0092237

SAF-RC-182
ARRA 100F Remaining Sites Remediation – Soil In-Process
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 11/30/10
INITIAL/DATE

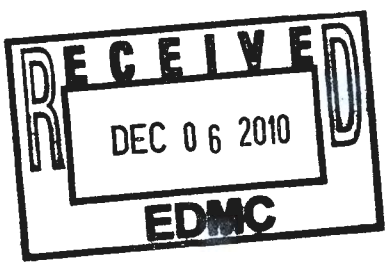
COMMENTS:

SDG K2440 SAF-RC-182

Rad only ☑ Chem only Rad & Chem

☑ Complete Partial

Sample Location: 100-F-49



LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
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18 November 2010

Joan Kessner
WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H9-03
Richland, WA 99354

Subject: Analytical Data Package

Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	1010048
SDG #	K2440
SAF #	RC-182
Date Received	10/12/10
# Samples	3
Matrix	SOIL
Volatiles	
Semivolatiles	X
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
PAHs	
Herbicides	
Metals	X
Inorganics	

The electronic data deliverable (EDD) has been emailed. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,

Lionville Laboratory
A Division of Eberline Analytical Corporation

Odette S. Johnson
Project Manager

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Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 09:07

Analytical Report for Metals by SW846 6000/7000 series

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1CCL0	1010048-01	Soil	10/06/2010 10:40	10/12/2010 09:50
J1CCL1	1010048-02	Soil	10/06/2010 12:50	10/12/2010 09:50
J1CCL2	1010048-03	Soil	10/06/2010 14:25	10/12/2010 09:50

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Case Narrative

Client: WC-HANFORD RC-182
LVL#: 1010048
SDG/SAF#: K2440/RC-182

W.O.#: 60049-001-001-0001-00
Date Received: 10-12-10

METALS

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 3 soil samples and 3 TCLP leachate samples.

2. The samples were prepared and analyzed in accordance with methods listed on the data report forms.

   The TCLP leachate samples were run and reported with 6-fold dilutions for ICP metals due to sample matrix.

3. All analyses were performed within the required holding times.

4. Please refer to the Sample Receipt Check List for any sample discrepancies in LvLI's sample acceptance policy.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

7. All preparation/method blanks (MB) were within method criteria {less than the Limit of Quantitation (3-10X the LOD), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}.

8. All ICP Interference Check Standards were within control limits.

9. All Standard Reference Material (SRM) analytes were within the Prediction Interval control limits supplied by the manufacturer. All laboratory control samples (LCS) were within the 80-120% control limits.

10. The soil matrix spike (MS) recoveries for 6 analytes were outside the 75-125% control limits.

11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J1CCL0	Aluminum	22,000	97.6
	Antimony	100	101.7
	Chromium	100	90.8
	Iron	42,000	84.5
	Lead	100	71.4
	Silicon	2,100	122.6

12. The soil duplicate analyses for 3 analytes were outside the 20% Relative Percent Difference (RPD) control limit critieria. The ± 20% RPD control limit applies to sample results greater than ten times the MDL. The sample result for Mercury was less than ten times the MDL.

13. All TCLP leachate duplicate analyses were within the 20% Relative Percent Difference (RPD) control limit critieria. The ± 20% RPD control limit applies to sample results greater than ten times the MDL. The sample result for Chromium was less than ten times the MDL.

14. The TCLP extract from sample J1CCL0 was selected for the matrix spike (MS) for this analytical batch.

15. The matrix spike for Silver was below 50% recovery (35.0%). The recovery in the TCLP Leachate was below 80-120% of the action level so standard addition was not required per Federal Register, Vol.57, No.227, Nov. 24, 1992, page 55117.

16. For the purposes of this report, the data have been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

17. LvL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

18. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

10/31/10
Date

alm/10-048

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 09:07

Notes and Definitions

U	Analyte included in the analysis, but not detected
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
B	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag)
*	Value outside QC acceptance criteria
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
wet	Sample results reported on a wet weight basis
RPD	Relative Percent Difference

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Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 09:07

J1CCL0

1010048-01 (Soil)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**8030**		5.01	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Antimony	**0.435**	B	0.601	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Arsenic	**2.94**		1.00	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Barium	**129**		0.501	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Beryllium	**0.284**		0.200	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Boron	**3.41**		2.00	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Cadmium	**0.783**		0.200	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Calcium	**4860**		100	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Chromium	**29.8**		0.200	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Cobalt	**6.44**		2.00	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Copper	**15.7**		1.00	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Iron	**18500**		20.0	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Lead	**98.9**		0.501	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Magnesium	**3950**		75.2	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Manganese	**280**		5.01	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Molybdenum	**0.434**	B	2.00	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Nickel	**11.4**		4.01	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Potassium	**1400**		401	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Selenium	**0.428**		0.301	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Silicon	**827**		2.00	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Silver	0.200	U	0.200	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Sodium	**219**		50.1	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Vanadium	**46.4**		2.51	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Zinc	**127**		10.0	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Mercury	**0.0496**		0.0261	mg/kg dry	1	L010304	10/22/2010	10/25/2010	7471A

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Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 09:07

J1CCL0

1010048-01 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.0900	U	0.0900	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Barium	**0.419**		0.00600	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Cadmium	**0.00588**	B	0.0180	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Chromium	**0.00979**	B	0.0300	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Lead	0.0600	U	0.0600	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Selenium	0.120	U	0.120	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Silver	0.0360	U	0.0360	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Mercury	0.000200	U	0.000200	mg/L	1	L010374	10/27/2010	10/29/2010	7470

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Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 09:07

J1CCL1

1010048-02 (Soil)

Lionville Laboratory

Metals by SW846 6000/7000 series

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Aluminum	**7390**		4.34	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Antimony	**0.268**	B	0.521	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Arsenic	**2.65**		0.869	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Barium	**130**		0.434	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Beryllium	**0.274**		0.174	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Boron	**3.82**		1.74	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Cadmium	**0.591**		0.174	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Calcium	**4290**		86.9	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Chromium	**16.8**		0.174	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Cobalt	**5.66**		1.74	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Copper	**15.0**		0.869	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Iron	**16300**		17.4	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Lead	**47.2**		0.434	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Magnesium	**3630**		65.2	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Manganese	**237**		4.34	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Molybdenum	**0.356**	B	1.74	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Nickel	**10.4**		3.48	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Potassium	**1370**		348	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Selenium	0.261	U	0.261	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Silicon	**685**		1.74	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Silver	**0.229**		0.174	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Sodium	**258**		43.4	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Vanadium	**42.8**		2.17	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Zinc	**141**		8.69	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Mercury	**0.0686**		0.0253	mg/kg dry	1	L010304	10/22/2010	10/25/2010	7471A

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 09:07

J1CCL1

1010048-02 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.0900	U	0.0900	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Barium	**0.475**		0.00600	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Cadmium	**0.00814**	B	0.0180	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Chromium	**0.0211**	B	0.0300	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Lead	**0.0295**	B	0.0600	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Selenium	0.120	U	0.120	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Silver	0.0360	U	0.0360	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Mercury	**0.0000790**	B	0.000200	mg/L	1	L010374	10/27/2010	10/29/2010	7470

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2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 09:07

J1CCL2

1010048-03 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	**7470**		4.11	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Antimony	0.493	U	0.493	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Arsenic	**2.48**		0.822	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Barium	**140**		0.411	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Beryllium	**0.289**		0.164	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Boron	**10.8**		1.64	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Cadmium	**0.590**		0.164	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Calcium	**4810**		82.2	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Chromium	**11.3**		0.164	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Cobalt	**5.54**		1.64	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Copper	**14.5**		0.822	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Iron	**18900**		16.4	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Lead	**17.9**		0.411	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Magnesium	**3740**		61.6	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Manganese	**290**		4.11	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Molybdenum	**0.393**	B	1.64	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Nickel	**9.94**		3.29	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Potassium	**1030**		329	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Selenium	**0.397**		0.247	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Silicon	**603**		1.64	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Silver	0.164	U	0.164	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Sodium	**242**		41.1	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Vanadium	**43.5**		2.05	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Zinc	**60.1**		8.22	mg/kg dry	1	L010317	10/22/2010	10/24/2010	6010B
Mercury	**0.0368**		0.0255	mg/kg dry	1	L010304	10/22/2010	10/25/2010	7471A

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Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 09:07

J1CCL2

1010048-03 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
TCLP Metals by SW846 1311 6000/7000 series									
Arsenic	0.0900	U	0.0900	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Barium	**0.354**		0.00600	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Cadmium	**0.00343**	B	0.0180	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Chromium	**0.00674**	B	0.0300	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Lead	0.0600	U	0.0600	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Selenium	0.120	U	0.120	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Silver	0.0360	U	0.0360	mg/L	6	L010343	10/26/2010	10/30/2010	6010
Mercury	**0.0000900**	B	0.000200	mg/L	1	L010374	10/27/2010	10/29/2010	7470

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Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010304 - SW 7471A Prep										
Blank (L010304-BLK1)				Prepared: 10/22/2010 Analyzed: 10/25/2010						
Mercury	0.0257	U	0.0257	mg/kg wet						
Duplicate (L010304-DUP2)		**Source: 1010048-01**		Prepared: 10/22/2010 Analyzed: 10/25/2010						
Mercury	0.0386		0.0268	mg/kg dry		0.0496			25.0*	20
Matrix Spike (L010304-MS2)		**Source: 1010048-01**		Prepared: 10/22/2010 Analyzed: 10/25/2010						
Mercury	0.206		0.0268	mg/kg dry	0.14897	0.0496	105	75-125		
Reference (L010304-SRM1)				Prepared: 10/22/2010 Analyzed: 10/25/2010						
Mercury	1.18		0.0273	mg/kg wet	1.2600		94.0	65.9-133.3		
Batch L010317 - SW 3050B										
Blank (L010317-BLK1)				Prepared: 10/22/2010 Analyzed: 10/24/2010						
Aluminum	3.29	U	3.29	mg/kg wet						
Antimony	0.395	U	0.395	mg/kg wet						
Arsenic	0.658	U	0.658	mg/kg wet						
Barium	0.329	U	0.329	mg/kg wet						
Beryllium	0.132	U	0.132	mg/kg wet						
Boron	1.32	U	1.32	mg/kg wet						
Cadmium	0.132	U	0.132	mg/kg wet						
Calcium	65.8	U	65.8	mg/kg wet						
Chromium	0.132	U	0.132	mg/kg wet						
Cobalt	1.32	U	1.32	mg/kg wet						
Copper	0.658	U	0.658	mg/kg wet						
Iron	13.2	U	13.2	mg/kg wet						
Lead	0.329	U	0.329	mg/kg wet						
Magnesium	49.3	U	49.3	mg/kg wet						
Manganese	3.29	U	3.29	mg/kg wet						
Molybdenum	1.32	U	1.32	mg/kg wet						
Nickel	2.63	U	2.63	mg/kg wet						
Potassium	263	U	263	mg/kg wet						
Selenium	0.197	U	0.197	mg/kg wet						
Silicon	1.32	U	1.32	mg/kg wet						
Silver	0.132	U	0.132	mg/kg wet						
Sodium	32.9	U	32.9	mg/kg wet						
Vanadium	1.64	U	1.64	mg/kg wet						
Zinc	6.58	U	6.58	mg/kg wet						

264 Welsh Pool Road
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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 09:07

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010317 - SW 3050B										
Duplicate (L010317-DUP1)	**Source: 1010048-01**		Prepared: 10/22/2010 Analyzed: 10/24/2010							
Aluminum	8000		5.10	mg/kg dry		8030			0.4	20
Antimony	0.612	U	0.612	mg/kg dry		0.435				20
Arsenic	3.03		1.02	mg/kg dry		2.94			3	20
Barium	161		0.510	mg/kg dry		129			22*	20
Beryllium	0.283		0.204	mg/kg dry		0.284			0.3	20
Boron	4.19		2.04	mg/kg dry		3.41			20	20
Cadmium	0.825		0.204	mg/kg dry		0.783			5	20
Calcium	4560		102	mg/kg dry		4860			6	20
Chromium	12.4		0.204	mg/kg dry		29.8			82*	20
Cobalt	6.10		2.04	mg/kg dry		6.44			5	20
Copper	15.8		1.02	mg/kg dry		15.7			0.7	20
Iron	17800		20.4	mg/kg dry		18500			3	20
Lead	30.1		0.510	mg/kg dry		98.9			107*	20
Magnesium	3980		76.6	mg/kg dry		3950			0.8	20
Manganese	279		5.10	mg/kg dry		280			0.4	20
Molybdenum	0.368	B	2.04	mg/kg dry		0.434			16	20
Nickel	10.3		4.08	mg/kg dry		11.4			10	20
Potassium	1500		408	mg/kg dry		1400			7	20
Selenium	0.306	U	0.306	mg/kg dry		0.428				20
Silicon	826		2.04	mg/kg dry		827			0.1	20
Silver	0.204	U	0.204	mg/kg dry		0.200 U				20
Sodium	229		51.0	mg/kg dry		219			5	20
Vanadium	44.7		2.55	mg/kg dry		46.4			4	20
Zinc	140		10.2	mg/kg dry		127			10	20
Matrix Spike (L010317-MS1)	**Source: 1010048-01**		Prepared: 10/22/2010 Analyzed: 10/24/2010							
Aluminum	8620		4.84	mg/kg dry	193.40	8030	307*	75-125		
Antimony	23.1		0.580	mg/kg dry	48.351	0.435	47*	75-125		
Arsenic	170		0.967	mg/kg dry	193.40	2.94	86	75-125		
Barium	334		0.484	mg/kg dry	193.40	129	106	75-125		
Beryllium	4.46		0.193	mg/kg dry	4.8351	0.284	86	75-125		
Boron	87.2		1.93	mg/kg dry	96.701	3.41	87	75-125		
Cadmium	5.10		0.193	mg/kg dry	4.8351	0.783	89	75-125		
Calcium	7000		96.7	mg/kg dry	2417.5	4860	89	75-125		
Chromium	29.1		0.193	mg/kg dry	19.340	29.8	-3*	75-125		
Cobalt	47.7		1.93	mg/kg dry	48.351	6.44	85	75-125		
Copper	36.9		0.967	mg/kg dry	24.175	15.7	88	75-125		

