Solids	05/13/05 051305#1	EPA 160.2	mg/L	1.1	4.6

RL Analytical reporting limit  
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS  
IB06-Geomatrix Consultants



Matrix: Water  
Data Release Authorized: *gjc*  
Reported: 05/17/05

Project: SPI Everett  
Event: 10360  
Date Sampled: NA  
Date Received: NA

Analyte	Date	Units	Blank
Total Suspended Solids	05/13/05	mg/L	< 1.0 U

LAB CONTROL RESULTS--CONVENTIONALS  
IB06-Geomatrix Consultants



Matrix: Water  
Data Release Authorized *[Signature]*  
Reported: 05/17/05

Project: SPI Everett  
Event: 10360  
Date Sampled: NA  
Date Received: NA

Analyte	Date	Units	LCS	Spike Added	Recovery
Total Suspended Solids	05/13/05	mg/L	49.9	50.0	99.8%

REPLICATE RESULTS-CONVENTIONALS  
IB06-Geomatrix Consultants



Matrix: Water  
Data Release Authorized *[Signature]*  
Reported: 05/17/05

Project: SPI Everett  
Event: 10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: IB06I Client ID: GP-10 S					
Total Suspended Solids	05/13/05	mg/L	409	458	11.3%





## Data Reporting Qualifiers

Effective 12/28/04

### 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  $\geq$  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  $\leq 5$  times the Reporting Limit and the replicate control limit defaults to  $\pm 1$  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
- NR Spiked compound recovery is not reported due to chromatographic interference
- 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.
- 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
- 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
- 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.
- 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  $\geq 40\%$  RPD with no obvious chromatographic interference

### Geotechnical Data

- 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
- F Samples were frozen prior to particle size determination





**Analytical Resources, Incorporated**

Analytical Chemists and Consultants  
May 25, 2005

Joe Morrice  
GeoMatrix Consultants  
600 University, Suite 1020  
Seattle, WA 98101

**RE: Project: SPI Everett**  
**ARI Job No: IB04**

Dear Joe:

Please find enclosed a sample custody record (COC) and a set of analytical results for the samples from the project referenced above. Analytical Resources, Inc. accepted five soil samples and ten water samples in good condition on May 12, 2005.

Selected samples were analyzed for PAH, PCB, NWTPH-Dx, and total metals, as requested on the COC.

Please refer to the case narrative for anomalies associated with these samples.

Copies of these reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

*Stephanie Lucas*  
Stephanie Lucas  
Project Manager  
steph@arilabs.com  
(206) 695-6213

# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **LB04**  
 Turn-around Requested: **STD**  
 ARI Client Company: **GEOMATIX**  
 Phone: **206-342-1760**  
 Client Contact: **JOE MARICE**  
 Client Project Name: **SPI EVERET**  
 Client Project #: **10360**  
 Samplers: **SN**

Page: **1** of **5**  
 Date: **5-10-05** Ice Present? **Y**  
 No. of Coolers: **3** Cooler Temps: **3.5, 4.0, 6.0**



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	Analysis Requested			Notes/Comments
					PCBs	PAHs	Other	
GA-01	5-10	930	S	1	X			
GP-01 S		945	W	1	X			
GP-01 D		1030	W	1	X			
GP-02 1-10		1115	S	1	X			
GP-02 S		1125	W	1	X			
GP-02 D		1200	W	1	X			
GP-03 2-9		1240	S	1	X			
GP-03 S		1255	W	1	X			
GP-03 D		1400	W	1	X			
GP-07 4-12		1455	S	1	X			
Comments/Special Instructions					Received by: (Signature) <i>[Signature]</i>	Reinquired by: (Signature) <i>[Signature]</i>	Notes/Comments	
					Printed Name: <b>Joe Marice</b>	Printed Name:		
					Company: <b>ARI</b>	Company:		
					Date & Time: <b>5-12-05 1416</b>	Date & Time:		

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

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

# Chain of Custody Record & Laboratory Analysis Request

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



Page: 2 of 5  
 Date: 5-20-05  
 No. of Coolers: 3  
 Cooler Temps: 3.5, 4.0, 6.0  
 Ice Present?   
 Analysis Requested: METALS, PCBs, PAHs

ARI Assigned Number: STD  
 Turn-around Requested: 206-742-1760  
 Phone: Joe Moravics  
 Client Company: GEORGINIA  
 Client Contact: Joe Moravics  
 Client Project Name: SPT Everett  
 Client Project #: 10360  
 Samplers: INM

Sample ID	Date	Time	Matrix	No. Containers	Relinquished by (Signature)	Relinquished by (Printed Name)	Relinquished by (Company)	Received by (Signature)	Received by (Printed Name)	Received by (Company)	Notes/Comments
GP-07 S	5-20	1520	W	1	[Signature]	Brian Kincaid	ARI	[Signature]	Brian Kincaid	ARI	
GP-07 D	5-20	1550	W	1	[Signature]	Brian Kincaid	ARI	[Signature]	Brian Kincaid	ARI	
GP-08 6-11	5-20	1620	S	2	[Signature]	Brian Kincaid	ARI	[Signature]	Brian Kincaid	ARI	
GP-08 S	5-20	1640	W	1	[Signature]	Brian Kincaid	ARI	[Signature]	Brian Kincaid	ARI	
GP-08 D	5-20	1720	W	1	[Signature]	Brian Kincaid	ARI	[Signature]	Brian Kincaid	ARI	

**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.



Case Narrative  
SPI Everett  
ARI Job: IB04  
May 25, 2005

PAH by 8270C

The soil samples were screened prior to extraction on 5/18/05. The samples were analyzed on 5/19/05 within the method recommended holding time

**Surrogates:** All surrogate recoveries were within ARI calculated control limits.

**Method Blank:** The method blank was free of analytes of interest.

**Samples:** No anomalies were associated with these samples.

**LCS/LCSD (s):** All percent recoveries and RPDs were within control limits.

PCBs by 8082

The soil samples were screened prior to extraction on 5/16/05. The samples were analyzed on 5/17/05 within the method recommended holding time

**Surrogates:** All surrogate recoveries were within ARI calculated control limits.

**Method Blank:** The method blank was free of analytes of interest.

**Samples:** Aroclor 1254 is "J" flagged in sample GP-07 4-12. The "J" indicates an estimated concentration when the value is less than ARI's established reporting limit(s).

No other anomalies were associated with these samples.

**LCS/LCSD (s):** All percent recoveries and RPDs were within control limits.

NWTWPH-Dx

The soil samples were extracted on 5/13/05. The samples were analyzed on 5/16/05 within the method recommended holding time

**Surrogates:** All surrogate recoveries were within ARI calculated control limits.

**Method Blank:** The method blank was free of analytes of interest.

**Samples:** Sample GP-07 4-12 was analyzed at a 10X dilution. No anomalies were associated with these samples.

**LCS/LCSD (s):** All percent recoveries and RPDs were within control limits.



Case Narrative  
SPI Everett  
ARI Job: IB04  
May 25, 2005

**Total Metals by 6010B**

The samples were prepped on 5/16/05. The samples were analyzed between 5/19/05 and 5/23/05 within the method recommended holding time.