LIONVILLE LABORATORY

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 09:07

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010317 - SW 3050B									
Matrix Spike (L010317-MS1)	**Source: 1010048-01**		Prepared: 10/22/2010 Analyzed: 10/24/2010						
Iron	19000	19.3	mg/kg dry	96.701	18500	550*	75-125		
Lead	82.5	0.484	mg/kg dry	48.351	98.9	-34*	75-125		
Magnesium	6080	72.5	mg/kg dry	2417.5	3950	88	75-125		
Manganese	325	4.84	mg/kg dry	48.351	280	94	75-125		
Molybdenum	86.1	1.93	mg/kg dry	96.701	0.434	89	75-125		
Nickel	51.4	3.87	mg/kg dry	48.351	11.4	83	75-125		
Potassium	3470	387	mg/kg dry	2417.5	1400	85	75-125		
Selenium	160	0.290	mg/kg dry	193.40	0.428	83	75-125		
Silicon	1020	1.93	mg/kg dry	96.701	827	201*	75-125		
Silver	4.31	0.193	mg/kg dry	4.8351	0.200 U	89	75-125		
Sodium	2480	48.4	mg/kg dry	2417.5	219	94	75-125		
Vanadium	88.9	2.42	mg/kg dry	48.351	46.4	88	75-125		
Zinc	163	9.67	mg/kg dry	48.351	127	76	75-125		
Reference (L010317-SRM1)			Prepared: 10/22/2010 Analyzed: 10/24/2010						
Aluminum	7340	13.9	mg/kg wet	6766.6		108	0-225.5		
Antimony	68.3	1.67	mg/kg wet	56.630		121	0-225.6		
Arsenic	118	2.78	mg/kg wet	113.85		104	85-115		
Barium	308	1.39	mg/kg wet	298.35		103	75.7-124.3		
Beryllium	109	0.556	mg/kg wet	108.32		101	85.2-114.8		
Boron	87.1	5.56	mg/kg wet	86.580		101	68.5-131.6		
Cadmium	234	0.556	mg/kg wet	224.09		104	84.9-115.1		
Calcium	3340	278	mg/kg wet	3305.9		101	82.8-117.2		
Chromium	82.7	0.556	mg/kg wet	77.590		107	76.8-123.2		
Cobalt	171	5.56	mg/kg wet	163.19		105	79.4-120.6		
Copper	272	2.78	mg/kg wet	265.65		103	82.4-117.6		
Iron	8660	55.6	mg/kg wet	8202.8		106	78.9-121.1		
Lead	190	1.39	mg/kg wet	187.62		101	81.5-118.5		
Magnesium	8540	208	mg/kg wet	8352.3		102	84.2-115.8		
Manganese	888	13.9	mg/kg wet	951.35		93	69-131		
Molybdenum	257	5.56	mg/kg wet	234.78		110	80.1-119.9		
Nickel	231	11.1	mg/kg wet	220.85		105	81.4-118.6		
Potassium	14800	1110	mg/kg wet	14177		104	85.7-114.3		
Selenium	189	0.833	mg/kg wet	187.99		100	78.8-121.2		
Silicon	909	5.56	mg/kg wet	939.78		97	0-272.3		
Silver	83.3	0.556	mg/kg wet	83.960		99	81.9-118.1		
Sodium	9550	139	mg/kg wet	9587.1		100	83.5-116.4		

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 09:07

Metals by SW846 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010317 - SW 3050B									
Reference (L010317-SRM1)			Prepared: 10/22/2010 Analyzed: 10/24/2010						
Vanadium	107	6.94	mg/kg wet	97.430		110	75.8-124.2		
Zinc	201	27.8	mg/kg wet	196.52		102	78.9-121.1		

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 09:07

TCLP Metals by SW846 1311 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 0100124 - L010374										
Instrument Blank (0100124-IBL1)				Prepared & Analyzed: 10/29/2010						
Mercury	0.000200	U	0.000200	ug/L						
Batch L010343 - SW 3010A										
Blank (L010343-BLK1)				Prepared: 10/26/2010 Analyzed: 10/30/2010						
Arsenic	0.0150	U	0.0150	mg/L						
Barium	0.00100	U	0.00100	mg/L						
Cadmium	0.00300	U	0.00300	mg/L						
Chromium	0.00500	U	0.00500	mg/L						
Lead	0.0100	U	0.0100	mg/L						
Selenium	0.0200	U	0.0200	mg/L						
Silver	0.00600	U	0.00600	mg/L						
Blank (L010343-BLK3)				Prepared: 10/26/2010 Analyzed: 10/30/2010						
Arsenic	0.0900	U	0.0900	mg/L						
Barium	0.00600	U	0.00600	mg/L						
Cadmium	0.0180	U	0.0180	mg/L						
Chromium	0.0300	U	0.0300	mg/L						
Lead	0.0600	U	0.0600	mg/L						
Selenium	0.120	U	0.120	mg/L						
Silver	0.0360	U	0.0360	mg/L						
LCS (L010343-BS1)				Prepared: 10/26/2010 Analyzed: 10/30/2010						
Arsenic	9.36		0.0150	mg/L	10.000		93.6	80-120		
Barium	4.60		0.00100	mg/L	5.0000		92.1	80-120		
Cadmium	0.248		0.00300	mg/L	0.25000		99.2	80-120		
Chromium	0.459		0.00500	mg/L	0.50000		91.7	80-120		
Lead	2.31		0.0100	mg/L	2.5000		92.3	80-120		
Selenium	8.96		0.0200	mg/L	10.000		89.6	80-120		
Silver	0.487		0.00600	mg/L	0.50000		97.4	80-120		

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 09:07

TCLP Metals by SW846 1311 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010343 - SW 3010A										
Duplicate (L010343-DUP1)		**Source: 1010048-01**		Prepared: 10/26/2010 Analyzed: 10/30/2010						
Arsenic	0.0900	U	0.0900	mg/L		0.0900 U				20
Barium	0.405		0.00600	mg/L		0.419			3.51	20
Cadmium	0.00568	B	0.0180	mg/L		0.00588			3.50	20
Chromium	0.0123	B	0.0300	mg/L		0.00979			22.5*	20
Lead	0.0600	U	0.0600	mg/L		0.0600 U				20
Selenium	0.120	U	0.120	mg/L		0.120 U				20
Silver	0.0360	U	0.0360	mg/L		0.0360 U				20
Matrix Spike (L010343-MS1)		**Source: 1010048-01**		Prepared: 10/26/2010 Analyzed: 10/30/2010						
Arsenic	5.15		0.0900	mg/L	5.0000	0.0900 U	103	50-1000		
Barium	101		0.00600	mg/L	100.00	0.419	100	50-1000		
Cadmium	1.03		0.0180	mg/L	1.0000	0.00588	102	50-1000		
Chromium	5.04		0.0300	mg/L	5.0000	0.00979	101	50-1000		
Lead	4.94		0.0600	mg/L	5.0000	0.0600 U	98.9	50-1000		
Selenium	1.00		0.120	mg/L	1.0000	0.120 U	100	50-1000		
Silver	1.75		0.0360	mg/L	5.0000	0.0360 U	35.0*	50-1000		
Batch L010374 - SW 7470A Prep										
Blank (L010374-BLK1)				Prepared: 10/27/2010 Analyzed: 10/29/2010						
Mercury	0.0000920	B	0.000200	mg/L						
Blank (L010374-BLK2)				Prepared: 10/27/2010 Analyzed: 10/29/2010						
Mercury	0.0000600	B	0.000200	mg/L						
Blank (L010374-BLK3)				Prepared: 10/27/2010 Analyzed: 10/29/2010						
Mercury	0.0000880	B	0.000200	mg/L						

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 09:07

TCLP Metals by SW846 1311 6000/7000 series - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010374 - SW 7470A Prep										
LCS (L010374-BS1)				Prepared: 10/27/2010 Analyzed: 10/29/2010						
Mercury	0.00461		0.000200	mg/L	0.0050606		91.1	80-120		
Duplicate (L010374-DUP3)		**Source: 1010048-01**		Prepared: 10/27/2010 Analyzed: 10/29/2010						
Mercury	0.000200	U	0.000200	mg/L		0.000200 U				20
Matrix Spike (L010374-MS3)		**Source: 1010048-01**		Prepared: 10/27/2010 Analyzed: 10/29/2010						
Mercury	0.181		0.0100	mg/L	0.20212	0.000200 U	89.6	50-1000		

Lionville Laboratory **Logbook #:** 829

SAMPLE DIGESTION RECORD

Digestion Batch #: L010317
Date/Time Initiated: 10/22/10 1035
Date/Time Completed: 10/22/10 1645
Analyst: JJS
Matrix (circle): Soil Water Other
Method (circle one): 3005A 3010A (3050) 200.7 (1994)

(Digested) / Undigested (circle one)
Balance #: 314
Balance Cal Verification: (Y) NA
Temp: 95
BLOCK 1 (2) (circle one)

NOTE: All temperatures are recorded as corrected temperatures

Work Order #	Spike Vol (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/Sol/ TC	Texture	Color / Appearance	Artifact	Turb
1010098-01		0.55	50		TO	Fine	Brown	Rocks	N/A
L010317-Dup1		0.54	50						
-MS1	0.5	0.57	50						
1010098-02		0.63	50			Fine	Brown	Rocks	
-03		0.62	50			Fine	Brown	Rocks	
1010061-01		0.57	50			Fine	Brown		
L010317-Dup2		0.73	50						
-MS2	0.5	0.64	50						
-MB1		0.76	50			Coarse	Boiling Chips		
-SRM1	(B)	0.54	50			Fine	Dusty gray/brown		

JJS 10/22/10

Spiking IDs / Expiration Date:
MS#: 3100-04 -07
.08
.09
6077 087.14
LCS#: (B) 1061320

Reagent IDs:
HNO_3 J19023
HCl J18041
H_2O_2 H083100
1:1 HNO_3 632-028-07
1:1 HCl

File ID#:

Data Review By / Date:
10/25/10

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Page #:

PREPARATION BENCH SHEET

L010317

Lionville Laboratory

Printed: 11/1/2010 12:20:15PM

Matrix: Solid **Prepared using: METALS - SW 3050B** **(No Surrogate)**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1010048-01	6010B ICP Trace	10/22/2010 10:26	0.55	50					WC-Hanford, Inc.	HSL + B, Mo, Si (no TL)
1010048-02	6010B ICP Trace	10/22/2010 10:26	0.63	50					WC-Hanford, Inc.	HSL + B, Mo, Si (no TL)
1010048-03	6010B ICP Trace	10/22/2010 10:26	0.62	50					WC-Hanford, Inc.	HSL + B, Mo, Si (no TL)
1010061-01	6010B ICP Trace	10/22/2010 10:26	0.57	50					WC-Hanford, Inc.	HSL + B, Mo, Si (no TL)
L010317-BLK1	QC	10/22/2010 10:26	0.76	50						
L010317-DUP1	QC	10/22/2010 10:26	0.54	50		1010048-01				
L010317-DUP2	QC	10/22/2010 10:26	0.73	50		1010061-01				
L010317-MS1	QC	10/22/2010 10:26	0.57	50	1001747	1010048-01	500			
L010317-MS2	QC	10/22/2010 10:26	0.69	50	1001747	1010061-01	500			
L010317-SRM1	QC	10/22/2010 10:26	0.54	50	1001320		540			

Extracts Relinquished By Date

Extracts Received By Date

Lionville Laboratory

MERCURY PREPARATION

Logbook # 824

Analyst: [signature] 21 I.E. pw 10/21/10
Date 10/21/10 - digested 10/22/10
Start Time/Temp: 1320/96°
End Time/Temp: 1410/98°

Instrument ID: HG3.1
Balance # 629 /NA
Pipette Calibration (Daily) (Y) ____

Prep Batch: L010304
Worksheet: HG102501
SOP No. ME-HgCVAA
BLOCK 1 (2) (circle one)

NOTE: All temperatures are recorded as corrected temperatures.

LvL Work Order#	pH < 2 (Liq)	Spike Vol (mL)	Spike Conc. (µg/L)	Initial Wt. or Vol (g or mL)	Final Sample Vol (mL)	Comments, % Solids, etc.
blank				10ml	50	
0.2 µg/L		0.100		10ml	50	
1.0 µg/L		0.500		10ml	50	
2.0 µg/L		1.000		10ml	50	
5.0 µg/L		2.500		10ml	50	
10.0 µg/L		5.000		10ml	50	
ICV		0.125	2.5	10ml	50	
CCV		0.250	5.0	10ml	50	
ICB/CCB				10ml	50	
L010304-BLK1				0.35	50	
SRM1		(#)	(#)	0.33	50	
1010037-01				0.36	50	
L010304-DUP1				0.37	50	
MS1		0.500	1.0	0.36	50	
1010048-01				0.38	50	
L010304-DUP2				0.37	50	
MS2		0.500	1.0	0.37	50	
1010048-02				0.39	50	
03				0.36	50	
1010049-01				0.38	50	
L010304-DUP3				0.39	50	
MS3		0.500	1.0	0.37	50	
1010051-01				0.35	50	
L010304-DUP4				0.35	50	
pw potable extra 0 MS4		0.500	1.0	0.36	50	
1010053-01				0.36	50	
02				0.38	50	

Standard:	ID	Prep Date/Time
ICAL/MS	BI 09014858	10/22/10 0945
ICV/CCV/LCS	I.V. 09022947A	1

Reviewed By/Date: [signature] 10/26/10

se book # 9368 for std traceability information

Soil LCS True Value = 1.26 mg/Kg
Standard # 1001320 (#)

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
alter LCS Spiking Concentration: 1.0 µg/ml

A

00000028

Lionville Laboratory

MERCURY PREPARATION

Logbook # 824

Analyst: [signature]
Date 10/24/10 - digested 10/27/10
Start Time/Temp: 039
End Time/Temp: 039

Instrument ID: HG3.1
Balance # B29 /NA
Pipette Calibration (Daily) (Y) ____

Prep Batch: L010304
Worksheet: HG102501
SOP No. ME-HgCVAA
BLOCK 1 (2) (circle one)

NOTE: All temperatures are recorded as corrected temperatures.

LvL Work Order#	pH < 2 (Liq)	Spike Vol (mL)	Spike Conc. (µg/L)	Initial Wt. or Vol (g or mL)	Final Sample Vol (mL)	Comments, % Solids, etc.
1010053-03				0.37	50	
L010304-DUP5				0.35	50	
MS5		0.500	1.0	0.35	50	

pm 10/27/10

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	039	

Reviewed By/Date: [signature] 10/26/10

se book # 9268 for std traceability information

Soil LCS True Value = 039 mg/Kg
Standard # ____

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
Water LCS Spiking Concentration: 1.0 µg/ml

A

Lionville Laboratory T.E. JJS 10/27/10 **Logbook #:** 829

SAMPLE DIGESTION RECORD

Digestion Batch #: L010343
Date/Time Initiated: ~~8/26/10~~ 1220 10/26/10
Date/Time Completed: ~~8/26/10~~ 1830 10/26/10
Analyst: JJS
Matrix (circle): Soil Water (Other)
Method (circle one): 3005A (3010A) 3050 200.7 (1994)

(Digested) / Undigested (circle one)
Balance #: N/A
Balance Cal Verification: Y (NA)
Temp: 96
BLOCK (1) 2 (circle one)

NOTE: All temperatures are recorded as corrected temperatures

clc = clear/colorless

Work Order #	Spike Vol (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/Sol/ TC	Texture	Color / Appearance	Artifact	Turb
L0100498-01		50	50	<2	TC	N/A	clc	N/A	N/A
L010343-DUP		50	50	<2			clc		
-MS	0.5	50	50				clc		
L0100498-02		50	50	<2			clc		
-03		50	50	<2			clc		
L010343-BLK		50	50				clc		
-BS	0.5	50	50				clc		
-MU2		50	50	<2			clc		
-MU3		50	50	<2			clc		

JJS 10/27/10

Spiking IDs / Expiration Date:
MS# : 6077-086-10 1 08/01

LCS#: 6077-086-10 [08] [09] [07]

Reagent IDs:
HNO_3 J19023
HCl
H_2O_2
1:1 HNO_3
1:1 HCl 63-027-08

File ID#:

Data Review By / Date: 10/27/10

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†: Associated with L010255.
⊕: Associated with L010310.

PREPARATION BENCH SHEET

L010343

Lionville Laboratory

Printed: 11/1/2010 12:20:30PM

Matrix: Solid **Prepared using: METALS - SW 3010A** **(No Surrogate)**

Lab Number	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1010048-01	1311/6010B TCLP RCRA ICP MET.	10/26/2010 11:32	50	50					WC-Hanford, Inc.	
1010048-02	1311/6010B TCLP RCRA ICP MET.	10/26/2010 11:32	50	50					WC-Hanford, Inc.	
1010048-03	1311/6010B TCLP RCRA ICP MET.	10/26/2010 11:32	50	50					WC-Hanford, Inc.	
L010343-BLK1	QC	10/26/2010 11:32	50	50						
L010343-BLK2	QC	10/26/2010 11:32	50	50						Associated with L010255.
L010343-BLK3	QC	10/26/2010 11:32	50	50						Associated with L010310.
L010343-BS1	QC	10/26/2010 11:32	50	50	1001197		500			
L010343-DUP1	QC	10/26/2010 11:32	50	50		1010048-01				
L010343-MS1	QC	10/26/2010 11:32	50	50	1000502	1010048-01	500			

Extracts Relinquished By Date

Extracts Received By Date

Lionville Laboratory

MERCURY PREPARATION

Logbook # 824

Analyst: MMcLeR
Date 10/27/10
Start Time/Temp: 1845/95°
End Time/Temp: 2045/96°

Instrument ID: HG3.1
Balance # (NA)
Pipette Calibration (Daily) (Y)

Prep Batch: L010374
Worksheet: HG102901
SOP No. ME-HgCVAA
BLOCK (1) 2 (circle one)

NOTE: All temperatures are recorded as corrected temperatures.

LvL Work Order#	pH < 2 (Liq)	Spike Vol (mL)	Spike Conc. (µg/L)	Initial Wt. or Vol (g or mL)	Final Sample Vol (mL)	Comments, % Solids, etc.
blank				33	33	
0.2 µg/L		0.0667		33	33	
1.0 µg/L		0.333		33	33	
2.0 µg/L		0.666		33	33	
5.0 µg/L		1.666		33	33	
10.0 µg/L		3.333		33	33	
ICV		0.0835	2.5	33	33	
CCV		0.167	5.0	33	33	
ICB/CCB				33	33	
L010374-BLK1				33	33	
BLK2	<			33	33	
BLK3	<			33	33	
BS1		0.167	5.0	33	33	
1009158-01	<			33	33	
L010374-MS1		0.667*	200	33	33	
MSD1	<	0.667*	200	33	33	
1010003-02	<			33	33	
L010374-MS2		0.667*	200	33	33	
MSD2	<	0.667*	200	33	33	
1010048-01	<			33	33	
L010374-DUP3	<			33	33	
MS3		0.667*	200	33	33	
1010048-02	<			33	33	
03	<			33	33	
1010084-01	<			33	33	
L010374-DUP4	<			33	33	
MS4		0.667*	200	33	33	

Standard:	ID	Prep Date/Time
ICAL/MS	RI 090985B	10/27/10 1135
ICV/CCV/LCS	IV 090229TA	1

Reviewed By/Date: CBM 10/29/10

se book # 9368 for std traceability information

Soil LCS True Value = N/A mg/Kg
Standard # N/A

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
after LCS Spiking Concentration: 1.0 µg/ml

* used 090985A (10 µg/ml)

A

Lionville Laboratory

MERCURY PREPARATION

Logbook # 824

Analyst: [illegible]
Date 10/27/10
Start Time/Temp: see pg 048
End Time/Temp: see pg 048

Instrument ID: HG3.1
Balance # (NA)
Pipette Calibration (Daily) (Y) ____

Prep Batch: L010374
Worksheet: HG102701
SOP No. ME-HgCVAA
BLOCK (1) 2 (circle one)

NOTE: All temperatures are recorded as corrected temperatures.

LvL Work Order#	pH <2 (Liq)	Spike Vol (mL)	Spike Conc. (µg/L)	Initial Wt. or Vol (g or mL)	Final Sample Vol (mL)	Comments, % Solids, etc.
1010084-02	L			33	33	

PW 10/27/10

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS		

Reviewed By/Date: [illegible] 10/29/10

se book # 9368 for std traceability information

Soil LCS True Value = see page 048 mg/Kg
Standard # ____

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
after LCS Spiking Concentration: 1.0 µg/ml

A

Lionville Laboratory Logbook # 763

% SOLID / % MOISTURE ANALYSIS RECORD

Analysis performed by Cas 10/13/10

Analyst: MZ / Cas
Start Date/Time/Temp: 10/13/10 9:55 104°C
End Date/ Time/Temp: 10/14/10 11:00 105°C
Balance ID: B-5

Method: WC-160.6
Worksheet: XSOL1013 / MC1013
Prep Batch: 10L%S092
Promium Batch: 2010181-%SOL
2010182 - MC

NOTE: All temperatures are recorded as corrected temperatures.

Sample ID	Container wt (g)	Initial wt (g) (Sample & Container)	Final wt (g) (Sample & Container)	% Solid	% Moisture	
1009018-01	1.326	8.188	7.811	94.51		
01R	1.326	8.523	8.117	94.36		
* 1009033-15	1.320	8.296	8.193			
1009035-23	1.329	8.235	7.955	95.95		
~~1009143-02~~	~~1.321~~	~~8.448~~	~~MZ~~	~~10/13/10~~		**
05	1.324	8.653	8.239	94.35		*
~~14~~	~~1.323~~	~~8.347~~	~~MZ 10/13/10~~			**
1010048-01	1.330	8.242	7.600	90.71		
02	1.325	8.203	7.608	91.35		
03	1.321	8.202	8.073	98.13		
1010049-01	1.328	7.391	6.466	84.74		
01R	1.329	7.521	6.623	85.50		
1010050-01	1.323	8.476	7.917	92.19		
02	1.322	8.015	7.645	94.47		
03	1.328	8.272	7.906	94.73		
04	1.326	8.311	8.024	95.89		
05	1.323	8.362	8.098	96.25		
06	1.326	8.431	8.002	93.96		
1010051-01	1.322	8.252	8.061	97.24		
01R	1.321	8.472	8.306	97.08		
1010052-01	1.324	8.004	7.724	95.81		
01R	1.324	8.274	7.975	95.70		
MC 1009142-05	1.315	8.479	8.197	96.06	3.94	RAD
1009143-09	1.320	8.237	8.012	96.75		
1010018-14	1.314	8.178	8.149	99.58		

"R" = replicate, "wt" = weight

Example Calculations: % solids = $\frac{\text{Pan and dry sample wt. (g) – pan wt. (g)}}{\text{Pan and wet sample wt. (g) – pan wt. (g)}}$ X 100

% moisture = 100% - % solids result

* Refer to XSOL1008 Cas 10/14/10

* Crossed out by mistake. MZ 10/14/10

** Samples added to batch 2010146 10/15/10

Reviewed By/Date: Maniya Jain

Lionville Laboratory

TCLP EXTRACTION RECORD
(NON-VOLATILES)

LOGBOOK # 814

Start Date: 10/21/10	End Date: 10/22/10	Tumbler Speed: 30 RPM
Start Time: 1430	End Time: 1200	Leachate Batch #: LC1510
Analyst: [illegible]	Analyst: [illegible]	Leachate Page: 1 of 2
SOP: SPI-1311.1	Method: 1311	Room Temp. (°C):
		Start 21 /Finish 21
		Acceptance Criteria: 23°C ± 2°

LvL #: LC1631C	Initial Filtration Data and Comments: BK
Client ID#:	Solids: ____% / NA
pH After 5 Min:	
pH After Acid/Heat:	
Extraction Fluid/pH: #1 4.88	
Sample Wt.(g):	
Extract Fluid Vol.(mL):	
pH After Extraction:	Initial Filtrate Added:
LvL #: 1010003 - 2	Initial Filtration Data and Comments: 002
Client ID#:	Solids: ____% / NA
pH After 5 Min: 8.99	
pH After Acid/Heat: 1.76	
Extraction Fluid/pH: #1 4.88	
Sample Wt.(g): 100	
Extract Fluid Vol.(mL): 2000	
pH After Extraction:	Initial Filtrate Added:
LvL # 1010022 -001	Initial Filtration Data and Comments: 002
Client ID#:	Solids: ____% / NA
pH After 5 Min: 9.17	
pH After Acid/Heat: 1.85	
Extraction Fluid/pH: #1 4.88	
Sample Wt.(g): 50	
Extract Fluid Vol.(mL): 1000	
pH After Extraction:	Initial Filtrate Added:
LvL #: 1010022 -002	Initial Filtration Data and Comments: 002
Client ID#:	Solids: ____% / NA
pH After 5 Min: 8.76	
pH After Acid/Heat: 2.46	
Extraction Fluid/pH: #1 4.88	
Sample Wt.(g): 50	
Extract Fluid Vol.(mL): 1000	
pH After Extraction:	Initial Filtrate Added:

Standard	ID	Prep Date	Expir Date
MS			

Reviewed By/Date [illegible] 11/1/10

Lionville Laboratory

TCLP EXTRACTION RECORD
(NON-VOLATILES)

LOGBOOK # 814

Start Date: 10/21/10	End Date: 10/22/10	Tumbler Speed: 30 RPM
Start Time: 1430	End Time: 1200	Leachate Batch #: LCL0510
Analyst:: VT	Analyst: VT	Leachate Page: 2 of 2
SOP: SPI-1311.1	Method: 1311	Room Temp. (°C):
		Start 21 /Finish 21
		Acceptance Criteria: 23°C ± 2°

LvL #: 1010048-003	Initial Filtration Data and Comments: 003
Client ID#:	Solids: ____% / NA
pH After 5 Min: 7.16	
pH After Acid/Heat: 2.53	
Extraction Fluid/pH: #1 4.93	
Sample Wt.(g): 100	
Extract Fluid Vol.(mL): 2000	
pH After Extraction:	Initial Filtrate Added:
LvL #: 1010061-001	Initial Filtration Data and Comments: 001
Client ID#:	Solids: ____% / NA
pH After 5 Min: 8.41	
pH After Acid/Heat: 1.	
Extraction Fluid/pH: #1 4.88	
Sample Wt.(g): 50	
Extract Fluid Vol.(mL): 1000	
pH After Extraction:	Initial Filtrate Added:
LvL # 1010084-001	Initial Filtration Data and Comments: 001
Client ID#:	Solids: ____% / NA
pH After 5 Min: 7.78	
pH After Acid/Heat: 2.13	
Extraction Fluid/pH: #1 4.88	
Sample Wt.(g): 100	
Extract Fluid Vol.(mL): 2000	
pH After Extraction: 4.99	Initial Filtrate Added:
LvL #: 1010084-002	Initial Filtration Data and Comments: 002
Client ID#:	Solids: ____% / NA
pH After 5 Min: 7.21	
pH After Acid/Heat: 1.84	
Extraction Fluid/pH: #1 4.88	
Sample Wt.(g): 100	
Extract Fluid Vol.(mL): 200	
pH After Extraction: 4.95	Initial Filtrate Added:

Standard	ID	Prep Date	Expir Date
MS			

Reviewed By/Date [signature] 11/1/10

Lionville Laboratory Use Only

1010 048

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

SRF

LVLI LIONVILLE LABORATORY INC.

Client WC Hanford OAF# RC-182

Est. Final Proj. Sampling Date

Project#

Project Contact/Phone#

Lionville Laboratory Project Manager O. J

QC SW Del STD TAT 15 Days

Date Rec'd 10-12-10 Date Due 10-27-10

	A		B	C	D	
Refrigerator #	2	1	2	2	2	1
#/Type Container (~~Liquid~~ / Solid)	1AG	1	1AG	1AC	1AG	1
Volume	120	1	120	120	120	1
Preservatives	—	1	—	—	—	

ANALYSES REQUESTED →

ORGANIC					INORG			
VOA	BNA	Pest/~~PCB~~	Herb	TCLP BNA	Metal ~~Hg~~	CN	TCLP MRT-Hg	TCLP Hg

Lionville Laboratory Use Only

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	8270	8081		TCLP 8270T			Met①		TCLP RCRA	
S- Soil, SE- Sediment, SO- Solid, SL- Sludge, W- Water, O- Oil, A- Air, DS- Drum Solids, DL- Drum Liquids, L- EP/TCLP Leachate, WI- Wipe, X- Other, F- Fish	01	T1CCLO			Soil	10-6-10	1040	X	X		X			X		X	X
	02	1 L1			1	1	1250	X			X			X		X	X
	03	1 L2			1	1	1425	X			X			X		X	X

Special Instructions: Raw Matrix QC

Met① = HSL + B, Mo, Sb NOTL

Special Instructions:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	10/12/10	0950

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

62000029

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-182-010	Page 1 of 1

Collector ~~D. Henjum~~ 10/6/10 Leach	Company Contact: S. Van Den Hende	Telephone No.: 509-551-3934	Project Coordinator: KESSNER, JH	Price Code ~~8L~~ JRD 10/6/10 8K	Data Turnaround ~~21 Days~~ SV 9/29/10 15 Day
Project Designation: ARRA 100F Remaining Sites Remediation - Soil In-Process	Sampling Location: 100-F-49 ~~100-F-57 Water Pumphouse Debris Pothole~~ SV 10-5-10		SAF No.: RC-182		
Ice Chest No.: WCH-11-008	Field Logbook No.: EL-1651	COA: S00F578100	Method of Shipment: FEDEX		
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A100558		Bill of Lading/Air Bill No.: SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

~~None~~ SEB 10-11-10
Potential RAD < DOT Limits

Special Handling and/or Storage

Cool 4 Degrees C

Preservation	Cool 4C	None	Cool 4C	None	None	Cool 4C				
Type of Container	aG	aG	aG	aG	Snap Vial	aG				
No. of Container(s)	1	1	1	1	1	0				
Volume	120mL	120mL	120mL	120mL	60mL	120mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TCLP Semi-VOA - 1311/8270A	RCF GEA Shipping Screen 9/29/10	Pesticides (8081)				
Sample No.	Matrix *	Sample Date	Sample Time							
J1CCL0	SOIL	10/6/10	1040	✓	✓	✓	✓	SV	✓	
J1CCL1	SOIL	10/6/10	1250	✓	✓	✓	✓			
J1CCL2	SOIL	10/6/10	1425	✓	✓	✓	✓			
~~J1CCL3~~ ADD JRD 10/6/10	SOIL									
~~J1CCL4~~	SOIL									

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Z Leach	Date/Time: 10/6/10 1545	Received By/Stored In: JR DeBruigne JR DeBruigne	Date/Time: 1545 10/6/10
Relinquished By/Removed From: JR DeBruigne JR DeBruigne	Date/Time: 1630 10/6/10	Received By/Stored In: S Howell S Howell	Date/Time: 1630 10-6-10
Relinquished By/Removed From: J.E. Beutel WCH	Date/Time: 1000 10-11-10	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time: 10-12-10 0950	Received By/Stored In: VICTOR HERNANDEZ	Date/Time: 1042-10 0950
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

Leach and hold TCLP per Joan Kessner

(1) ICP Metals - 6010TR (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}
(2) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}

ADD Pesticides (8081) to J1CCL0. JRD 10/6/10

Sterling Howell was unavailable to relinquish custody of samples on 10-11-10. J.E. Beutel will take custody of these samples stored 1060 Battelle, Fridge 18. JEB 10-11-10

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

REVIEWED BY JR DATE 10/11/10

WCH-EE-011

0000000938

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hanford RCL 182 Date: 10/12/10

Project/SAF/SOW/Release #:

LvL Batch #: 1010048 Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 796329936487
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.1 °C		Cooler # WCH-11-008
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify)
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact. signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvL) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no. then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA. TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvL Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted _____		Date _____	

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/09/2010 12:06

Analytical Report for TCLP Semivolatiles by SW846 1311/8270C

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1CCL0	1010048-01	Soil	10/06/2010 10:40	10/12/2010 09:50
J1CCL1	1010048-02	Soil	10/06/2010 12:50	10/12/2010 09:50
J1CCL2	1010048-03	Soil	10/06/2010 14:25	10/12/2010 09:50

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-182 K2440
LVL #: 1010048

W.O. #: 60049-001-001-0001-00
Date Received: 10-12-2010

SEMIVOLATILE - TCLP

Three (3) leachate samples were generated from soil samples collected on 10-06-2010.