**Method Blank:** The method blanks were free of contamination.

**Samples:** No anomalies were associated with these samples.

**LCS/Spike Blank:** All percent recoveries were in control.



SW8270 PNA SURROGATE RECOVERY SUMMARY



Matrix: Soil

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360

Client ID	TER	FBP	TOT OUT
MB-051805	83.2%	67.2%	0
LCS-051805	79.6%	65.6%	0
LCSD-051805	76.0%	62.8%	0
GP-08 6-11	74.0%	61.2%	0

LCS/MB LIMITS      QC LIMITS

(TER) = d14-p-Terphenyl  
(FBP) = 2-Fluorobiphenyl

(50-113)      (30-123)  
(30-160)      (30-160)

Prep Method: SW3550B  
Log Number Range: 05-8234 to 05-8234

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270C GC/MS

Page 1 of 1

Sample ID: MB-051805

METHOD BLANK

Lab Sample ID: MB-051805

LIMS ID: 05-8234

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 05/23/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: NA

Date Received: NA

Date Extracted: 05/18/05

Date Analyzed: 05/19/05 11:09

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: Yes

Sample Amount: 7.50 g

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: NA

pH: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	67	< 67 U
91-57-6	2-Methylnaphthalene	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
83-32-9	Acenaphthene	67	< 67 U
86-73-7	Fluorene	67	< 67 U
85-01-8	Phenanthrene	67	< 67 U
120-12-7	Anthracene	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
56-55-3	Benzo (a) anthracene	67	< 67 U
218-01-9	Chrysene	67	< 67 U
205-99-2	Benzo (b) fluoranthene	67	< 67 U
207-08-9	Benzo (k) fluoranthene	67	< 67 U
50-32-8	Benzo (a) pyrene	67	< 67 U
193-39-5	Indeno (1, 2, 3-cd) pyrene	67	< 67 U
53-70-3	Dibenz (a, h) anthracene	67	< 67 U
191-24-2	Benzo (g, h, i) perylene	67	< 67 U
132-64-9	Dibenzofuran	67	< 67 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	83.2%
2-Fluorobiphenyl	67.2%

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270C GC/MS

Page 1 of 1

Sample ID: GP-08 6-11

SAMPLE

Lab Sample ID: IB04E

QC Report No: IB04-Geomatrix Consultants

LIMS ID: 05-8234

Project: SPI EVERETT

Matrix: Soil

10360

Data Release Authorized:

Date Sampled: 05/10/05

Reported: 05/23/05

Date Received: 05/12/05

Date Extracted: 05/18/05

Sample Amount: 6.36 g-dry-wt

Date Analyzed: 05/19/05 16:25

Final Extract Volume: 0.5 mL

Instrument/Analyst: NT6/LJR

Dilution Factor: 1.00

GPC Cleanup: No

Percent Moisture: 15.4%

Alumina: Yes

pH: 7.0

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	79	< 79 U
91-57-6	2-Methylnaphthalene	79	< 79 U
208-96-8	Acenaphthylene	79	< 79 U
83-32-9	Acenaphthene	79	< 79 U
86-73-7	Fluorene	79	< 79 U
85-01-8	Phenanthrene	79	< 79 U
120-12-7	Anthracene	79	< 79 U
206-44-0	Fluoranthene	79	< 79 U
129-00-0	Pyrene	79	< 79 U
56-55-3	Benzo (a) anthracene	79	< 79 U
218-01-9	Chrysene	79	< 79 U
205-99-2	Benzo (b) fluoranthene	79	< 79 U
207-08-9	Benzo (k) fluoranthene	79	< 79 U
50-32-8	Benzo (a) pyrene	79	< 79 U
193-39-5	Indeno (1,2,3-cd) pyrene	79	< 79 U
53-70-3	Dibenz (a,h) anthracene	79	< 79 U
191-24-2	Benzo (g,h,i) perylene	79	< 79 U
132-64-9	Dibenzofuran	79	< 79 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**Semivolatiles Surrogate Recovery**

d14-p-Terphenyl	74.0%
2-Fluorobiphenyl	61.2%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270C GC/MS

Page 1 of 1

Sample ID: LCS-051805

LCS/LCSD

Lab Sample ID: LCS-051805

LIMS ID: 05-8234

Matrix: Soil

Data Release Authorized:

Reported: 05/23/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: NA

Date Received: 05/12/05

Date Extracted LCS/LCSD: 05/18/05

Sample Amount LCS: 7.50 g

LCSD: 7.50 g

Date Analyzed LCS: 05/19/05 11:40

Final Extract Volume LCS: 0.50 mL

LCSD: 05/19/05 12:12

LCSD: 0.50 mL

Instrument/Analyst LCS: NT6/LJR

Dilution Factor LCS: 1.00

LCSD: NT6/LJR

LCSD: 1.00

GPC Cleanup: NO

Alumina Cleanup: YES

Analyte	Spike		LCS		Spike		RPD
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	
Naphthalene	973	1670	58.3%	985	1670	59.0%	1.2%
Acenaphthene	1040	1670	62.3%	1050	1670	62.9%	1.0%
Fluoranthene	1250	1670	74.9%	1240	1670	74.3%	0.8%
Benzo(a)anthracene	1220	1670	73.1%	1220	1670	73.1%	0.0%

Semivolatile Surrogate Recovery

	LCS	LCSD
d14-p-Terphenyl	79.6%	76.0%
2-Fluorobiphenyl	65.6%	62.8%

Results reported in  $\mu\text{g}/\text{kg}$

RPD calculated using sample concentrations per SW846.

SW8082/PCB SOIL/SEDIMENTS SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360

Client ID	DCBP	TCMX	TOT	OUT
MB-051605	117%	78.5%	0	
LCS-051605	111%	90.2%	0	
LCSD-051605	110%	90.2%	0	
GP-07 4-12	127%	100%	0	
GP-08 6-11	131%	94.8%	0	

LCS/MB LIMITS      QC LIMITS

(DCBP) = Decachlorobiphenyl      (49-140)      (30-164)  
(TCMX) = Tetrachlorometaxylene      (30-135)      (26-143)

Prep Method: SW3550B  
Log Number Range: 05-8233 to 05-8234

ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082  
Page 1 of 1

Sample ID: MB-051605  
METHOD BLANK

Lab Sample ID: MB-051605  
LIMS ID: 05-8233  
Matrix: Soil  
Data Release Authorized: *AS*  
Reported: 05/18/05

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: NA  
Date Received: NA

Date Extracted: 05/16/05  
Date Analyzed: 05/17/05 18:42  
Instrument/Analyst: ECD5/PK  
GPC Cleanup: No  
Sulfur Cleanup: Yes  
Acid Cleanup: Yes

Sample Amount: 12.0 g  
Final Extract Volume: 4.0 mL  
Dilution Factor: 1.00  
Silica Gel: No  
pH: NA  
Percent Moisture: NA

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**PCB Surrogate Recovery**

Decachlorobiphenyl	117%
Tetrachlorometaxylene	78.5%

ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082  
Page 1 of 1

Sample ID: GP-07 4-12  
SAMPLE

Lab Sample ID: IB04D  
LIMS ID: 05-8233  
Matrix: Soil  
Data Release Authorized:  
Reported: 05/18/05

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/10/05  
Date Received: 05/12/05

Date Extracted: 05/16/05  
Date Analyzed: 05/17/05 19:33  
Instrument/Analyst: ECD5/PK  
GPC Cleanup: No  
Sulfur Cleanup: Yes  
Acid Cleanup: Yes

Sample Amount: 10.0 g-dry-wt  
Final Extract Volume: 4.0 mL  
Dilution Factor: 1.00  
Silica Gel: No  
pH: 7.1  
Percent Moisture: 16.7%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	40	< 40 U
53469-21-9	Aroclor 1242	40	< 40 U
12672-29-6	Aroclor 1248	40	< 40 U
11097-69-1	Aroclor 1254	40	47 J
11096-82-5	Aroclor 1260	40	< 40 U
11104-28-2	Aroclor 1221	40	< 40 U
11141-16-5	Aroclor 1232	40	< 40 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	127%
Tetrachlorometaxylene	100%



ORGANICS ANALYSIS DATA SHEET  
 PCB by GC/ECD Method SW8082  
 Page 1 of 1

Sample ID: GP-08 6-11  
 SAMPLE

Lab Sample ID: IB04E  
 LIMS ID: 05-8234  
 Matrix: Soil  
 Data Release Authorized: *AS*  
 Reported: 05/18/05