The samples and associated QC samples were leached 10-20,22-2010, extracted 10-25,27-2010 and analyzed 10-27-2010 and 11-03-2010 according to Lionville Laboratory SOPs. The leaching procedure was based on SW846 Method 1311, the extraction procedure was based on SW846 Method 3520C, and the analysis procedure was based on SW846 Method 8270C for TCLP compounds.

Lionville Laboratory (LvL) is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements:

1. The results presented in this report are derived from a sample(s) that met LvL's sample acceptance policy.

2. The samples were extracted and analyzed within the recommended holding time.

3. Sample J1CCL2 was leached outside of the recommended holding time. A copy of the Sample Discrepancy Report (SDR#10MS312) has been enclosed.

4. The samples were extracted at five-fold dilutions due to the leachate matrix; however, all TCLP regulatory limits were achieved.

5. Non-target compounds were detected, however, not reported in these samples.

6. One (1) of sixty-six (66) surrogate recoveries was outside acceptance criteria. The calculated Phenol-d5 surrogate for samples L010333-BLK1, L010381-BLK3 and the calculated p-Terphenyl d-14 surrogate for sample L010381-BLK3 did not meet acceptance criteria; however, the presence of a peak on the chromatogram indicated that the recovery was within acceptance criteria. The spectrum showed evidence of deuterated phenol(s) and terphenyl(s), indicating that deuterium exchange had occurred during the extraction process. The total deuterated Phenol-d5 and p-Terphenyl d14 surrogate recoveries have been recalculated and reported.

7. Three (3) of twenty-four (24) matrix spike recoveries were outside acceptance criteria due to a high biased.

8. One (1) of twenty-four (24) blank spike recoveries were outside acceptance criteria due to a high biased.

9. The method blanks were below the reporting limit for all target compounds.

10. All initial calibrations associated with this data set were within acceptance criteria.

11. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

12. Internal standard area and retention time criteria were met.

13. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hardcopy package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Iain Daniels
LvL Laboratory Manager

11/10/10
Date

10MS312 RES 11.8.10

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: ~~10MS312~~

Initiator: Shannon Saylor
Date: 11-8-10
Client: Weiss KC440

Batch: 1010048
Samples: #3 JICCL2
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: Aqueous
Prep Batch: L010333
L010381

1. Reason for SDR

a. COC Discrepancy __ Tech Profile Error __ Client Request __ Sampler Error on C-O-C __ Transcription Error __ Wrong Test Code __ Other _____

b. General Discrepancy

__ Missing Sample/Extract __ Container Broken __ Wrong Sample Pulled __ Label ID's Illegible
__ Hold Time Exceeded __ Insufficient Sample __ Preservation Wrong __ Received Past Hold
__ Improper Bottle Type __ Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

Sample JICCL2 was leached out of the 14 day hold time

2. Known or Probable Causes(s)

Scheduling error

Rec'd 11/9/10

3. Discussion and Proposed Action

Other Description: Namle

__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

4. Project Manager Instructions...signature/date: 11/10/10

__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
✓ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: 11/10/10

Other Explanation:

__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

When Final Action has been recorded, forward original to QA for diposition.

Route
__ Lab Manager: Daniels
__ Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): ~~Ford~~
__ Log-in: King

Route
__ Metals: Welsh / _____
__ Inorganic: Perrone / _____
__ GC/LC: Carey / _____
__ ~~MS VOA~~: Rubino / _____
__ MS BNA: Carden / _____
__ Other: _____

GLOSSARY

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concetration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

D = Identifies all compounds identified in an analysis at a secondary dilution factor.

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

A = Indicates that a TIC is a suspected aldol-condensation product.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.

X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).

Y = Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

MP - Missed Peak: Manually added peak not found by automatic quan program.

PA - Peak Assignment: quan report was changed to reflect correct peak assignment.

RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.

SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.

CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal., or other interference.

PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/09/2010 12:06

J1CCL0

1010048-01 (Soil)

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
TCLP Semivolatiles by SW846 1311/8270C								
1,4-Dichlorobenzene	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
2,4,5-Trichlorophenol	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
2,4,6-Trichlorophenol	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
2,4-Dinitrotoluene	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
2-Methylphenol	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
3- and/or 4-Methylphenol	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
Hexachlorobenzene	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
Hexachlorobutadiene	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
Hexachloroethane	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
Nitrobenzene	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
Pentachlorophenol	0.125 U	0.125	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
Pyridine	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
Surrogate: 2-Fluorophenol	*79 %*	*21-100*			*L010333*	*10/25/2010*	*11/03/2010*	*8270C*
Surrogate: Phenol-d5	*55 %*	*10-94*			*L010333*	*10/25/2010*	*11/03/2010*	*8270C*
Surrogate: Nitrobenzene-d5	*72 %*	*35-114*			*L010333*	*10/25/2010*	*11/03/2010*	*8270C*
Surrogate: 2-Fluorobiphenyl	*62 %*	*43-116*			*L010333*	*10/25/2010*	*11/03/2010*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*78 %*	*10-123*			*L010333*	*10/25/2010*	*11/03/2010*	*8270C*
Surrogate: p-Terphenyl-d14	*88 %*	*33-141*			*L010333*	*10/25/2010*	*11/03/2010*	*8270C*

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/09/2010 12:06

J1CCL1

1010048-02 (Soil)

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
TCLP Semivolatiles by SW846 1311/8270C								
1,4-Dichlorobenzene	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
2,4,5-Trichlorophenol	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
2,4,6-Trichlorophenol	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
2,4-Dinitrotoluene	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
2-Methylphenol	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
3- and/or 4-Methylphenol	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
Hexachlorobenzene	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
Hexachlorobutadiene	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
Hexachloroethane	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
Nitrobenzene	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
Pentachlorophenol	0.125 U	0.125	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
Pyridine	0.0500 U	0.0500	mg/L	1	L010333	10/25/2010	11/03/2010	8270C
Surrogate: 2-Fluorophenol	*83 %*	*21-100*			*L010333*	*10/25/2010*	*11/03/2010*	*8270C*
Surrogate: Phenol-d5	*48 %*	*10-94*			*L010333*	*10/25/2010*	*11/03/2010*	*8270C*
Surrogate: Nitrobenzene-d5	*79 %*	*35-114*			*L010333*	*10/25/2010*	*11/03/2010*	*8270C*
Surrogate: 2-Fluorobiphenyl	*68 %*	*43-116*			*L010333*	*10/25/2010*	*11/03/2010*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*79 %*	*10-123*			*L010333*	*10/25/2010*	*11/03/2010*	*8270C*
Surrogate: p-Terphenyl-d14	*91 %*	*33-141*			*L010333*	*10/25/2010*	*11/03/2010*	*8270C*

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/09/2010 12:06

J1CCL2

1010048-03 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
TCLP Semivolatiles by SW846 1311/8270C								
1,4-Dichlorobenzene	0.0500 U	0.0500	mg/L	1	L010381	10/27/2010	11/03/2010	8270C
2,4,5-Trichlorophenol	0.0500 U	0.0500	mg/L	1	L010381	10/27/2010	11/03/2010	8270C
2,4,6-Trichlorophenol	0.0500 U	0.0500	mg/L	1	L010381	10/27/2010	11/03/2010	8270C
2,4-Dinitrotoluene	0.0500 U	0.0500	mg/L	1	L010381	10/27/2010	11/03/2010	8270C
2-Methylphenol	0.0500 U	0.0500	mg/L	1	L010381	10/27/2010	11/03/2010	8270C
3- and/or 4-Methylphenol	0.0500 U	0.0500	mg/L	1	L010381	10/27/2010	11/03/2010	8270C
Hexachlorobenzene	0.0500 U	0.0500	mg/L	1	L010381	10/27/2010	11/03/2010	8270C
Hexachlorobutadiene	0.0500 U	0.0500	mg/L	1	L010381	10/27/2010	11/03/2010	8270C
Hexachloroethane	0.0500 U	0.0500	mg/L	1	L010381	10/27/2010	11/03/2010	8270C
Nitrobenzene	0.0500 U	0.0500	mg/L	1	L010381	10/27/2010	11/03/2010	8270C
Pentachlorophenol	0.125 U	0.125	mg/L	1	L010381	10/27/2010	11/03/2010	8270C
Pyridine	0.0500 U	0.0500	mg/L	1	L010381	10/27/2010	11/03/2010	8270C
Surrogate: 2-Fluorophenol	*95 %*	*21-100*			*L010381*	*10/27/2010*	*11/03/2010*	*8270C*
Surrogate: Phenol-d5	*96 % **	*10-94*			*L010381*	*10/27/2010*	*11/03/2010*	*8270C*
Surrogate: Nitrobenzene-d5	*98 %*	*35-114*			*L010381*	*10/27/2010*	*11/03/2010*	*8270C*
Surrogate: 2-Fluorobiphenyl	*87 %*	*43-116*			*L010381*	*10/27/2010*	*11/03/2010*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*94 %*	*10-123*			*L010381*	*10/27/2010*	*11/03/2010*	*8270C*
Surrogate: p-Terphenyl-d14	*111 %*	*33-141*			*L010381*	*10/27/2010*	*11/03/2010*	*8270C*

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/09/2010 12:06

TCLP Semivolatiles by SW846 1311/8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010333 - SW 3520C									
Blank (L010333-BLK1)			Prepared: 10/25/2010 Analyzed: 10/27/2010						
1,4-Dichlorobenzene	0.0500 U	0.0500	mg/L						
2,4,5-Trichlorophenol	0.0500 U	0.0500	mg/L						
2,4,6-Trichlorophenol	0.0500 U	0.0500	mg/L						
2,4-Dinitrotoluene	0.0500 U	0.0500	mg/L						
2-Methylphenol	0.0500 U	0.0500	mg/L						
3- and/or 4-Methylphenol	0.0500 U	0.0500	mg/L						
Hexachlorobenzene	0.0500 U	0.0500	mg/L						
Hexachlorobutadiene	0.0500 U	0.0500	mg/L						
Hexachloroethane	0.0500 U	0.0500	mg/L						
Nitrobenzene	0.0500 U	0.0500	mg/L						
Pentachlorophenol	0.125 U	0.125	mg/L						
Pyridine	0.0500 U	0.0500	mg/L						
Surrogate: 2-Fluorophenol	*0.168*		*mg/L*	*0.37500*		*45*	*21-100*		
Surrogate: Phenol-d5	*0.143*		*mg/L*	*0.37500*		*38*	*10-94*		
Surrogate: Nitrobenzene-d5	*0.179*		*mg/L*	*0.25000*		*71*	*35-114*		
Surrogate: 2-Fluorobiphenyl	*0.160*		*mg/L*	*0.25000*		*64*	*43-116*		
Surrogate: 2,4,6-Tribromophenol	*0.220*		*mg/L*	*0.37500*		*59*	*10-123*		
Surrogate: p-Terphenyl-d14	*0.199*		*mg/L*	*0.25000*		*79*	*33-141*		
Blank (L010333-BLK2)			Prepared: 10/25/2010 Analyzed: 10/27/2010						
1,4-Dichlorobenzene	0.0500 U	0.0500	mg/L						
2,4,5-Trichlorophenol	0.0500 U	0.0500	mg/L						
2,4,6-Trichlorophenol	0.0500 U	0.0500	mg/L						
2,4-Dinitrotoluene	0.0500 U	0.0500	mg/L						
2-Methylphenol	0.0500 U	0.0500	mg/L						
3- and/or 4-Methylphenol	0.0500 U	0.0500	mg/L						
Hexachlorobenzene	0.0500 U	0.0500	mg/L						
Hexachlorobutadiene	0.0500 U	0.0500	mg/L						
Hexachloroethane	0.0500 U	0.0500	mg/L						
Nitrobenzene	0.0500 U	0.0500	mg/L						
Pentachlorophenol	0.125 U	0.125	mg/L						
Pyridine	0.0500 U	0.0500	mg/L						
Surrogate: 2-Fluorophenol	*0.335*		*mg/L*	*0.37500*		*89*	*21-100*		
Surrogate: Phenol-d5	*0.216*		*mg/L*	*0.37500*		*58*	*10-94*		
Surrogate: Nitrobenzene-d5	*0.211*		*mg/L*	*0.25000*		*85*	*35-114*		
Surrogate: 2-Fluorobiphenyl	*0.198*		*mg/L*	*0.25000*		*79*	*43-116*		
Surrogate: 2,4,6-Tribromophenol	*0.366*		*mg/L*	*0.37500*		*98*	*10-123*		
Surrogate: p-Terphenyl-d14	*0.261*		*mg/L*	*0.25000*		*104*	*33-141*		

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/09/2010 12:06

TCLP Semivolatiles by SW846 1311/8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010333 - SW 3520C									
LCS (L010333-BS1)			Prepared: 10/25/2010 Analyzed: 10/27/2010						
1,4-Dichlorobenzene	0.200	0.0500	mg/L	0.30000		67	36-97		
2,4,5-Trichlorophenol	0.299	0.0500	mg/L	0.30000		100	9-141		
2,4,6-Trichlorophenol	0.283	0.0500	mg/L	0.30000		94	9-141		
2,4-Dinitrotoluene	0.286	0.0500	mg/L	0.30000		95	24-96		
2-Methylphenol	0.257	0.0500	mg/L	0.30000		86	9-141		
3- and/or 4-Methylphenol	0.259	0.0500	mg/L	0.30000		86	9-141		
Hexachlorobenzene	0.239	0.0500	mg/L	0.30000		80	9-141		
Hexachlorobutadiene	0.206	0.0500	mg/L	0.30000		69	9-141		
Hexachloroethane	0.186	0.0500	mg/L	0.30000		62	9-141		
Nitrobenzene	0.262	0.0500	mg/L	0.30000		87	9-141		
Pentachlorophenol	0.373	0.125	mg/L	0.30000		124*	9-103		
Pyridine	0.0988	0.0500	mg/L	0.30000		33	9-141		
Surrogate: 2-Fluorophenol	*0.321*		*mg/L*	*0.37500*		*86*	*21-100*		
Surrogate: Phenol-d5	*0.334*		*mg/L*	*0.37500*		*89*	*10-94*		
Surrogate: Nitrobenzene-d5	*0.217*		*mg/L*	*0.25000*		*87*	*35-114*		
Surrogate: 2-Fluorobiphenyl	*0.203*		*mg/L*	*0.25000*		*81*	*43-116*		
Surrogate: 2,4,6-Tribromophenol	*0.334*		*mg/L*	*0.37500*		*89*	*10-123*		
Surrogate: p-Terphenyl-d14	*0.258*		*mg/L*	*0.25000*		*103*	*33-141*		
Matrix Spike (L010333-MS2)		**Source: 1010048-01**	Prepared: 10/25/2010 Analyzed: 11/03/2010						
1,4-Dichlorobenzene	0.201	0.0500	mg/L	0.30000	0.0500 U	67	36-97		
2,4,5-Trichlorophenol	0.267	0.0500	mg/L	0.30000	0.0500 U	89	9-141		
2,4,6-Trichlorophenol	0.247	0.0500	mg/L	0.30000	0.0500 U	82	9-141		
2,4-Dinitrotoluene	0.287	0.0500	mg/L	0.30000	0.0500 U	96	24-96		
2-Methylphenol	0.276	0.0500	mg/L	0.30000	0.0500 U	92	9-141		
3- and/or 4-Methylphenol	0.272	0.0500	mg/L	0.30000	0.0500 U	91	9-141		
Hexachlorobenzene	0.249	0.0500	mg/L	0.30000	0.0500 U	83	9-141		
Hexachlorobutadiene	0.211	0.0500	mg/L	0.30000	0.0500 U	70	9-141		
Hexachloroethane	0.194	0.0500	mg/L	0.30000	0.0500 U	65	9-141		
Nitrobenzene	0.236	0.0500	mg/L	0.30000	0.0500 U	79	9-141		
Pentachlorophenol	0.338	0.125	mg/L	0.30000	0.125 U	113*	9-103		
Pyridine	0.168	0.0500	mg/L	0.30000	0.0500 U	56	9-141		
Surrogate: 2-Fluorophenol	*0.349*		*mg/L*	*0.37500*		*93*	*21-100*		
Surrogate: Phenol-d5	*0.341*		*mg/L*	*0.37500*		*91*	*10-94*		
Surrogate: Nitrobenzene-d5	*0.211*		*mg/L*	*0.25000*		*84*	*35-114*		
Surrogate: 2-Fluorobiphenyl	*0.189*		*mg/L*	*0.25000*		*76*	*43-116*		
Surrogate: 2,4,6-Tribromophenol	*0.364*		*mg/L*	*0.37500*		*97*	*10-123*		

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/09/2010 12:06

TCLP Semivolatiles by SW846 1311/8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010333 - SW 3520C									
Matrix Spike (L010333-MS2)	**Source: 1010048-01**		Prepared: 10/25/2010 Analyzed: 11/03/2010						
Surrogate: p-Terphenyl-d14	*0.206*		*mg/L*	*0.25000*		*82*	*33-141*		
Matrix Spike Dup (L010333-MSD2)	**Source: 1010048-01**		Prepared: 10/25/2010 Analyzed: 11/03/2010						
1,4-Dichlorobenzene	0.222	0.0500	mg/L	0.30000	0.0500 U	74	36-97	10	20
2,4,5-Trichlorophenol	0.307	0.0500	mg/L	0.30000	0.0500 U	102	9-141	14	20
2,4,6-Trichlorophenol	0.271	0.0500	mg/L	0.30000	0.0500 U	90	9-141	9	20
2,4-Dinitrotoluene	0.328	0.0500	mg/L	0.30000	0.0500 U	109*	24-96	13	20
2-Methylphenol	0.280	0.0500	mg/L	0.30000	0.0500 U	93	9-141	1	20
3- and/or 4-Methylphenol	0.273	0.0500	mg/L	0.30000	0.0500 U	91	9-141	0.4	20
Hexachlorobenzene	0.276	0.0500	mg/L	0.30000	0.0500 U	92	9-141	10	20
Hexachlorobutadiene	0.242	0.0500	mg/L	0.30000	0.0500 U	81	9-141	13	20
Hexachloroethane	0.206	0.0500	mg/L	0.30000	0.0500 U	69	9-141	6	20
Nitrobenzene	0.270	0.0500	mg/L	0.30000	0.0500 U	90	9-141	13	20
Pentachlorophenol	0.377	0.125	mg/L	0.30000	0.125 U	126*	9-103	11	20
Pyridine	0.160	0.0500	mg/L	0.30000	0.0500 U	53	9-141	5	20
Surrogate: 2-Fluorophenol	*0.369*		*mg/L*	*0.37500*		*98*	*21-100*		
Surrogate: Phenol-d5	*0.295*		*mg/L*	*0.37500*		*79*	*10-94*		
Surrogate: Nitrobenzene-d5	*0.236*		*mg/L*	*0.25000*		*94*	*35-114*		
Surrogate: 2-Fluorobiphenyl	*0.205*		*mg/L*	*0.25000*		*82*	*43-116*		
Surrogate: 2,4,6-Tribromophenol	*0.352*		*mg/L*	*0.37500*		*94*	*10-123*		
Surrogate: p-Terphenyl-d14	*0.239*		*mg/L*	*0.25000*		*96*	*33-141*		
Batch L010381 - SW 3520C									
Blank (L010381-BLK1)			Prepared: 10/27/2010 Analyzed: 11/03/2010						
1,4-Dichlorobenzene	0.0500 U	0.0500	mg/L						
2,4,5-Trichlorophenol	0.0500 U	0.0500	mg/L						
2,4,6-Trichlorophenol	0.0500 U	0.0500	mg/L						
2,4-Dinitrotoluene	0.0500 U	0.0500	mg/L						
2-Methylphenol	0.0500 U	0.0500	mg/L						
3- and/or 4-Methylphenol	0.0500 U	0.0500	mg/L						
Hexachlorobenzene	0.0500 U	0.0500	mg/L						
Hexachlorobutadiene	0.0500 U	0.0500	mg/L						
Hexachloroethane	0.0500 U	0.0500	mg/L						
Nitrobenzene	0.0500 U	0.0500	mg/L						
Pentachlorophenol	0.125 U	0.125	mg/L						
Pyridine	0.0500 U	0.0500	mg/L						
Surrogate: 2-Fluorophenol	*0.289*		*mg/L*	*0.37500*		*77*	*21-100*		

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/09/2010 12:06

TCLP Semivolatiles by SW846 1311/8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010381 - SW 3520C									
Blank (L010381-BLK1)			Prepared: 10/27/2010 Analyzed: 11/03/2010						
Surrogate: Phenol-d5	*0.107*		*mg/L*	*0.37500*		*28*	*10-94*		
Surrogate: Nitrobenzene-d5	*0.184*		*mg/L*	*0.25000*		*74*	*35-114*		
Surrogate: 2-Fluorobiphenyl	*0.157*		*mg/L*	*0.25000*		*63*	*43-116*		
Surrogate: 2,4,6-Tribromophenol	*0.290*		*mg/L*	*0.37500*		*77*	*10-123*		
Surrogate: p-Terphenyl-d14	*0.250*		*mg/L*	*0.25000*		*100*	*33-141*		
Blank (L010381-BLK3)			Prepared: 10/27/2010 Analyzed: 11/03/2010						
1,4-Dichlorobenzene	0.0500 U	0.0500	mg/L						
2,4,5-Trichlorophenol	0.0500 U	0.0500	mg/L						
2,4,6-Trichlorophenol	0.0500 U	0.0500	mg/L						
2,4-Dinitrotoluene	0.0500 U	0.0500	mg/L						
2-Methylphenol	0.0500 U	0.0500	mg/L						
3- and/or 4-Methylphenol	0.0500 U	0.0500	mg/L						
Hexachlorobenzene	0.0500 U	0.0500	mg/L						
Hexachlorobutadiene	0.0500 U	0.0500	mg/L						
Hexachloroethane	0.0500 U	0.0500	mg/L						
Nitrobenzene	0.0500 U	0.0500	mg/L						
Pentachlorophenol	0.125 U	0.125	mg/L						
Pyridine	0.0500 U	0.0500	mg/L						
Surrogate: 2-Fluorophenol	*0.212*		*mg/L*	*0.37500*		*57*	*21-100*		
Surrogate: Phenol-d5	*0.0528*		*mg/L*	*0.37500*		*14*	*10-94*		
Surrogate: Nitrobenzene-d5	*0.179*		*mg/L*	*0.25000*		*72*	*35-114*		
Surrogate: 2-Fluorobiphenyl	*0.152*		*mg/L*	*0.25000*		*61*	*43-116*		
Surrogate: 2,4,6-Tribromophenol	*0.245*		*mg/L*	*0.37500*		*65*	*10-123*		
Surrogate: p-Terphenyl-d14	*0.140*		*mg/L*	*0.25000*		*56*	*33-141*		
LCS (L010381-BS1)			Prepared: 10/27/2010 Analyzed: 11/03/2010						
1,4-Dichlorobenzene	0.151	0.0500	mg/L	0.30000		50	36-97		
2,4,5-Trichlorophenol	0.215	0.0500	mg/L	0.30000		72	9-141		
2,4,6-Trichlorophenol	0.210	0.0500	mg/L	0.30000		70	9-141		
2,4-Dinitrotoluene	0.222	0.0500	mg/L	0.30000		74	24-96		
2-Methylphenol	0.208	0.0500	mg/L	0.30000		69	9-141		
3- and/or 4-Methylphenol	0.204	0.0500	mg/L	0.30000		68	9-141		
Hexachlorobenzene	0.217	0.0500	mg/L	0.30000		72	9-141		
Hexachlorobutadiene	0.162	0.0500	mg/L	0.30000		54	9-141		
Hexachloroethane	0.133	0.0500	mg/L	0.30000		44	9-141		
Nitrobenzene	0.179	0.0500	mg/L	0.30000		60	9-141		
Pentachlorophenol	0.271	0.125	mg/L	0.30000		90	9-103		

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/09/2010 12:06

TCLP Semivolatiles by SW846 1311/8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010381 - SW 3520C									
LCS (L010381-BS1)			Prepared: 10/27/2010 Analyzed: 11/03/2010						
Pyridine	0.128	0.0500	mg/L	0.30000		43	9-141		
Surrogate: 2-Fluorophenol	*0.234*		*mg/L*	*0.37500*		*62*	*21-100*		
Surrogate: Phenol-d5	*0.168*		*mg/L*	*0.37500*		*45*	*10-94*		
Surrogate: Nitrobenzene-d5	*0.157*		*mg/L*	*0.25000*		*63*	*35-114*		
Surrogate: 2-Fluorobiphenyl	*0.152*		*mg/L*	*0.25000*		*61*	*43-116*		
Surrogate: 2,4,6-Tribromophenol	*0.288*		*mg/L*	*0.37500*		*77*	*10-123*		
Surrogate: p-Terphenyl-d14	*0.219*		*mg/L*	*0.25000*		*88*	*33-141*		

PREPARATION BENCH SHEET

L010310

Lionville Laboratory

Printed: 11/9/2010 11:59:56AM

3959999915

Matrix: Solid **Prepared using: WETCHEM - SW 1311** **(No Surrogate)**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1010003-02	1311 TCLP Inorganic	10/21/2010 14:30	100	2000					Bechtel Bettis Inc.	
1010022-01	1311 TCLP Inorganic	10/21/2010 14:30	50	1000					WC-Hanford, Inc.	
1010022-02	1311 TCLP Inorganic	10/21/2010 14:30	50	1000					WC-Hanford, Inc.	
1010048-03	1311 TCLP Inorganic	10/21/2010 14:30	50	1000					WC-Hanford, Inc.	
1010048-03	1311 TCLP Organic	10/21/2010 14:30	100	2000					WC-Hanford, Inc.	From L010255 by RGC on 11/09/2010
1010061-01	1311 TCLP Inorganic	10/21/2010 14:30	50	1000					WC-Hanford, Inc.	
1010061-01	1311 TCLP Organic	10/21/2010 14:30	50	1000					WC-Hanford, Inc.	
1010084-01	1311 TCLP Inorganic	10/21/2010 14:30	100	2000					WC-Hanford, Inc.	
1010084-01	1311 TCLP Organic	10/21/2010 14:30	100	2000					WC-Hanford, Inc.	
1010084-02	1311 TCLP Inorganic	10/21/2010 14:30	100	2000					WC-Hanford, Inc.	
1010084-02	1311 TCLP Organic	10/21/2010 14:30	100	2000					WC-Hanford, Inc.	
L010310-BLK1	QC	10/21/2010 14:30	1000	1000						
L010310-BLK2	QC	10/21/2010 14:30	1000	1000						

Extracts Relinquished By Date

Extracts Received By Date

Lionville Laboratory

TCLP EXTRACTION RECORD
(NON-VOLATILES)

LOGBOOK # 814

Start Date: 10/21/10	End Date: 10/22/10	Tumbler Speed: 30 RPM
Start Time: 1430	End Time: 1200	Leachate Batch #: L010510
Analyst: [illegible]	Analyst: [illegible]	Leachate Page: 1 of 2
SOP: SPI-1311.1	Method: 1311	Room Temp. (°C):
		Start 21 /Finish 21
		Acceptance Criteria: 23°C ± 2°

LvL #: L016310 Client ID#: pH After 5 Min: pH After Acid/Heat: Extraction Fluid/pH: #1 4.88 Sample Wt.(g): Extract Fluid Vol.(mL): pH After Extraction:	Initial Filtration Data and Comments: Solids: ____% / NA BK Initial Filtrate Added:
LvL #: 1016003 - 2 Client ID#: pH After 5 Min: 8.99 pH After Acid/Heat: 1.76 Extraction Fluid/pH: #1 4.88 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 2000 pH After Extraction:	Initial Filtration Data and Comments: Solids: ____% / NA 02 Initial Filtrate Added:
LvL # 1010022-001 Client ID#: pH After 5 Min: 9.17 pH After Acid/Heat: 1.85 Extraction Fluid/pH: #1 4.88 Sample Wt.(g): 50 Extract Fluid Vol.(mL): 1200 pH After Extraction:	Initial Filtration Data and Comments: Solids: ____% / NA 002 Initial Filtrate Added:
LvL #: 1010022-002 Client ID#: pH After 5 Min: 8.76 pH After Acid/Heat: 2.46 Extraction Fluid/pH: #1 4.88 Sample Wt.(g): 50 Extract Fluid Vol.(mL): 1200 pH After Extraction:	Initial Filtration Data and Comments: Solids: ____% / NA 002 Initial Filtrate Added:

Standard	ID	Prep Date	Expir Date
MS			

Reviewed By/Date [illegible] 11/1/10

Lionville Laboratory

TCLP EXTRACTION RECORD
(NON-VOLATILES)

LOGBOOK # 814

Start Date: 10/21/10	End Date: 10/22/10	Tumbler Speed: 30 RPM
Start Time: 1430	End Time: 1200	Leachate Batch #: L010510
Analyst:: [illegible]	Analyst: [illegible]	Leachate Page: 2 of 2
SOP: SPI-1311.1	Method: 1311	Room Temp. (°C):
		Start 21 /Finish 21
		Acceptance Criteria: 23°C ± 2°

LvL #: 1010048-003	Initial Filtration Data and Comments: 003
Client ID#:	Solids: ____% / NA
pH After 5 Min: 7.16	
pH After Acid/Heat: 2.53	
Extraction Fluid/pH: #1 4.93	
Sample Wt.(g): 100	
Extract Fluid Vol.(mL): 2000	
pH After Extraction:	Initial Filtrate Added:
LvL #: 1010061-001	Initial Filtration Data and Comments: 001
Client ID#:	Solids: ____% / NA
pH After 5 Min: 8.41	
pH After Acid/Heat: 1.	
Extraction Fluid/pH: #1 4.88	
Sample Wt.(g): 50	
Extract Fluid Vol.(mL): 1000	
pH After Extraction:	Initial Filtrate Added:
LvL # 1010084-001	Initial Filtration Data and Comments: 001
Client ID#:	Solids: ____% / NA
pH After 5 Min: 7.78	
pH After Acid/Heat: 2.13	
Extraction Fluid/pH: #1 4.88	
Sample Wt.(g): 100	
Extract Fluid Vol.(mL): 2000	
pH After Extraction: 4.99	Initial Filtrate Added:
LvL #: 1010084-002	Initial Filtration Data and Comments: 002
Client ID#:	Solids: ____% / NA
pH After 5 Min: 7.21	
pH After Acid/Heat: 1.84	
Extraction Fluid/pH: #1 4.88	
Sample Wt.(g): 100	
Extract Fluid Vol.(mL): 200	
pH After Extraction: 4.95	Initial Filtrate Added:

Standard	ID	Prep Date	Expir Date
MS			

Reviewed By/Date [illegible] 11/1/10

PREPARATION BENCH SHEET

L010255

Lionville Laboratory

Printed: 11/9/2010 11:04:50AM

0000000819

Matrix: Solid **Prepared using: WETCHEM - SW 1311** **(No Surrogate)**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1009115-01	1311 TCLP Inorganic	10/19/2010 16:20	25	500					WC-Hanford, Inc.	
1009115-02	1311 TCLP Inorganic	10/19/2010 16:20	25	500					WC-Hanford, Inc.	
1009115-03	1311 TCLP Inorganic	10/19/2010 16:20	25	500					WC-Hanford, Inc.	
1009124-01	1311 TCLP Inorganic	10/19/2010 16:20	17.38	347.6					Safety & Ecology Corporation	
1009124-02	1311 TCLP Inorganic	10/19/2010 16:20	7.46	149.2					Safety & Ecology Corporation	
1009158-01	1311 TCLP Inorganic	10/19/2010 16:20	100	2000					Bechtel Bettis Inc.	
1010041-01	1311 TCLP Organic	10/19/2010 16:20	50	1000					WC-Hanford, Inc.	
1010048-01	1311 TCLP Inorganic	10/19/2010 16:20	100	2000					WC-Hanford, Inc.	
1010048-01	1311 TCLP Organic	10/19/2010 16:20	100	2000					WC-Hanford, Inc.	
1010048-02	1311 TCLP Inorganic	10/19/2010 16:20	100	2000					WC-Hanford, Inc.	
1010048-02	1311 TCLP Organic	10/19/2010 16:20	100	2000					WC-Hanford, Inc.	
L010255-BLK1	QC	10/19/2010 16:20	100	2000						

Extracts Relinquished By Date

Extracts Received By Date

Lionville Laboratory

TCLP EXTRACTION RECORD
(NON-VOLATILES)

LOGBOOK # 814

Start Date: 10/14/10	End Date: 10/20/10	Tumbler Speed: 30 RPM
Start Time: 1320	End Time: 11 AM	Leachate Batch #: L010255
Analyst:: JJS	Analyst: JJS	Leachate Page: 2 of 3
SOP: SPI-1311.1	Method: 1311.1	Room Temp. (°C):
		Start 21 /Finish 21
		Acceptance Criteria: 23°C ± 2°

LvL #: 1009159	Initial Filtration Data and Comments: 001
Client ID#: 01	Solids: ____% / NA
pH After 5 Min: 3.91	
pH After Acid/Heat: ~~—~~	
Extraction Fluid/pH: #1 4.88	
Sample Wt.(g): 17.38	
Extract Fluid Vol.(mL): 347.6	
pH After Extraction:	Initial Filtrate Added:

LvL #: 1009159	Initial Filtration Data and Comments: 002
Client ID#: 02	Solids: ____% / NA
pH After 5 Min: 3.95	
pH After Acid/Heat: ~~—~~	
Extraction Fluid/pH: #1 4.88	
Sample Wt.(g): 7.46	
Extract Fluid Vol.(mL): 149.2	
pH After Extraction:	Initial Filtrate Added:

LvL # 1009158-001	Initial Filtration Data and Comments: 001
Client ID#:	Solids: ____% / NA
pH After 5 Min: 8.76	
pH After Acid/Heat: 1.47	
Extraction Fluid/pH: #1 4.88	
Sample Wt.(g): 100	
Extract Fluid Vol.(mL): 2000	
pH After Extraction:	Initial Filtrate Added:

LvL #: 1010048-01	Initial Filtration Data and Comments: 001
Client ID#:	Solids: ____% / NA RAD
pH After 5 Min: 7.86	
pH After Acid/Heat: 1.92	
Extraction Fluid/pH: #1 4.88	
Sample Wt.(g): 100	
Extract Fluid Vol.(mL): 2000	
pH After Extraction:	Initial Filtrate Added:

Standard	ID	Prep Date	Expir Date
MS			

Reviewed By/Date [signature] 10/28/10

Lionville Laboratory

TCLP EXTRACTION RECORD
(NON-VOLATILES)

LOGBOOK # 814

Start Date: 10/19/10	End Date: 10/20/10	Tumbler Speed: 30 RPM
Start Time: 1320	End Time: 1100	Leachate Batch #: L010255
Analyst: JJ	Analyst:	Leachate Page: 3 of 3
SOP: SPI-1311.1	Method: 1311.1	Room Temp. (°C): Start 21°C /Finish 21.6
		Acceptance Criteria: 23°C ± 2°

LvL #: 1010048-002 Client ID#: pH After 5 Min: 9.27 pH After Acid/Heat: 1.86 Extraction Fluid/pH: #1 4.88 Sample Wt.(g): 100 Extract Fluid Vol.(mL): 2000 pH After Extraction: 5.76	Initial Filtration Data and Comments: Solids: ____% / NA 002 Initial Filtrate Added:
LvL #: L010255 Client ID#: NA pH After 5 Min: NA pH After Acid/Heat: Extraction Fluid/pH: #2 4.88 Sample Wt.(g): Extract Fluid Vol.(mL): 1000 pH After Extraction: NA	Initial Filtration Data and Comments: Solids: ____% / NA BK Initial Filtrate Added:
LvL # Client ID#: pH After 5 Min: pH After Acid/Heat: Extraction Fluid/pH: Sample Wt.(g): Extract Fluid Vol.(mL): pH After Extraction:	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:
LvL #: Client ID#: pH After 5 Min: pH After Acid/Heat: Extraction Fluid/pH: Sample Wt.(g): Extract Fluid Vol.(mL): pH After Extraction:	Initial Filtration Data and Comments: Solids: ____% / NA Initial Filtrate Added:

Standard	ID	Prep Date	Expir Date
MS			

Reviewed By/Date: 10/28/10

SPI-1311.1-A-0310

Page # 38

PREPARATION BENCH SHEET

L010333

Lionville Laboratory

Printed: 10/27/2010 2:54:55PM

Matrix: Water **Prepared using: Extraction - SW 3520C** **Surrogate used: 1001763**

Lab Number	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1010041-01	1311/8270C TCLP SVOC	10/25/2010 13:49	200	1				500	WC-Hanford, Inc.	
1010048-01	1311/8270C TCLP SVOC	10/25/2010 13:49	200	1				500	WC-Hanford, Inc.	
1010048-02	1311/8270C TCLP SVOC	10/25/2010 13:49	200	1				500	WC-Hanford, Inc.	
1010049-01	1311/8270C TCLP SVOC	10/25/2010 13:49	200	1				500	WC-Hanford, Inc.	
1010084-01	1311/8270C TCLP SVOC	10/25/2010 13:49	200	1				500	WC-Hanford, Inc.	
1010084-02	1311/8270C TCLP SVOC	10/25/2010 13:49	200	1				500	WC-Hanford, Inc.	
L010333-BLK1	QC	10/25/2010 13:49	200	1				500		
L010333-BLK2	QC	10/25/2010 13:49	200	1				500		leach blk L010310
L010333-BS1	QC	10/25/2010 13:49	200	1	1000933		600	500		
L010333-MS1	QC	10/25/2010 13:49	200	1	1000933	1010041-01	600	500		
L010333-MS2	QC	10/25/2010 13:49	200	1	1000933	1010048-01	600	500		
L010333-MS3	QC	10/25/2010 13:49	200	1	1000933	1010049-01	600	500		
L010333-MS4	QC	10/25/2010 13:49	200	1	1000933	1010084-01	600	500		
L010333-MSD1	QC	10/25/2010 13:49	200	1	1000933	1010041-01	600	500		
L010333-MSD2	QC	10/25/2010 13:49	200	1	1000933	1010048-01	600	500		
L010333-MSD3	QC	10/25/2010 13:49	200	1	1000933	1010049-01	600	500		
L010333-MSD4	QC	10/25/2010 13:49	200	1	1000933	1010084-01	600	500		

Extracts Relinquished By — Date: 10/27/10 1454

Extracts Received By — Date: 10/27/10 1500

PREPARATION BENCH SHEET

L010381

Lionville Laboratory

Printed: 11/3/2010 1:41:56PM

Matrix: Water **Prepared using: SVOCGCMS - SW 3520C** **Surrogate used: 1001763**

Lab Number	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1010048-03	1311/8270C TCLP SVOC	10/27/2010 17:08	200	1				500	WC-Hanford, Inc.	
~~1010068-01~~	~~1311/8270C TCLP SVOC~~	~~10/27/2010 17:08~~	~~500~~	~~1~~				~~500~~	WC-Hanford, Inc.	~~Added for BatchQC in: L010381~~
1010068-01	8270C TCL SVOC	10/27/2010 17:08	500	1				500	WC-Hanford, Inc.	
L010381-BLK1	QC	10/27/2010 17:08	200	1				500		TCLP
L010381-BLK2	QC	10/27/2010 17:08	1000	1				500		SVOC
L010381-BLK3	QC	10/27/2010 17:08	200	1				500		Leach blank L010255 for 101041,1010048
L010381-BLK4	QC	10/27/2010 17:08	200	1				500		leach blk L010153 for 1010049
L010381-BS1	QC	10/27/2010 17:08	200	1	1001857		600	500		TCLP
L010381-BS2	QC	10/27/2010 17:08	1000	1	1001857		600	500		SVOC
L010381-MS1	QC	10/27/2010 17:08	500	1	1001857	1010068-01	600	500		SVOC
L010381-MSD1	QC	10/27/2010 17:08	500	1	1001857	1010068-01	600	500		SVOC

11/3/10

Extracts Relinquished By Date

11-3-10 1130

Extracts Received By Date

Lionville Laboratory Use Only

1010 048

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client WC Hanford OAF# RC-182

Est. Final Proj. Sampling Date

Project#

Project Contact/Phone#

Lionville Laboratory Project Manager O. J

QC SW Del STD TAT 15 Days

Date Rec'd 10-12-10 Date Due 10-27-10

Refrigerator #		A			B			C		D						
		2	1		2			2		2	1					
#/Type Container	~~Liquid~~ Solid	1AG	1		1AG			1AG		1AG	1					
Volume		120	1		120			120		120	1					
Preservatives		—	1		—			—		—	1					
ANALYSES REQUESTED →		VOA	BNA	Pest/~~PCB~~	Herb	TCLP BNA				Metal Hg	CN	TCLP MET.	TCLP Hg			
										INORG						
		ORGANIC														

Lionville Laboratory Use Only

MATRIX CODES:
S- Soil
SE- Sediment
SO- Solid
SL- Sludge
W- Water
O- Oil
A- Air
DS- Drum Solids
DL- Drum Liquids
L- EP/TCLP Leachate
WI- Wipe
X- Other
F- Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	8270	8081	TCLP 8270			Met①		TCLP	RCRA				
01	J1CCLO			soil	10-6-10	1040	X	X	X			X		X	X				
02	1 L1			1	1	1250	X		X			X		X	X				
03	1 L2			1	1	1425	X		X			X		X	X				

Special Instructions: Run matrix QC

Met① = HSL + B, Mo, Sl
NOTL

Special Instructions:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	10/12/10	0950

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

000000824

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-182-010	Page 1 of 1
Collector ~~D. Henjum~~ 10/6/10 Leach	Company Contact / Telephone No.: S. Van Den Hende / 509-551-3934	Project Coordinator: KESSNER, JH	Price Code ~~8L~~ SED 10/6/10 8K	Data Turnaround ~~21 Days~~ SV 9/29/10 15 Day
Project Designation: ARRA 100F Remaining Sites Remediation - Soil In-Process	Sampling Location: 100-F-49 ~~100-F-57 Water Pumphouse Debris Pothole~~ SV 10-5-10	SAF No.: RC-182		
Ice Chest No.: WCH-11-008	Field Logbook No.: EL-1651 / COA: S00F578100	Method of Shipment: FEDEX		
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A100558	Bill of Lading/Air Bill No.: SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

~~None~~ SEB 10-11-10
Potential RAD < DOT Limits

Special Handling and/or Storage

Cool 4 Degrees C

Preservation	Cool 4C	None	Cool 4C	None	None	Cool 4C					
Type of Container	aG	aG	aG	aG	Snap Vial	aG					
No. of Container(s)	1	1	1	1	1	0					
Volume	120mL	120mL	120mL	120mL	60mL	120mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TCLP Semi-VOA - 1311/8270A	RCF GEA Shipping Screen	Pesticides (8081)					
Sample No.	Matrix *	Sample Date	Sample Time								
J1CCL0	SOIL	10/6/10	1040	✓	✓	✓	✓	SV 9/29/10	✓		
J1CCL1	SOIL	10/6/10	1250	✓	✓	✓	✓				
J1CCL2	SOIL	10/6/10	1425	✓	✓	✓	✓				
~~J1CCL3~~ ADD 10/6/10	SOIL										
~~J1CCL4~~	SOIL										

CHAIN OF POSSESSION	Sign/Print Names			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	
E Leach	10/6/10 1545	JR DeBruigne	10/6/10 1545	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	
JR DeBruigne	10/6/10 1630	S. Howell	10-6-10 1630	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	
J.E. Benkul WCH	10-11-10 1000	FED EX		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	
Fed Ex	10-12-10 0850	VICTOR HERNANDEZ	10-12-10 0954	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	

SPECIAL INSTRUCTIONS

Leach and hold TCLP per Joan Kessner

(1) ICP Metals - 6010TR (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}
(2) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}

ADD Pesticides (8081) to J1CCL0. SED 10/6/10

Sterling Howell was unavailable to relinquish custody of samples on 10-11-10. J.E. Benkul will take custody of these samples stored 1060 Battelle, Fridge 18. JEB 10-11-10

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

REVIEWED BY JR DATE 10/11/10

WCH-EE-011

5838888825

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hanford Date: 10/12/10

Project/SAF/SOW/Release #: RCL 182

LvL Batch #: 1010048 Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 796329936487
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	**Temp** 2.1 °C		Cooler # WCH-11008
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify)
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact. signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvL) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no. then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA. TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvL Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted _____		Date _____	

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

Analytical Report for Semivolatile Organic Compounds by SW846 8270C

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1CCL0	1010048-01	Soil	10/06/2010 10:40	10/12/2010 09:50
J1CCL1	1010048-02	Soil	10/06/2010 12:50	10/12/2010 09:50
J1CCL2	1010048-03	Soil	10/06/2010 14:25	10/12/2010 09:50

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Case Narrative

Client: WC-HANFORD RC-182 K2440
LVL #: 1010048

W.O. #: 60049-001-001-0001-00
Date Received: 10-12-2010

SEMIVOLATILE

Three (3) soil samples were collected on 10-06-2010.

The samples and associated QC samples were extracted 10-17-2010 and analyzed 10-21,25-27-2010 according to Lionville Laboratory SOPs. The extraction procedure was based on SW846 Method 3540C, and the analysis procedure was based on SW846 Method 8270C for TCL Semivolatile target compounds.

Lionville Laboratory (LvL) is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements:

1. The results presented in this report are derived from a sample(s) that met LvL's sample acceptance policy.

2. Samples were extracted and analyzed within holding time.

3. Due to sample matrix samples J1CCL0, L010222-MS2/MSD2 had an elevated final volume of 4mls. Sample J1CCL1 had an elevated final volume of 2mls. Reporting limits have been adjusted to reflect the change.

4. Non-target compounds were detected in these samples.

5. Sample J1CCL2 required a 2x instrument dilution and samples J1CCL0, J1CCL1, and L010222-MS2/MSD2 required a 10x instrument dilution due to sample matrix.

6. Two (2) of forty-two (42) obtainable surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 10MS308) has been enclosed. The loss of the surrogate 2,4,6-Tribromophenol in the samples L010222-BLK1 and L010222-BS1 appears to be due to a chemical reaction rather than to a problem with the extraction process. Peaks on the chromatogram indicate this reaction. The conversion compound has been reported as a non-target compound (TIC) in sample L010222-BLK1 at a retention time of 19.554 minutes. No TICs were reported for the BS, but the conversion compound was seen at 19.547 minutes. This surrogate loss has been associated with the use of soxhlet extractions.

7. The method blank was below the reporting limit for all target compounds.

8. All blank spike recoveries were within acceptance criteria.

9. Ninety-five (95) of one hundred and twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 10MS308) has been enclosed.