QC Report No: IB04-Geomatrix Consultants  
 Project: SPI EVERETT  
 10360  
 Date Sampled: 05/10/05  
 Date Received: 05/12/05

Date Extracted: 05/16/05  
 Date Analyzed: 05/17/05 19:50  
 Instrument/Analyst: ECD5/PK  
 GPC Cleanup: No  
 Sulfur Cleanup: Yes  
 Acid Cleanup: Yes

Sample Amount: 10.2 g-dry-wt  
 Final Extract Volume: 4.0 mL  
 Dilution Factor: 1.00  
 Silica Gel: No  
 pH: 7.0  
 Percent Moisture: 15.4%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	39	< 39 U
53469-21-9	Aroclor 1242	39	< 39 U
12672-29-6	Aroclor 1248	39	< 39 U
11097-69-1	Aroclor 1254	39	< 39 U
11096-82-5	Aroclor 1260	39	< 39 U
11104-28-2	Aroclor 1221	39	< 39 U
11141-16-5	Aroclor 1232	39	< 39 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	131%
Tetrachlorometaxylene	94.8%



ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082  
Page 1 of 1

Sample ID: LCS-051605  
LCS/LCSD

Lab Sample ID: LCS-051605  
LIMS ID: 05-8233  
Matrix: Soil  
Data Release Authorized:  
Reported: 05/18/05

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: NA  
Date Received: NA

Date Extracted LCS/LCSD: 05/16/05

Sample Amount LCS: 12.0 g-dry-wt  
LCSD: 12.0 g-dry-wt

Date Analyzed LCS: 05/17/05 18:59  
LCSD: 05/17/05 19:16

Final Extract Volume LCS: 4.0 mL  
LCSD: 4.0 mL

Instrument/Analyst LCS: ECD5/PK  
LCSD: ECD5/PK

Dilution Factor LCS: 1.00  
LCSD: 1.00

GPC Cleanup: No  
Sulfur Cleanup: Yes  
Acid Cleanup: Yes

Silica Gel: No  
pH: NA

Percent Moisture: NA

Analyte	Spike		LCS		Spike		LCSD	
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	RPD	
Aroclor 1016	130	167	78.0%	143	167	85.8%	9.5%	
Aroclor 1260	176	167	106%	183	167	110%	3.9%	

PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	111%	110%
Tetrachlorometaxylene	90.2%	90.2%

Results reported in  $\mu\text{g}/\text{kg}$  (ppb)  
RPD calculated using sample concentrations per SW846.

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360

Client ID	OTER	TOF OUT
051305MBS	91.8%	0
051305LCS	86.0%	0
051305LCSD	86.9%	0
GP-07 4-12	78.7%	0
GP-08 6-11	95.6%	0

LCS/MB LIMITS      QC LIMITS

(OTER) = o-Terphenyl

(39-134)

(26-128)

Prep Method: SW3550B  
Log Number Range: 05-8233 to 05-8234

ORGANICS ANALYSIS DATA SHEET  
TOTAL DIESEL RANGE HYDROCARBONS  
NWTPHD by GC/FID  
Page 1 of 1  
Matrix: Soil

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Received: 05/12/05

Data Release Authorized: *BB*  
Reported: 05/17/05

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-051305 05-8233	Method Blank HC ID: ---	05/13/05	05/16/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 5.0 U < 10 U 91.8%
IB04D 05-8233	GP-07 4-12 HC ID: DRO/MOTOR OIL	05/13/05	05/16/05 FID3A	10	Diesel Motor Oil o-Terphenyl	80 590 78.7%
IB04E 05-8234	GP-08 6-11 HC ID: RRO	05/13/05	05/16/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 5.9 U 12 95.6%

Reported in mg/kg (ppm)

Diesel quantitation on total peaks in the range from C12 to C24.  
Motor Oil quantitation on total peaks in the range from C24 to C38.  
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID  
Page 1 of 1

Sample ID: LCS-051305  
LCS/LCSD

Lab Sample ID: LCS-051305  
LIMS ID: 05-8233  
Matrix: Soil  
Data Release Authorized:  
Reported: 05/17/05

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/10/05  
Date Received: 05/12/05

Date Extracted LCS/LCSD: 05/13/05

Sample Amount LCS: 10.0 g  
LCSD: 10.0 g

Date Analyzed LCS: 05/16/05 22:05  
LCSD: 05/16/05 22:20

Final Extract Volume LCS: 1.0 mL  
LCSD: 1.0 mL

Instrument/Analyst LCS: FID/JGR  
LCSD: FID/JGR

Dilution Factor LCS: 1.00  
LCSD: 1.00

Range	Spike		LCS		Spike		LCSD		RPD
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	LCSD		
Diesel	127	150	84.7%	127	150	84.7%	0.0%		

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	86.0%	86.9%

Results reported in mg/kg  
RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil  
Date Received: 05/12/05

ARI Job: IB04  
Project: SPI EVERETT  
10360

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
05-8233-051305MB1	Method Blank	10.0 g	1.00 mL	-	05/13/05
05-8233-051305LCS1	Lab Control	10.0 g	1.00 mL	-	05/13/05
05-8233-051305LCSD1	Lab Control Dup	10.0 g	1.00 mL	-	05/13/05
05-8233-IB04D	GP-07 4-12	8.35 g	1.00 mL	D	05/13/05
05-8234-IB04E	GP-08 6-11	8.49 g	1.00 mL	D	05/13/05

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: GP-01 1-10  
SAMPLE

Lab Sample ID: IB04A

LIMS ID: 05-8230

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

Percent Total Solids: 83.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/16/05	6010B	05/19/05	7440-38-2	Arsenic	6	31	
3050B	05/16/05	6010B	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
3050B	05/16/05	6010B	05/19/05	7440-47-3	Chromium	0.6	28.8	
3050B	05/16/05	6010B	05/19/05	7440-50-8	Copper	0.2	24.3	
3050B	05/16/05	6010B	05/19/05	7439-92-1	Lead	2	36	
3050B	05/16/05	6010B	05/19/05	7440-66-6	Zinc	0.7	87.5	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-01 1-10

DUPLICATE

Lab Sample ID: IB04A

LIMS ID: 05-8230

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010B	31	29	6.7%	+/- 6	L
Cadmium	6010B	0.2 U	0.2 U	0.0%	+/- 0.2	L
Chromium	6010B	28.8	31.2	8.0%	+/- 20%	
Copper	6010B	24.3	24.9	2.4%	+/- 20%	
Lead	6010B	36	30	18.2%	+/- 20%	
Zinc	6010B	87.5	67.4	26.0%	+/- 20%	*

Reported in mg/kg-dry

\*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit



**Analytical Resources, Incorporated**

Analytical Chemists and Consultants  
May 25, 2005

Joe Morrice  
GeoMatrix Consultants  
600 University, Suite 1020  
Seattle, WA 98101

**RE: Project: SPI Everett**  
**ARI Job No: IB04**

Dear Joe:

Please find enclosed a sample custody record (COC) and a set of analytical results for the samples from the project referenced above. Analytical Resources, Inc. accepted five soil samples and ten water samples in good condition on May 12, 2005.

Selected samples were analyzed for PAH, PCB, NWTPH-Dx, and total metals, as requested on the COC.

Please refer to the case narrative for anomalies associated with these samples.