10. The samples were reported on a dry weight basis.

11. All initial calibrations associated with this data set were within acceptance criteria.

12. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

13. Internal standard area and retention time criteria were met.

14. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

15. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hardcopy package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Iain Daniels
LvL Laboratory Manager

11/3/10
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 10MS30F

Initiator: Shawn Saylor
Date: 10-29-10
Client: Weiskopf RC-1F2

Batch: 1010048
Samples: BLK1, MS, MSD
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: Soil
Prep Batch: 1010222

1. Reason for SDR

a. COC Discrepancy
__ Tech Profile Error __ Client Request __ Sampler Error on C-O-C
__ Transcription Error __ Wrong Test Code __ Other _____

b. General Discrepancy
__ Missing Sample/Extract __ Container Broken __ Wrong Sample Pulled __ Label ID's Illegible
__ Hold Time Exceeded __ Insufficient Sample __ Preservation Wrong __ Received Past Hold
__ Improper Bottle Type __ Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

(1) <10% recovery of 2,4,6-tribromophenol in 1010222-BLK1

(2) Spikes out of QC acceptance limits in MS, MSD but BS is ok (diluted out)

2. Known or Probable Causes(s) (1) loss of surrogate appears to be due to chemical reaction. Conversion compd reported as TICs in Blank and seen in BS. (2) Matrix effect samples required a 10 fold instrumental dilution for analysis and elevated final volume

3. Discussion and Proposed Action

Other Description:
(1) + (2) narrate Samples all non detects no impact on the data

__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

4. Project Manager Instructions...signature/date: 11/1/10
__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: Catherine Carey 10/31/10 Other Explanation:
__ Verified re-[log][leach][extract][digest][analysis] (circle)
__ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

When Final Action has been recorded, forward original to QA for diposition.

Route
__ Lab Manager: Daniels
__ Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): ~~Ford~~
__ Log-in: King

Route
__ Metals: Welsh / _____
__ Inorganic: Perrone / _____
__ GC/LC: Carey / _____
__ MS VOA: Rubino / _____
__ MS BNA: Garden / _____
__ Other: _____

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

J1CCL0

1010048-01 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Semivolatile Organic Compounds by SW846 8270C								
1,2,4-Trichlorobenzene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
1,2-Dichlorobenzene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
1,3-Dichlorobenzene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
1,4-Dichlorobenzene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
2,4,5-Trichlorophenol	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
2,4,6-Trichlorophenol	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
2,4-Dichlorophenol	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
2,4-Dimethylphenol	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
2,4-Dinitrophenol	71400 U	71400	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
2,4-Dinitrotoluene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
2,6-Dinitrotoluene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
2-Chloronaphthalene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
2-Chlorophenol	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
2-Methylnaphthalene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
2-Methylphenol	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
2-Nitroaniline	71400 U	71400	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
2-Nitrophenol	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
3,3'-Dichlorobenzidine	28500 U	28500	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
3-Nitroaniline	71400 U	71400	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
4,6-Dinitro-2-methylphenol	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
4-Bromophenyl Phenyl Ether	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
4-Chloro-3-methylphenol	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
4-Chloroaniline	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
4-Chlorophenyl Phenyl Ether	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
3- and/or 4-Methylphenol	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
4-Nitroaniline	71400 U	71400	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
4-Nitrophenol	71400 U	71400	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Acenaphthene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Acenaphthylene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Anthracene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Benz[a]anthracene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Benzo[a] pyrene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Benzo[b] fluoranthene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Benzo[g,h,i] perylene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Benzo[k] fluoranthene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Bis(2-chloroethoxy) methane	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Bis(2-chloroethyl) ether	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Bis(2-chloroisopropyl) ether	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Bis(2-ethylhexyl) phthalate	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

J1CCL0

1010048-01 (Soil)

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Butyl Benzyl Phthalate	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Carbazole	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Chrysene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Dibenz[a,h]anthracene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Dibenzofuran	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Diethyl Phthalate	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Dimethyl Phthalate	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Di-n-butyl Phthalate	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Di-n-octyl Phthalate	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Fluoranthene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Fluorene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Hexachlorobenzene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Hexachlorobutadiene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Hexachlorocyclopentadiene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Hexachloroethane	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Indeno[1,2,3-cd]pyrene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Isophorone	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Naphthalene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Nitrobenzene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
N-Nitrosodi-n-propylamine	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
N-Nitrosodiphenylamine	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Pentachlorophenol	71400 U	71400	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Phenanthrene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Phenol	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Pyrene	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
TIC:Alkane 3	**162000** J, D		ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
TIC:Alkane 4	**140000** J, D		ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
TIC:Alkane 2	**182000** J, D		ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
TIC:Alkane 1	**128000** J, D		ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
TIC:Aldol 1	**404000** A, B, J, D		ug/kg dry	10	L010222	10/17/2010	10/25/2010	8270C
Surrogate: 2-Fluorophenol	*55 %*	*25-121*			*L010222*	*10/17/2010*	*10/25/2010*	*8270C*
Surrogate: Phenol-d5	*47 %*	*24-113*			*L010222*	*10/17/2010*	*10/25/2010*	*8270C*
Surrogate: Nitrobenzene-d5	*47 %*	*23-120*			*L010222*	*10/17/2010*	*10/25/2010*	*8270C*
Surrogate: 2-Fluorobiphenyl	*70 %*	*30-115*			*L010222*	*10/17/2010*	*10/25/2010*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*36 %*	*19-122*			*L010222*	*10/17/2010*	*10/25/2010*	*8270C*
Surrogate: p-Terphenyl-d14	*84 %*	*18-137*			*L010222*	*10/17/2010*	*10/25/2010*	*8270C*

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

J1CCL1

1010048-02 (Soil)

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
1,2-Dichlorobenzene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
1,3-Dichlorobenzene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
1,4-Dichlorobenzene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
2,4,5-Trichlorophenol	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
2,4,6-Trichlorophenol	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
2,4-Dichlorophenol	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
2,4-Dimethylphenol	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
2,4-Dinitrophenol	35700 U	35700	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
2,4-Dinitrotoluene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
2,6-Dinitrotoluene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
2-Chloronaphthalene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
2-Chlorophenol	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
2-Methylnaphthalene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
2-Methylphenol	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
2-Nitroaniline	35700 U	35700	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
2-Nitrophenol	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
3,3'-Dichlorobenzidine	14300 U	14300	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
3-Nitroaniline	35700 U	35700	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
4,6-Dinitro-2-methylphenol	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
4-Bromophenyl Phenyl Ether	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
4-Chloro-3-methylphenol	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
4-Chloroaniline	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
4-Chlorophenyl Phenyl Ether	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
3- and/or 4-Methylphenol	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
4-Nitroaniline	35700 U	35700	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
4-Nitrophenol	35700 U	35700	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Acenaphthene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Acenaphthylene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Anthracene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Benz[a]anthracene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Benzo[a] pyrene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Benzo[b] fluoranthene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Benzo[g,h,i] perylene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Benzo[k] fluoranthene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Bis(2-chloroethoxy) methane	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Bis(2-chloroethyl) ether	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Bis(2-chloroisopropyl) ether	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Bis(2-ethylhexyl) phthalate	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

J1CCL1

1010048-02 (Soil)

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Butyl Benzyl Phthalate	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Carbazole	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Chrysene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Dibenz[a,h]anthracene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Dibenzofuran	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Diethyl Phthalate	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Dimethyl Phthalate	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Di-n-butyl Phthalate	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Di-n-octyl Phthalate	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Fluoranthene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Fluorene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Hexachlorobenzene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Hexachlorobutadiene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Hexachlorocyclopentadiene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Hexachloroethane	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Indeno[1,2,3-cd]pyrene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Isophorone	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Naphthalene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Nitrobenzene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
N-Nitrosodi-n-propylamine	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
N-Nitrosodiphenylamine	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Pentachlorophenol	35700 U	35700	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Phenanthrene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Phenol	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Pyrene	7140 U	7140	ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
TIC:Aldol 1	**316000** A, B, J, D		ug/kg dry	10	L010222	10/17/2010	10/26/2010	8270C
Surrogate: 2-Fluorophenol	*63 %*	*25-121*			*L010222*	*10/17/2010*	*10/26/2010*	*8270C*
Surrogate: Phenol-d5	*60 %*	*24-113*			*L010222*	*10/17/2010*	*10/26/2010*	*8270C*
Surrogate: Nitrobenzene-d5	*55 %*	*23-120*			*L010222*	*10/17/2010*	*10/26/2010*	*8270C*
Surrogate: 2-Fluorobiphenyl	*78 %*	*30-115*			*L010222*	*10/17/2010*	*10/26/2010*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*41 %*	*19-122*			*L010222*	*10/17/2010*	*10/26/2010*	*8270C*
Surrogate: p-Terphenyl-d14	*82 %*	*18-137*			*L010222*	*10/17/2010*	*10/26/2010*	*8270C*

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

J1CCL2

1010048-03 (Soil)

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,2,4-Trichlorobenzene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
1,2-Dichlorobenzene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
1,3-Dichlorobenzene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
1,4-Dichlorobenzene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
2,4,5-Trichlorophenol	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
2,4,6-Trichlorophenol	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
2,4-Dichlorophenol	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
2,4-Dimethylphenol	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
2,4-Dinitrophenol	3340 U	3340	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
2,4-Dinitrotoluene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
2,6-Dinitrotoluene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
2-Chloronaphthalene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
2-Chlorophenol	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
2-Methylnaphthalene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
2-Methylphenol	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
2-Nitroaniline	3340 U	3340	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
2-Nitrophenol	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
3,3'-Dichlorobenzidine	1340 U	1340	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
3-Nitroaniline	3340 U	3340	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
4,6-Dinitro-2-methylphenol	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
4-Bromophenyl Phenyl Ether	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
4-Chloro-3-methylphenol	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
4-Chloroaniline	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
4-Chlorophenyl Phenyl Ether	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
3- and/or 4-Methylphenol	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
4-Nitroaniline	3340 U	3340	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
4-Nitrophenol	3340 U	3340	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Acenaphthene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Acenaphthylene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Anthracene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Benz[a]anthracene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Benzo[a] pyrene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Benzo[b] fluoranthene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Benzo[g,h,i] perylene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Benzo[k] fluoranthene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Bis(2-chloroethoxy) methane	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Bis(2-chloroethyl) ether	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Bis(2-chloroisopropyl) ether	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Bis(2-ethylhexyl) phthalate	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

J1CCL2

1010048-03 (Soil)

Lionville Laboratory

Semivolatile Organic Compounds by SW846 8270C

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Butyl Benzyl Phthalate	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Carbazole	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Chrysene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Dibenz[a,h]anthracene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Dibenzofuran	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Diethyl Phthalate	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Dimethyl Phthalate	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Di-n-butyl Phthalate	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Di-n-octyl Phthalate	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Fluoranthene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Fluorene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Hexachlorobenzene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Hexachlorobutadiene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Hexachlorocyclopentadiene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Hexachloroethane	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Indeno[1,2,3-cd]pyrene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Isophorone	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Naphthalene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Nitrobenzene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
N-Nitrosodi-n-propylamine	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
N-Nitrosodiphenylamine	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Pentachlorophenol	3340 U	3340	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Phenanthrene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Phenol	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Pyrene	668 U	668	ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
TIC:Unknown 1	**1170** B, J, D		ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
TIC:Unknown 2	**373** J, D		ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
TIC:Alkane 1	**363** J, D		ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
TIC:Aldol 2	**51800** A, B, J, D		ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
TIC:Aldol 1	**411** A, B, J, D		ug/kg dry	2	L010222	10/17/2010	10/21/2010	8270C
Surrogate: 2-Fluorophenol	*55 %*	*25-121*			*L010222*	*10/17/2010*	*10/21/2010*	*8270C*
Surrogate: Phenol-d5	*62 %*	*24-113*			*L010222*	*10/17/2010*	*10/21/2010*	*8270C*
Surrogate: Nitrobenzene-d5	*57 %*	*23-120*			*L010222*	*10/17/2010*	*10/21/2010*	*8270C*
Surrogate: 2-Fluorobiphenyl	*73 %*	*30-115*			*L010222*	*10/17/2010*	*10/21/2010*	*8270C*
Surrogate: 2,4,6-Tribromophenol	*87 %*	*19-122*			*L010222*	*10/17/2010*	*10/21/2010*	*8270C*
Surrogate: p-Terphenyl-d14	*79 %*	*18-137*			*L010222*	*10/17/2010*	*10/21/2010*	*8270C*

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010222 - SW 3540C									
Blank (L010222-BLK1)			Prepared: 10/17/2010 Analyzed: 10/21/2010						
1,2,4-Trichlorobenzene	330 U	330	ug/kg wet						
1,2-Dichlorobenzene	330 U	330	ug/kg wet						
1,3-Dichlorobenzene	330 U	330	ug/kg wet						
1,4-Dichlorobenzene	330 U	330	ug/kg wet						
2,4,5-Trichlorophenol	330 U	330	ug/kg wet						
2,4,6-Trichlorophenol	330 U	330	ug/kg wet						
2,4-Dichlorophenol	330 U	330	ug/kg wet						
2,4-Dimethylphenol	330 U	330	ug/kg wet						
2,4-Dinitrophenol	1650 U	1650	ug/kg wet						
2,4-Dinitrotoluene	330 U	330	ug/kg wet						
2,6-Dinitrotoluene	330 U	330	ug/kg wet						
2-Chloronaphthalene	330 U	330	ug/kg wet						
2-Chlorophenol	330 U	330	ug/kg wet						
2-Methylnaphthalene	330 U	330	ug/kg wet						
2-Methylphenol	330 U	330	ug/kg wet						
2-Nitroaniline	1650 U	1650	ug/kg wet						
2-Nitrophenol	330 U	330	ug/kg wet						
3,3'-Dichlorobenzidine	660 U	660	ug/kg wet						
3-Nitroaniline	1650 U	1650	ug/kg wet						
4,6-Dinitro-2-methylphenol	330 U	330	ug/kg wet						
4-Bromophenyl Phenyl Ether	330 U	330	ug/kg wet						
4-Chloro-3-methylphenol	330 U	330	ug/kg wet						
4-Chloroaniline	330 U	330	ug/kg wet						
4-Chlorophenyl Phenyl Ether	330 U	330	ug/kg wet						
3- and/or 4-Methylphenol	330 U	330	ug/kg wet						
4-Nitroaniline	1650 U	1650	ug/kg wet						
4-Nitrophenol	1650 U	1650	ug/kg wet						
Acenaphthene	330 U	330	ug/kg wet						
Acenaphthylene	330 U	330	ug/kg wet						
Anthracene	330 U	330	ug/kg wet						
Benz[a]anthracene	330 U	330	ug/kg wet						
Benzo[a] pyrene	330 U	330	ug/kg wet						
Benzo[b] fluoranthene	330 U	330	ug/kg wet						
Benzo[g,h,i] perylene	330 U	330	ug/kg wet						
Benzo[k] fluoranthene	330 U	330	ug/kg wet						
Bis(2-chloroethoxy) methane	330 U	330	ug/kg wet						