Copies of these reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

*Stephanie Lucas*  
Stephanie Lucas  
Project Manager  
steph@arilabs.com  
(206) 695-6213



# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **1804** Turn-around Requested: **STD** Page: **1** of **5**

ARI Client Company: **GRONITRIX** Phone: **206-342-1760** Date: **5-10-05** Ice Present? **Y**

Client Contact: **JOE MARCELE** Client Project Name: **SPI ENERGY** No. of Coolers: **3** Cooler Temps: **3.5, 4.0, 6.0**

Client Project #: **10360** Samplers: **SAM**



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	Analysis Requested			Notes/Comments
					PCBs	TRH-Dx	METALS	
GA-01	5-10	930	S	1	X			
GP-01 S		945	W	1	X			
GP-01 D		1030	W	1	X			
GP-02 1-10		1115	S	1	X			
GP-02 S		1125	W	1	X			
GP-02 D		1200	W	1	X			
GP-03 2-9		1240	S	1	X			
GP-03 S		1255	W	1	X			
GP-03 D		1400	W	1	X			
GP-07 4-12		1455	S	1	X			
Relinquished by: (Signature) <i>[Signature]</i> Date & Time: <b>5/12/05</b> Relinquished by: (Signature) <i>[Signature]</i> Date & Time: <b>5/12/05</b> Printed Name: <b>SEE MANUAL</b> Printed Name: <b>BRIAN KEEL</b> Company: <b>ARI</b> Company: <b>ARI</b> Date & Time: <b>5-12-05 1416</b> Date & Time: <b>5/12/05 1416</b>								

**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.





Case Narrative

SPI Everett  
ARI Job: IB04  
May 25, 2005

PAH by 8270C

The soil samples were screened prior to extraction on 5/18/05. The samples were analyzed on 5/19/05 within the method recommended holding time

**Surrogates:** All surrogate recoveries were within ARI calculated control limits.

**Method Blank:** The method blank was free of analytes of interest.

**Samples:** No anomalies were associated with these samples.

**LCS/LCSD (s):** All percent recoveries and RPDs were within control limits.

PCBs by 8082

The soil samples were screened prior to extraction on 5/16/05. The samples were analyzed on 5/17/05 within the method recommended holding time

**Surrogates:** All surrogate recoveries were within ARI calculated control limits.

**Method Blank:** The method blank was free of analytes of interest.

**Samples:** Aroclor 1254 is "J" flagged in sample GP-07 4-12. The "J" indicates an estimated concentration when the value is less than ARI's established reporting limit(s).

No other anomalies were associated with these samples.

**LCS/LCSD (s):** All percent recoveries and RPDs were within control limits.

NWTWPH-Dx

The soil samples were extracted on 5/13/05. The samples were analyzed on 5/16/05 within the method recommended holding time

**Surrogates:** All surrogate recoveries were within ARI calculated control limits.

**Method Blank:** The method blank was free of analytes of interest.

**Samples:** Sample GP-07 4-12 was analyzed at a 10X dilution. No anomalies were associated with these samples.

**LCS/LCSD (s):** All percent recoveries and RPDs were within control limits.



**Case Narrative**

SPI Everett

ARI Job: IB04

May 25, 2005

**Total Metals by 6010B**

The samples were prepped on 5/16/05. The samples were analyzed between 5/19/05 and 5/23/05 within the method recommended holding time.

**Method Blank:** The method blanks were free of contamination.

**Samples:** No anomalies were associated with these samples.

**LCS/Spike Blank:** All percent recoveries were in control.

SW8270 PNA SURROGATE RECOVERY SUMMARY



Matrix: Soil

QC Report No: IB04-Geomatrix Consultants  
 Project: SPI EVERETT  
 10360

Client ID	TER	FBP	TOT OUT
MB-051805	83.2%	67.2%	0
LCS-051805	79.6%	65.6%	0
LCSD-051805	76.0%	62.8%	0
GP-08 6-11	74.0%	61.2%	0

	LCS/MB LIMITS	QC LIMITS
(TER) = d14-p-Terphenyl	(50-113)	(30-123)
(FBP) = 2-Fluorobiphenyl	(30-160)	(30-160)

Prep Method: SW3550B  
 Log Number Range: 05-8234 to 05-8234

**ORGANICS ANALYSIS DATA SHEET**

PNA's by SW8270C GC/MS

Page 1 of 1

Sample ID: MB-051805

METHOD BLANK

Lab Sample ID: MB-051805

LIMS ID: 05-8234

Matrix: Soil

Data Release Authorized: *AS*

Reported: 05/23/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: NA

Date Received: NA

Date Extracted: 05/18/05

Date Analyzed: 05/19/05 11:09

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: Yes

Sample Amount: 7.50 g

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: NA

pH: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	67	< 67 U
91-57-6	2-Methylnaphthalene	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
83-32-9	Acenaphthene	67	< 67 U
86-73-7	Fluorene	67	< 67 U
85-01-8	Phenanthrene	67	< 67 U
120-12-7	Anthracene	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
56-55-3	Benzo(a)anthracene	67	< 67 U
218-01-9	Chrysene	67	< 67 U
205-99-2	Benzo(b)fluoranthene	67	< 67 U
207-08-9	Benzo(k)fluoranthene	67	< 67 U
50-32-8	Benzo(a)pyrene	67	< 67 U
193-39-5	Indeno(1,2,3-cd)pyrene	67	< 67 U
53-70-3	Dibenz(a,h)anthracene	67	< 67 U
191-24-2	Benzo(g,h,i)perylene	67	< 67 U
132-64-9	Dibenzofuran	67	< 67 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**Semivolatile Surrogate Recovery**

d14-p-Terphenyl	83.2%
2-Fluorobiphenyl	67.2%

**ORGANICS ANALYSIS DATA SHEET**

PNAs by SW8270C GC/MS

Page 1 of 1

Sample ID: GP-08 6-11  
SAMPLE

Lab Sample ID: IB04E

LIMS ID: 05-8234

Matrix: Soil

Data Release Authorized:

Reported: 05/23/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

Date Extracted: 05/18/05

Date Analyzed: 05/19/05 16:25

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: Yes

Sample Amount: 6.36 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 15.4%

pH: 7.0

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	79	< 79 U
91-57-6	2-Methylnaphthalene	79	< 79 U
208-96-8	Acenaphthylene	79	< 79 U
83-32-9	Acenaphthene	79	< 79 U
86-73-7	Fluorene	79	< 79 U
85-01-8	Phenanthrene	79	< 79 U
120-12-7	Anthracene	79	< 79 U
206-44-0	Fluoranthene	79	< 79 U
129-00-0	Pyrene	79	< 79 U
56-55-3	Benzo (a) anthracene	79	< 79 U
218-01-9	Chrysene	79	< 79 U
205-99-2	Benzo (b) fluoranthene	79	< 79 U
207-08-9	Benzo (k) fluoranthene	79	< 79 U
50-32-8	Benzo (a) pyrene	79	< 79 U
193-39-5	Indeno (1,2,3-cd) pyrene	79	< 79 U
53-70-3	Dibenz (a,h) anthracene	79	< 79 U
191-24-2	Benzo (g,h,i) perylene	79	< 79 U
132-64-9	Dibenzofuran	79	< 79 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**Semivolatile Surrogate Recovery**

d14-p-Terphenyl	74.0%
2-Fluorobiphenyl	61.2%

ORGANICS ANALYSIS DATA SHEET  
PNAs by SW8270C GC/MS  
Page 1 of 1

Sample ID: LCS-051805  
LCS/LCSD

Lab Sample ID: LCS-051805  
LIMS ID: 05-8234  
Matrix: Soil  
Data Release Authorized: *[Signature]*  
Reported: 05/23/05

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: NA  
Date Received: 05/12/05

Date Extracted LCS/LCSD: 05/18/05

Sample Amount LCS: 7.50 g  
LCSD: 7.50 g

Date Analyzed LCS: 05/19/05 11:40  
LCSD: 05/19/05 12:12

Final Extract Volume LCS: 0.50 mL  
LCSD: 0.50 mL

Instrument/Analyst LCS: NT6/LJR  
LCSD: NT6/LJR

Dilution Factor LCS: 1.00  
LCSD: 1.00

GPC Cleanup: NO

Alumina Cleanup: YES

Analyte	Spike		LCS		Spike		RPD
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	
Naphthalene	973	1670	58.3%	985	1670	59.0%	1.2%
Acenaphthene	1040	1670	62.3%	1050	1670	62.9%	1.0%
Fluoranthene	1250	1670	74.9%	1240	1670	74.3%	0.8%
Benzo(a)anthracene	1220	1670	73.1%	1220	1670	73.1%	0.0%

Semivolatile Surrogate Recovery

	LCS	LCSD
d14-p-Terphenyl	79.6%	76.0%
2-Fluorobiphenyl	65.6%	62.8%

Results reported in  $\mu\text{g}/\text{kg}$   
RPD calculated using sample concentrations per SW846.



SW8082/PCB SOIL/SEDIMENTS SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360

Client ID	DCBP	TCMX	TOT	OUT
MB-051605	117%	78.5%	0	
LCS-051605	111%	90.2%	0	
LCSD-051605	110%	90.2%	0	
GP-07 4-12	127%	100%	0	
GP-08 6-11	131%	94.8%	0	

LCS/MB LIMITS      QC LIMITS

(DCBP) = Decachlorobiphenyl      (49-140)      (30-164)  
(TCMX) = Tetrachlorometaxylene      (30-135)      (26-143)

Prep Method: SW3550B  
Log Number Range: 05-8233 to 05-8234

ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082  
Page 1 of 1

Sample ID: MB-051605  
METHOD BLANK

Lab Sample ID: MB-051605  
LIMS ID: 05-8233  
Matrix: Soil  
Data Release Authorized: *AS*  
Reported: 05/18/05

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: NA  
Date Received: NA

Date Extracted: 05/16/05  
Date Analyzed: 05/17/05 18:42  
Instrument/Analyst: ECD5/PK  
GPC Cleanup: No  
Sulfur Cleanup: Yes  
Acid Cleanup: Yes

Sample Amount: 12.0 g  
Final Extract Volume: 4.0 mL  
Dilution Factor: 1.00  
Silica Gel: No  
pH: NA  
Percent Moisture: NA

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

**PCB Surrogate Recovery**

Decachlorobiphenyl	117%
Tetrachlorometaxylene	78.5%

ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082  
Page 1 of 1

Sample ID: GP-07 4-12  
SAMPLE

Lab Sample ID: IB04D  
LIMS ID: 05-8233  
Matrix: Soil  
Data Release Authorized:  
Reported: 05/18/05

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/10/05  
Date Received: 05/12/05

Date Extracted: 05/16/05  
Date Analyzed: 05/17/05 19:33  
Instrument/Analyst: ECD5/PK  
GPC Cleanup: No  
Sulfur Cleanup: Yes  
Acid Cleanup: Yes

Sample Amount: 10.0 g-dry-wt  
Final Extract Volume: 4.0 mL  
Dilution Factor: 1.00  
Silica Gel: No  
pH: 7.1  
Percent Moisture: 16.7%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	40	< 40 U
53469-21-9	Aroclor 1242	40	< 40 U
12672-29-6	Aroclor 1248	40	< 40 U
11097-69-1	Aroclor 1254	40	47 J
11096-82-5	Aroclor 1260	40	< 40 U
11104-28-2	Aroclor 1221	40	< 40 U
11141-16-5	Aroclor 1232	40	< 40 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	127%
Tetrachlorometaxylene	100%



ORGANICS ANALYSIS DATA SHEET  
 PCB by GC/ECD Method SW8082  
 Page 1 of 1

Sample ID: GP-08 6-11  
 SAMPLE

Lab Sample ID: IB04E  
 LIMS ID: 05-8234  
 Matrix: Soil  
 Data Release Authorized: *AB*  
 Reported: 05/18/05

QC Report No: IB04-Geomatrix Consultants  
 Project: SPI EVERETT  
 10360  
 Date Sampled: 05/10/05  
 Date Received: 05/12/05

Date Extracted: 05/16/05  
 Date Analyzed: 05/17/05 19:50  
 Instrument/Analyst: ECD5/PK  
 GPC Cleanup: No  
 Sulfur Cleanup: Yes  
 Acid Cleanup: Yes

Sample Amount: 10.2 g-dry-wt  
 Final Extract Volume: 4.0 mL  
 Dilution Factor: 1.00  
 Silica Gel: No  
 pH: 7.0  
 Percent Moisture: 15.4%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	39	< 39 U
53469-21-9	Aroclor 1242	39	< 39 U
12672-29-6	Aroclor 1248	39	< 39 U
11097-69-1	Aroclor 1254	39	< 39 U
11096-82-5	Aroclor 1260	39	< 39 U
11104-28-2	Aroclor 1221	39	< 39 U
11141-16-5	Aroclor 1232	39	< 39 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	131%
Tetrachlorometaxylene	94.8%

ORGANICS ANALYSIS DATA SHEET  
PCB by GC/ECD Method SW8082  
Page 1 of 1

Sample ID: LCS-051605  
LCS/LCSD

Lab Sample ID: LCS-051605  
LIMS ID: 05-8233  
Matrix: Soil  
Data Release Authorized:  
Reported: 05/18/05

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: NA  
Date Received: NA

Date Extracted LCS/LCSD: 05/16/05  
Date Analyzed LCS: 05/17/05 18:59  
LCSD: 05/17/05 19:16  
Instrument/Analyst LCS: ECD5/PK  
LCSD: ECD5/PK

Sample Amount LCS: 12.0 g-dry-wt  
LCSD: 12.0 g-dry-wt  
Final Extract Volume LCS: 4.0 mL  
LCSD: 4.0 mL  
Dilution Factor LCS: 1.00  
LCSD: 1.00  
Silica Gel: No  
pH: NA  
Percent Moisture: NA

GPC Cleanup: No  
Sulfur Cleanup: Yes  
Acid Cleanup: Yes

Analyte	Spike		LCS		Spike		LCSD	
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	RPD	
Aroclor 1016	130	167	78.0%	143	167	85.8%	9.5%	
Aroclor 1260	176	167	106%	183	167	110%	3.9%	

PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	111%	110%
Tetrachlorometaxylene	90.2%	90.2%

Results reported in µg/kg (ppb)  
RPD calculated using sample concentrations per SW846.

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: IB04-Geomatrix Consultants  
 Project: SPI EVERETT  
 10360

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
051305MBS	91.8%	0
051305LCS	86.0%	0
051305LCSD	86.9%	0
GP-07 4-12	78.7%	0
GP-08 6-11	95.6%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(OTER) = o-Terphenyl	(39-134)	(26-128)

Prep Method: SW3550B  
 Log Number Range: 05-8233 to 05-8234

ORGANICS ANALYSIS DATA SHEET  
TOTAL DIESEL RANGE HYDROCARBONS  
NWTPHD by GC/FID  
Page 1 of 1  
Matrix: Soil

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Received: 05/12/05

Data Release Authorized: *JB*  
Reported: 05/17/05

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-051305 05-8233	Method Blank HC ID: ---	05/13/05	05/16/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 5.0 U < 10 U 91.8%
IB04D 05-8233	GP-07 4-12 HC ID: DRO/MOTOR OIL	05/13/05	05/16/05 FID3A	10	Diesel Motor Oil o-Terphenyl	80 590 78.7%
IB04E 05-8234	GP-08 6-11 HC ID: RRO	05/13/05	05/16/05 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 5.9 U 12 95.6%

Reported in mg/kg (ppm)

Diesel quantitation on total peaks in the range from C12 to C24.  
Motor Oil quantitation on total peaks in the range from C24 to C38.  
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.



ORGANICS ANALYSIS DATA SHEET  
 NWTPHD by GC/FID  
 Page 1 of 1

Sample ID: LCS-051305  
 LCS/LCSD

Lab Sample ID: LCS-051305  
 LIMS ID: 05-8233  
 Matrix: Soil  
 Data Release Authorized:  
 Reported: 05/17/05

QC Report No: IB04-Geomatrix Consultants  
 Project: SPI EVERETT  
 10360  
 Date Sampled: 05/10/05  
 Date Received: 05/12/05

Date Extracted LCS/LCSD: 05/13/05  
 Date Analyzed LCS: 05/16/05 22:05  
 LCSD: 05/16/05 22:20  
 Instrument/Analyst LCS: FID/JGR  
 LCSD: FID/JGR

Sample Amount LCS: 10.0 g  
 LCSD: 10.0 g  
 Final Extract Volume LCS: 1.0 mL  
 LCSD: 1.0 mL  
 Dilution Factor LCS: 1.00  
 LCSD: 1.00

Range	Spike		LCS	LCSD	Spike		RPD
	LCS	Added-LCS	Recovery		Added-LCSD	Recovery	
Diesel	127	150	84.7%	127	150	84.7%	0.0%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	86.0%	86.9%

Results reported in mg/kg  
 RPD calculated using sample concentrations per SW846.



TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil  
Date Received: 05/12/05

ARI Job: IB04  
Project: SPI EVERETT  
10360

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
05-8233-051305MB1	Method Blank	10.0 g	1.00 mL	-	05/13/05
05-8233-051305LCS1	Lab Control	10.0 g	1.00 mL	-	05/13/05
05-8233-051305LCSD1	Lab Control Dup	10.0 g	1.00 mL	-	05/13/05
05-8233-IB04D	GP-07 4-12	8.35 g	1.00 mL	D	05/13/05
05-8234-IB04E	GP-08 6-11	8.49 g	1.00 mL	D	05/13/05

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-01 1-10

SAMPLE

Lab Sample ID: IB04A

LIMS ID: 05-8230

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

Percent Total Solids: 83.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/16/05	6010B	05/19/05	7440-38-2	Arsenic	6	31	
3050B	05/16/05	6010B	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
3050B	05/16/05	6010B	05/19/05	7440-47-3	Chromium	0.6	28.8	
3050B	05/16/05	6010B	05/19/05	7440-50-8	Copper	0.2	24.3	
3050B	05/16/05	6010B	05/19/05	7439-92-1	Lead	2	36	
3050B	05/16/05	6010B	05/19/05	7440-66-6	Zinc	0.7	87.5	

U-Analyte undetected at given RL

RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS  
Page 1 of 1

Sample ID: GP-01 1-10  
DUPLICATE

Lab Sample ID: IB04A  
LIMS ID: 05-8230  
Matrix: Soil  
Data Release Authorized: *[Signature]*  
Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/10/05  
Date Received: 05/12/05

**MATRIX DUPLICATE QUALITY CONTROL REPORT**

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010B	31	29	6.7%	+/- 6	L
Cadmium	6010B	0.2 U	0.2 U	0.0%	+/- 0.2	L
Chromium	6010B	28.8	31.2	8.0%	+/- 20%	
Copper	6010B	24.3	24.9	2.4%	+/- 20%	
Lead	6010B	36	30	18.2%	+/- 20%	
Zinc	6010B	87.5	67.4	26.0%	+/- 20%	*

Reported in mg/kg-dry

\*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-01 1-10

MATRIX SPIKE

Lab Sample ID: IB04A

LIMS ID: 05-8230

Matrix: Soil

Data Release Authorized *DR*

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010B	31	270	239	100%	
Cadmium	6010B	0.2 U	58.3	59.9	97.3%	
Chromium	6010B	28.8	87.8	59.9	98.5%	
Copper	6010B	24.3	84.9	59.9	101%	
Lead	6010B	36	263	239	95.0%	
Zinc	6010B	87.5	121	59.9	55.9%	N

Reported in mg/kg-dry

N-Control Limit Not Met

H-% Recovery Not Applicable, Sample Concentration Too High

NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS  
Page 1 of 1

Sample ID: GP-02 1-10  
SAMPLE

Lab Sample ID: IB04B


QC Report No: IB04-Geomatrix Consultants

LIMS ID: 05-8231

Project: SPI EVERETT

Matrix: Soil

10360

Data Release Authorized: 

Date Sampled: 05/10/05

Reported: 05/25/05

Date Received: 05/12/05

Percent Total Solids: 79.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/16/05	6010B	05/19/05	7440-38-2	Arsenic	6	26	
3050B	05/16/05	6010B	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
3050B	05/16/05	6010B	05/19/05	7440-47-3	Chromium	0.6	29.3	
3050B	05/16/05	6010B	05/19/05	7440-50-8	Copper	0.2	23.2	
3050B	05/16/05	6010B	05/19/05	7439-92-1	Lead	2	12	
3050B	05/16/05	6010B	05/19/05	7440-66-6	Zinc	0.7	54.9	

U-Analyte undetected at given RL

RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: GP-03 2-9  
SAMPLE

Lab Sample ID: IB04C

LIMS ID: 05-8232

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

Percent Total Solids: 75.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/16/05	6010B	05/19/05	7440-38-2	Arsenic	6	10	
3050B	05/16/05	6010B	05/19/05	7440-43-9	Cadmium	0.3	0.3	
3050B	05/16/05	6010B	05/19/05	7440-47-3	Chromium	0.6	29.0	
3050B	05/16/05	6010B	05/19/05	7440-50-8	Copper	0.3	63.7	
3050B	05/16/05	6010B	05/19/05	7439-92-1	Lead	3	44	
3050B	05/16/05	6010B	05/19/05	7440-66-6	Zinc	0.8	83.5	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: GP-07 4-12

SAMPLE

Lab Sample ID: IB04D

LIMS ID: 05-8233

Matrix: Soil

Data Release Authorized: 

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

Percent Total Solids: 84.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/16/05	6010B	05/19/05	7440-38-2	Arsenic	6	7	
3050B	05/16/05	6010B	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
3050B	05/16/05	6010B	05/19/05	7440-47-3	Chromium	0.6	31.2	
3050B	05/16/05	6010B	05/19/05	7440-50-8	Copper	0.2	42.8	
3050B	05/16/05	6010B	05/19/05	7439-92-1	Lead	2	37	
3050B	05/16/05	6010B	05/19/05	7440-66-6	Zinc	0.7	114	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-08 6-11

SAMPLE

Lab Sample ID: IB04E

LIMS ID: 05-8234

Matrix: Soil

Data Release Authorized: *ML*

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

Percent Total Solids: 86.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/16/05	6010B	05/19/05	7440-38-2	Arsenic	6	6	U
3050B	05/16/05	6010B	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
3050B	05/16/05	6010B	05/19/05	7440-47-3	Chromium	0.6	21.0	
3050B	05/16/05	6010B	05/19/05	7440-50-8	Copper	0.2	16.5	
3050B	05/16/05	6010B	05/19/05	7439-92-1	Lead	2	4	
3050B	05/16/05	6010B	05/19/05	7440-66-6	Zinc	0.7	39.3	

U-Analyte undetected at given RL

RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS  
Page 1 of 1

Sample ID: GP-01 S  
SAMPLE

Lab Sample ID: IB04F  
LIMS ID: 05-8235  
Matrix: Water  
Data Release Authorized *[Signature]*  
Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/10/05  
Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/16/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	25.2	
200.8	05/16/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/16/05	200.8	05/19/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/16/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.5	U
200.8	05/16/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/16/05	200.8	05/19/05	7440-66-6	Zinc	4	9	

U-Analyte undetected at given RL  
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-01 S

DUPLICATE

Lab Sample ID: IB04F

LIMS ID: 05-8235

Matrix: Water

Data Release Authorized: *JK*

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	25.2	26.2	3.9%	+/- 20%	
Cadmium	200.8	0.2 U	0.2 U	0.0%	+/- 0.2	L
Chromium	200.8	0.5 U	0.5 U	0.0%	+/- 0.5	L
Copper	200.8	0.5 U	0.5 U	0.0%	+/- 0.5	L
Lead	200.8	1 U	1 U	0.0%	+/- 1	L
Zinc	200.8	9	9	0.0%	+/- 4	L

Reported in µg/L

\*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET  
TOTAL METALS  
Page 1 of 1

Sample ID: GP-01 S  
MATRIX SPIKE

Lab Sample ID: IB04F  
LIMS ID: 05-8235  
Matrix: Water  
Data Release Authorized *[Signature]*  
Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: 05/10/05  
Date Received: 05/12/05

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	25.2	51.7	25.0	106%	
Cadmium	200.8	0.200 U	24.5	25.0	98.0%	
Chromium	200.8	0.500 U	22.9	25.0	91.6%	
Copper	200.8	0.500 U	24.0	25.0	96.0%	
Lead	200.8	1.00 U	25.9	25.0	104%	
Zinc	200.8	9.42	82.8	80.0	91.7%	

Reported in µg/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%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-01 D

SAMPLE

Lab Sample ID: IB04G

LIMS ID: 05-8236

Matrix: Water

Data Release Authorized *JH*

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/16/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	2.4	
200.8	05/16/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/16/05	200.8	05/23/05	7440-47-3	Chromium	1	6	
200.8	05/16/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.6	
200.8	05/16/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/16/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-02 S

SAMPLE

Lab Sample ID: IB04H


QC Report No: IB04-Geomatrix Consultants

LIMS ID: 05-8237

Project: SPI EVERETT

Matrix: Water

10360

Data Release Authorized 

Date Sampled: 05/10/05

Reported: 05/25/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/16/05	200.8	05/20/05	7440-38-2	Arsenic	10	1,220	
200.8	05/16/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/16/05	200.8	05/19/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/16/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.5	U
200.8	05/16/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/16/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-02 D

SAMPLE

Lab Sample ID: IB04I

LIMS ID: 05-8238

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/16/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	3.2	
200.8	05/16/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/16/05	200.8	05/20/05	7440-47-3	Chromium	0.5	5.5	
200.8	05/16/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.7	
200.8	05/16/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/16/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL

RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: GP-03 S

SAMPLE

Lab Sample ID: IB04J

LIMS ID: 05-8239

Matrix: Water

Data Release Authorized

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/16/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	233	
200.8	05/16/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/16/05	200.8	05/19/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/16/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.7	
200.8	05/16/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/16/05	200.8	05/19/05	7440-66-6	Zinc	4	5	

U-Analyte undetected at given RL  
RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

**TOTAL METALS**

Page 1 of 1

Sample ID: GP-03 D

SAMPLE

Lab Sample ID: IB04K

LIMS ID: 05-8240

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/16/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	3.7	
200.8	05/16/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/16/05	200.8	05/20/05	7440-47-3	Chromium	1	5	
200.8	05/16/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.6	
200.8	05/16/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/16/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL

RL-Reporting Limit





INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-07 S  
SAMPLE

Lab Sample ID: IB04L

LIMS ID: 05-8241

Matrix: Water

Data Release Authorized: *JV*

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT  
10360

Date Sampled: 05/10/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	ug/L	Q
200.8	05/16/05	200.8	05/20/05	7440-38-2	Arsenic	0.5	5.5	
200.8	05/16/05	200.8	05/20/05	7440-43-9	Cadmium	0.5	0.5	U
200.8	05/16/05	200.8	05/20/05	7440-47-3	Chromium	1	1	U
200.8	05/16/05	200.8	05/20/05	7440-50-8	Copper	1	3	
200.8	05/16/05	200.8	05/20/05	7439-92-1	Lead	2	2	U
200.8	05/16/05	200.8	05/20/05	7440-66-6	Zinc	10	30	

U-Analyte undetected at given RL  
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-07 D

SAMPLE

Lab Sample ID: IB04M

LIMS ID: 05-8242

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/16/05	200.8	05/19/05	7440-38-2	Arsenic	0.5	2.7	
200.8	05/16/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/16/05	200.8	05/20/05	7440-47-3	Chromium	1	5	
200.8	05/16/05	200.8	05/19/05	7440-50-8	Copper	0.5	4.3	
200.8	05/16/05	200.8	05/19/05	7439-92-1	Lead	1	1	
200.8	05/16/05	200.8	05/19/05	7440-66-6	Zinc	4	11	

U-Analyte undetected at given RL

RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Page 1 of 1

Sample ID: GP-08 S

SAMPLE

Lab Sample ID: IB04N

QC Report No: IB04-Geomatrix Consultants

LIMS ID: 05-8243

Project: SPI EVERETT

Matrix: Water

10360

Data Release Authorized: *[Signature]*

Date Sampled: 05/10/05

Reported: 05/25/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/16/05	200.8	05/20/05	7440-38-2	Arsenic	0.5	2.2	
200.8	05/16/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/16/05	200.8	05/20/05	7440-47-3	Chromium	1	1	U
200.8	05/16/05	200.8	05/20/05	7440-50-8	Copper	1	1	U
200.8	05/16/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/16/05	200.8	05/20/05	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: GP-08 D

SAMPLE

Lab Sample ID: IB040

LIMS ID: 05-8244

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants

Project: SPI EVERETT

10360

Date Sampled: 05/10/05

Date Received: 05/12/05

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/16/05	200.8	05/20/05	7440-38-2	Arsenic	0.5	4.0	
200.8	05/16/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/16/05	200.8	05/20/05	7440-47-3	Chromium	1	1	
200.8	05/16/05	200.8	05/20/05	7440-50-8	Copper	1	1	
200.8	05/16/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/16/05	200.8	05/20/05	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Sample ID: METHOD BLANK

Page 1 of 1

Lab Sample ID: IB04MB

QC Report No: IB04-Geomatrix Consultants

LIMS ID: 05-8231

Project: SPI EVERETT

Matrix: Soil

10360

Data Release Authorized *[Signature]*

Date Sampled: NA

Reported: 05/25/05

Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	05/16/05	6010B	05/19/05	7440-38-2	Arsenic	5	5	U
3050B	05/16/05	6010B	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
3050B	05/16/05	6010B	05/19/05	7440-47-3	Chromium	0.5	0.5	U
3050B	05/16/05	6010B	05/19/05	7440-50-8	Copper	0.2	0.2	U
3050B	05/16/05	6010B	05/19/05	7439-92-1	Lead	2	2	U
3050B	05/16/05	6010B	05/19/05	7440-66-6	Zinc	0.6	0.6	U

U-Analyte undetected at given RL  
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET  
TOTAL METALS  
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: IB04LCS  
LIMS ID: 05-8231  
Matrix: Soil  
Data Release Authorized: *AW*  
Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: NA  
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010B	192	200	96.0%	
Cadmium	6010B	49.1	50.0	98.2%	
Chromium	6010B	50.1	50.0	100%	
Copper	6010B	49.0	50.0	98.0%	
Lead	6010B	203	200	102%	
Zinc	6010B	49.8	50.0	99.6%	

Reported in mg/kg-dry

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

**INORGANICS ANALYSIS DATA SHEET**

TOTAL METALS

Sample ID: METHOD BLANK

Page 1 of 1

Lab Sample ID: IB04MB


QC Report No: IB04-Geomatrix Consultants

LIMS ID: 05-8236

Project: SPI EVERETT

Matrix: Water

10360

Data Release Authorized: 

Date Sampled: NA

Reported: 05/25/05

Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	05/16/05	200.8	05/19/05	7440-38-2	Arsenic	0.2	0.2	U
200.8	05/16/05	200.8	05/19/05	7440-43-9	Cadmium	0.2	0.2	U
200.8	05/16/05	200.8	05/19/05	7440-47-3	Chromium	0.5	0.5	U
200.8	05/16/05	200.8	05/19/05	7440-50-8	Copper	0.5	0.5	U
200.8	05/16/05	200.8	05/19/05	7439-92-1	Lead	1	1	U
200.8	05/16/05	200.8	05/19/05	7440-66-6	Zinc	4	4	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET  
TOTAL METALS  
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: IB04LCS  
LIMS ID: 05-8236  
Matrix: Water  
Data Release Authorized: *[Signature]*  
Reported: 05/25/05

QC Report No: IB04-Geomatrix Consultants  
Project: SPI EVERETT  
10360  
Date Sampled: NA  
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	25.8	25.0	103%	
Cadmium	200.8	25.0	25.0	100%	
Chromium	200.8	25.5	25.0	102%	
Copper	200.8	26.0	25.0	104%	
Lead	200.8	26.8	25.0	107%	
Zinc	200.8	79.3	80.0	99.1%	

Reported in µg/L

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





## Data Reporting Qualifiers

Effective 12/28/04

### 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  $\geq$  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  $\leq 5$  times the Reporting Limit and the replicate control limit defaults to  $\pm 1$  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
- NR Spiked compound recovery is not reported due to chromatographic interference
- 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.
- 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
- 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
- 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.
- 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  $\geq 40\%$  RPD with no obvious chromatographic interference

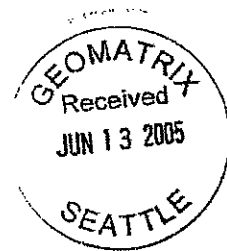
### **Geotechnical Data**

- 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
- F Samples were frozen prior to particle size determination





**Analytical Resources, Incorporated**  
Analytical Chemists and Consultants  
June 10, 2005



Joe Morrice  
GeoMatrix Consultants  
600 University, Suite 1020  
Seattle, WA 98101

**RE: Project: SPI Everett**  
**ARI Job No: IC47**

Dear Joe:

Please find enclosed a copy of the original sample custody record (COC) and a set of analytical results for the project referenced above. Analytical Resources, Inc. accepted six soil samples and sixteen water samples in good condition on May 12, 2005.

Selected samples were analyzed for PCP, TSS, PAH, SIM PAH, hardness, PCB, NWTPH-Dx, and total metals, as requested on the COC.

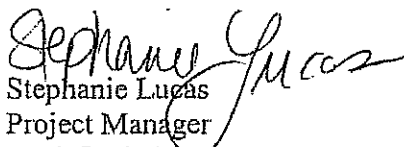
On 5/26/05, it was requested to have sample **GP-10 7-9** analyzed for PCP (pentachlorophenol). The sample was extracted two days out of holding on 5/28/05 and analyzed on 5/31/05 at a 10X dilution.

There were no anomalies associated with these samples.

Copies of these reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

  
Stephanie Lucas  
Project Manager  
steph@arilabs.com  
(206) 695-6213

# Chain of Custody Record & Laboratory Analysis Request

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



Page: 3 of 5  
 Date: 5-11-05  
 Ice Present? Y  
 No. of Coolers: 3  
 Cooler Temps: 3.0, 4.0, 6.0

ARI Assigned Number: 500  
 Turn-around Requested: 500  
 ARI Client Company: GENTAMER  
 Phone: 206-342-1735  
 Client Contact: J-E MURPHY  
 Client Project Name: SPE OURNET  
 Client Project #: 10360  
 Samplers: SAM

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested				Notes/Comments
					PCP	TSS	PAHs	THANONS	
GP-07 5-B	5-11	1600	S	1	X				
GP-07 5	5-11	1610	W	1	X				
GP-07 D	5-11	1645	W	1	X				
GP-10 7-9	5-11	1730	S	1	X				
GP-10 5	5-11	1745	W	3	X				
GP-10 D	5-11	1815	W	3	X				
GP-11 4-7	5-11	1900	S	2	X				
GP-11 5	5-11	1910	W	3	X				
GP-11 D	5-11	1925	W	3	X				
Review 5/11/05	5-11	3005	W	1	X				
Comments/Special Instructions					Relinquished by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)		
					Printed Name: J-E MURPHY	Printed Name: BRIAN KEGEL	Printed Name:		
					Company: GMA	Company: ARI	Company:		
					Date & Time: 5-12-05 1416	Date & Time: 5/12/05 1416	Date & Time:		

COPY

**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.

SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: IC47-Geomatrix Consultants  
Project: SPI Everett  
10360

<u>Client ID</u>	<u>TBP</u>	<u>TOT</u>	<u>OUT</u>
MB-052805	81.9%	0	
LCS-052805	84.8%	0	
GP-10 7-9	58.7%	0	

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(TBP) = 2,4,6-Tribromophenol	(28-113)	(22-127)

Prep Method: SW3550B  
Log Number Range: 05-9066 to 05-9066

ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: MB-052805  
METHOD BLANK

Lab Sample ID: MB-052805  
LIMS ID: 05-9066  
Matrix: Soil  
Data Release Authorized: *[Signature]*  
Reported: 06/06/05

QC Report No: IC47-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: NA  
Date Received: NA

Date Extracted: 05/28/05  
Date Analyzed: 05/30/05 12:49  
Instrument/Analyst: NT4/LJR  
GPC Cleanup: No

Sample Amount: 7.50 g  
Final Extract Volume: 0.5 mL  
Dilution Factor: 1.00  
Percent Moisture: NA  
pH: NA

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	330	< 330 U

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol	81.9%
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ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1

Sample ID: GP-10 7-9  
SAMPLE

Lab Sample ID: IC47A  
LIMS ID: 05-9066  
Matrix: Soil  
Data Release Authorized: *MS*  
Reported: 06/06/05

QC Report No: IC47-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Date Extracted: 05/28/05  
Date Analyzed: 05/31/05 16:54  
Instrument/Analyst: NT4/LJR  
GPC Cleanup: No

Sample Amount: 6.42 g-dry-wt  
Final Extract Volume: 0.5 mL  
Dilution Factor: 10.0  
Percent Moisture: 14.7%  
pH: 6.9

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	3,900	43,000

Reported in  $\mu\text{g}/\text{kg}$  (ppb)

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol 58.7%



ORGANICS ANALYSIS DATA SHEET  
Semivolatiles by SW8270C GC/MS  
Page 1 of 1



Sample ID: LCS-052805  
LAB CONTROL

Lab Sample ID: LCS-052805  
LIMS ID: 05-9066  
Matrix: Soil  
Data Release Authorized: *AS*  
Reported: 06/06/05

QC Report No: IC47-Geomatrix Consultants  
Project: SPI Everett  
10360  
Date Sampled: 05/11/05  
Date Received: 05/12/05

Date Extracted: 05/28/05  
Date Analyzed: 05/30/05 13:22  
Instrument/Analyst: NT4/LJR  
GPC Cleanup: NO

Sample Amount: 7.50 g  
Final Extract Volume: 0.5 mL  
Dilution Factor: 1.00  
Percent Moisture: NA  
pH: NA

Analyte	Lab Control	Spike Added	Recovery
Pentachlorophenol	2160	2500	86.4%

Semivolatile Surrogate Recovery

2,4,6-Tribromophenol 84.8%

Results reported in  $\mu\text{g}/\text{kg}$