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010222 - SW 3540C									
Blank (L010222-BLK1)			Prepared: 10/17/2010 Analyzed: 10/21/2010						
Bis(2-chloroethyl) ether	330 U	330	ug/kg wet						
Bis(2-chloroisopropyl) ether	330 U	330	ug/kg wet						
Bis(2-ethylhexyl) phthalate	330 U	330	ug/kg wet						
Butyl Benzyl Phthalate	330 U	330	ug/kg wet						
Carbazole	330 U	330	ug/kg wet						
Chrysene	330 U	330	ug/kg wet						
Dibenz[a,h]anthracene	330 U	330	ug/kg wet						
Dibenzofuran	330 U	330	ug/kg wet						
Diethyl Phthalate	330 U	330	ug/kg wet						
Dimethyl Phthalate	330 U	330	ug/kg wet						
Di-n-butyl Phthalate	330 U	330	ug/kg wet						
Di-n-octyl Phthalate	330 U	330	ug/kg wet						
Fluoranthene	330 U	330	ug/kg wet						
Fluorene	330 U	330	ug/kg wet						
Hexachlorobenzene	330 U	330	ug/kg wet						
Hexachlorobutadiene	330 U	330	ug/kg wet						
Hexachlorocyclopentadiene	330 U	330	ug/kg wet						
Hexachloroethane	330 U	330	ug/kg wet						
Indeno[1,2,3-cd]pyrene	330 U	330	ug/kg wet						
Isophorone	330 U	330	ug/kg wet						
Naphthalene	330 U	330	ug/kg wet						
Nitrobenzene	330 U	330	ug/kg wet						
N-Nitrosodi-n-propylamine	330 U	330	ug/kg wet						
N-Nitrosodiphenylamine	330 U	330	ug/kg wet						
Pentachlorophenol	1650 U	1650	ug/kg wet						
Phenanthrene	330 U	330	ug/kg wet						
Phenol	330 U	330	ug/kg wet						
Pyrene	330 U	330	ug/kg wet						
Unknown 1 TIC	847 J		ug/kg wet						
Aldol 2 TIC	77000 A, J		ug/kg wet						
Aldol 1	590 A, J		ug/kg wet						
Unknown 3	2020 J		ug/kg wet						
Unknown 2	28000 J		ug/kg wet						
Surrogate: 2-Fluorophenol	*1130*		*ug/kg wet*	*2500.0*		*45*	*25-121*		
Surrogate: Phenol-d5	*1170*		*ug/kg wet*	*2500.0*		*47*	*24-113*		
Surrogate: Nitrobenzene-d5	*958*		*ug/kg wet*	*1666.7*		*57*	*23-120*		

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010222 - SW 3540C									
Blank (L010222-BLK1)			Prepared: 10/17/2010 Analyzed: 10/21/2010						
Surrogate: 2-Fluorobiphenyl	*960*		*ug/kg wet*	*1666.7*		*58*	*30-115*		
Surrogate: 2,4,6-Tribromophenol	*112*		*ug/kg wet*	*2500.0*		*4**	*19-122*		
Surrogate: p-Terphenyl-d14	*1210*		*ug/kg wet*	*1666.7*		*73*	*18-137*		
LCS (L010222-BS1)			Prepared: 10/17/2010 Analyzed: 10/21/2010						
1,2,4-Trichlorobenzene	1210	330	ug/kg wet	2000.0		60	45-110		
1,2-Dichlorobenzene	1530	330	ug/kg wet	2000.0		77	45-105		
1,3-Dichlorobenzene	1490	330	ug/kg wet	2000.0		75	40-100		
1,4-Dichlorobenzene	1510	330	ug/kg wet	2000.0		75	35-105		
2,4,5-Trichlorophenol	1140	330	ug/kg wet	2000.0		57	30-140		
2,4,6-Trichlorophenol	447	330	ug/kg wet	2000.0		22	20-110		
2,4-Dichlorophenol	1290	330	ug/kg wet	2000.0		65	40-110		
2,4-Dimethylphenol	1060	330	ug/kg wet	2000.0		53	30-105		
2,4-Dinitrophenol	1280 J	1650	ug/kg wet	2000.0		64	25-130		
2,4-Dinitrotoluene	1910	330	ug/kg wet	2000.0		95	50-115		
2,6-Dinitrotoluene	1870	330	ug/kg wet	2000.0		94	40-120		
2-Chloronaphthalene	1600	330	ug/kg wet	2000.0		80	45-115		
2-Chlorophenol	1520	330	ug/kg wet	2000.0		76	45-105		
2-Methylnaphthalene	1320	330	ug/kg wet	2000.0		66	45-110		
2-Methylphenol	1530	330	ug/kg wet	2000.0		77	40-120		
2-Nitroaniline	2060	1650	ug/kg wet	2000.0		103	45-120		
2-Nitrophenol	1320	330	ug/kg wet	2000.0		66	40-110		
3,3'-Dichlorobenzidine	1330	660	ug/kg wet	2000.0		66	15-130		
3-Nitroaniline	1670	1650	ug/kg wet	2000.0		84	40-130		
4,6-Dinitro-2-methylphenol	1460	330	ug/kg wet	2000.0		73	20-140		
4-Bromophenyl Phenyl Ether	1550	330	ug/kg wet	2000.0		77	45-115		
4-Chloro-3-methylphenol	1380	330	ug/kg wet	2000.0		69	35-115		
4-Chloroaniline	848	330	ug/kg wet	2000.0		42	10-100		
4-Chlorophenyl Phenyl Ether	1690	330	ug/kg wet	2000.0		84	45-110		
3- and/or 4-Methylphenol	1620	330	ug/kg wet	2000.0		81	40-120		
4-Nitroaniline	1930	1650	ug/kg wet	2000.0		97	40-130		
4-Nitrophenol	1610 J	1650	ug/kg wet	2000.0		81	15-140		
Acenaphthene	1690	330	ug/kg wet	2000.0		84	45-110		
Acenaphthylene	1670	330	ug/kg wet	2000.0		84	45-115		
Anthracene	1830	330	ug/kg wet	2000.0		91	45-130		
Benz[a]anthracene	1810	330	ug/kg wet	2000.0		90	45-130		
Benzo[a] pyrene	1960	330	ug/kg wet	2000.0		98	45-130		

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010222 - SW 3540C									
LCS (L010222-BS1)			Prepared: 10/17/2010 Analyzed: 10/21/2010						
Benzo[b] fluoranthene	1890	330	ug/kg wet	2000.0		94	40-130		
Benzo[g,h,i] perylene	1940	330	ug/kg wet	2000.0		97	45-125		
Benzo[k] fluoranthene	1840	330	ug/kg wet	2000.0		92	45-125		
Bis(2-chloroethoxy) methane	1430	330	ug/kg wet	2000.0		71	45-110		
Bis(2-chloroethyl) ether	1660	330	ug/kg wet	2000.0		83	40-110		
Bis(2-chloroisopropyl) ether	1670	330	ug/kg wet	2000.0		84	30-115		
Bis(2-ethylhexyl) phthalate	1920	330	ug/kg wet	2000.0		96	40-145		
Butyl Benzyl Phthalate	1900	330	ug/kg wet	2000.0		95	50-125		
Carbazole	1760	330	ug/kg wet	2000.0		88	40-140		
Chrysene	1800	330	ug/kg wet	2000.0		90	45-130		
Dibenz[a,h]anthracene	1930	330	ug/kg wet	2000.0		96	45-125		
Dibenzofuran	1670	330	ug/kg wet	2000.0		83	45-120		
Diethyl Phthalate	1900	330	ug/kg wet	2000.0		95	50-125		
Dimethyl Phthalate	1870	330	ug/kg wet	2000.0		93	45-130		
Di-n-butyl Phthalate	1830	330	ug/kg wet	2000.0		92	50-130		
Di-n-octyl Phthalate	1970	330	ug/kg wet	2000.0		98	40-150		
Fluoranthene	1920	330	ug/kg wet	2000.0		96	45-130		
Fluorene	1790	330	ug/kg wet	2000.0		90	45-120		
Hexachlorobenzene	1510	330	ug/kg wet	2000.0		75	45-130		
Hexachlorobutadiene	1300	330	ug/kg wet	2000.0		65	45-105		
Hexachlorocyclopentadiene	1010	330	ug/kg wet	2000.0		51	10-100		
Hexachloroethane	1520	330	ug/kg wet	2000.0		76	35-110		
Indeno[1,2,3-cd]pyrene	1950	330	ug/kg wet	2000.0		97	45-130		
Isophorone	1320	330	ug/kg wet	2000.0		66	40-110		
Naphthalene	1290	330	ug/kg wet	2000.0		64	40-110		
Nitrobenzene	1410	330	ug/kg wet	2000.0		70	40-105		
N-Nitrosodi-n-propylamine	1820	330	ug/kg wet	2000.0		91	30-130		
N-Nitrosodiphenylamine	1710	330	ug/kg wet	2000.0		85	50-120		
Pentachlorophenol	616 J	1650	ug/kg wet	2000.0		31	25-120		
Phenanthrene	1770	330	ug/kg wet	2000.0		89	50-120		
Phenol	1580	330	ug/kg wet	2000.0		79	40-115		
Pyrene	1780	330	ug/kg wet	2000.0		89	45-125		
Surrogate: 2-Fluorophenol	*1910*		*ug/kg wet*	*2500.0*		*77*	*25-121*		
Surrogate: Phenol-d5	*2080*		*ug/kg wet*	*2500.0*		*83*	*24-113*		
Surrogate: Nitrobenzene-d5	*1250*		*ug/kg wet*	*1666.7*		*75*	*23-120*		
Surrogate: 2-Fluorobiphenyl	*1400*		*ug/kg wet*	*1666.7*		*84*	*30-115*		
Surrogate: 2,4,6-Tribromophenol	*308*		*ug/kg wet*	*2500.0*		*12**	*19-122*		

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2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010222 - SW 3540C									
LCS (L010222-BS1)			Prepared: 10/17/2010 Analyzed: 10/21/2010						
Surrogate: p-Terphenyl-d14	*1550*		*ug/kg wet*	*1666.7*		*93*	*18-137*		
Matrix Spike (L010222-MS2)	**Source: 1010048-01**		Prepared: 10/17/2010 Analyzed: 10/27/2010						
1,2,4-Trichlorobenzene	14300 U	14300	ug/kg dry	2173.8	14300 U	*	45-110		
1,2-Dichlorobenzene	2190 J, D	14300	ug/kg dry	2173.8	14300 U	101	45-105		
1,3-Dichlorobenzene	14300 U	14300	ug/kg dry	2173.8	14300 U	*	40-100		
1,4-Dichlorobenzene	14300 U	14300	ug/kg dry	2173.8	14300 U	*	35-105		
2,4,5-Trichlorophenol	14300 U	14300	ug/kg dry	2173.8	14300 U	*	30-140		
2,4,6-Trichlorophenol	14300 U	14300	ug/kg dry	2173.8	14300 U	*	20-110		
2,4-Dichlorophenol	14300 U	14300	ug/kg dry	2173.8	14300 U	*	40-110		
2,4-Dimethylphenol	14300 U	14300	ug/kg dry	2173.8	14300 U	*	30-105		
2,4-Dinitrophenol	71700 U	71700	ug/kg dry	2173.8	71400 U	*	25-130		
2,4-Dinitrotoluene	14300 U	14300	ug/kg dry	2173.8	14300 U	*	50-115		
2,6-Dinitrotoluene	14300 U	14300	ug/kg dry	2173.8	14300 U	*	40-120		
2-Chloronaphthalene	2290 J, D	14300	ug/kg dry	2173.8	14300 U	105	45-115		
2-Chlorophenol	14300 U	14300	ug/kg dry	2173.8	14300 U	*	45-105		
2-Methylnaphthalene	2330 J, D	14300	ug/kg dry	2173.8	14300 U	107	45-110		
2-Methylphenol	2490 J, D	14300	ug/kg dry	2173.8	14300 U	114	40-120		
2-Nitroaniline	71700 U	71700	ug/kg dry	2173.8	71400 U	*	45-120		
2-Nitrophenol	14300 U	14300	ug/kg dry	2173.8	14300 U	*	40-110		
3,3'-Dichlorobenzidine	28700 U	28700	ug/kg dry	2173.8	28500 U	*	15-130		
3-Nitroaniline	71700 U	71700	ug/kg dry	2173.8	71400 U	*	40-130		
4,6-Dinitro-2-methylphenol	14300 U	14300	ug/kg dry	2173.8	14300 U	*	20-140		
4-Bromophenyl Phenyl Ether	2190 J, D	14300	ug/kg dry	2173.8	14300 U	101	45-115		
4-Chloro-3-methylphenol	14300 U	14300	ug/kg dry	2173.8	14300 U	*	35-115		
4-Chloroaniline	14300 U	14300	ug/kg dry	2173.8	14300 U	*	10-100		
4-Chlorophenyl Phenyl Ether	14300 U	14300	ug/kg dry	2173.8	14300 U	*	45-110		
3- and/or 4-Methylphenol	14300 U	14300	ug/kg dry	2173.8	14300 U	*	40-120		
4-Nitroaniline	71700 U	71700	ug/kg dry	2173.8	71400 U	*	40-130		
4-Nitrophenol	71700 U	71700	ug/kg dry	2173.8	71400 U	*	15-140		
Acenaphthene	2420 J, D	14300	ug/kg dry	2173.8	14300 U	111*	45-110		
Acenaphthylene	2380 J, D	14300	ug/kg dry	2173.8	14300 U	109	45-115		
Anthracene	2440 J, D	14300	ug/kg dry	2173.8	14300 U	112	45-130		
Benz[a]anthracene	2210 J, D	14300	ug/kg dry	2173.8	14300 U	102	45-130		
Benzo[a] pyrene	2310 J, D	14300	ug/kg dry	2173.8	14300 U	106	45-130		
Benzo[b] fluoranthene	2180 J, D	14300	ug/kg dry	2173.8	14300 U	100	40-130		
Benzo[g,h,i] perylene	14300 U	14300	ug/kg dry	2173.8	14300 U	*	45-125		

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010222 - SW 3540C									
Matrix Spike (L010222-MS2)	**Source: 1010048-01**		Prepared: 10/17/2010 Analyzed: 10/27/2010						
Benzo[k] fluoranthene	2430 J, D	14300	ug/kg dry	2173.8	14300 U	112	45-125		
Bis(2-chloroethoxy) methane	14300 U	14300	ug/kg dry	2173.8	14300 U	*	45-110		
Bis(2-chloroethyl) ether	14300 U	14300	ug/kg dry	2173.8	14300 U	*	40-110		
Bis(2-chloroisopropyl) ether	14300 U	14300	ug/kg dry	2173.8	14300 U	*	30-115		
Bis(2-ethylhexyl) phthalate	14300 U	14300	ug/kg dry	2173.8	14300 U	*	40-145		
Butyl Benzyl Phthalate	2550 J, D	14300	ug/kg dry	2173.8	14300 U	117	50-125		
Carbazole	2250 J, D	14300	ug/kg dry	2173.8	14300 U	103	40-140		
Chrysene	2340 J, D	14300	ug/kg dry	2173.8	14300 U	108	45-130		
Dibenz[a,h]anthracene	14300 U	14300	ug/kg dry	2173.8	14300 U	*	45-125		
Dibenzofuran	2290 J, D	14300	ug/kg dry	2173.8	14300 U	105	45-120		
Diethyl Phthalate	2550 J, D	14300	ug/kg dry	2173.8	14300 U	117	50-125		
Dimethyl Phthalate	2380 J, D	14300	ug/kg dry	2173.8	14300 U	109	45-130		
Di-n-butyl Phthalate	2750 J, D	14300	ug/kg dry	2173.8	14300 U	127	50-130		
Di-n-octyl Phthalate	2440 J, D	14300	ug/kg dry	2173.8	14300 U	112	40-150		
Fluoranthene	2440 J, D	14300	ug/kg dry	2173.8	14300 U	112	45-130		
Fluorene	14300 U	14300	ug/kg dry	2173.8	14300 U	*	45-120		
Hexachlorobenzene	2610 J, D	14300	ug/kg dry	2173.8	14300 U	120	45-130		
Hexachlorobutadiene	2300 J, D	14300	ug/kg dry	2173.8	14300 U	106*	45-105		
Hexachlorocyclopentadiene	14300 U	14300	ug/kg dry	2173.8	14300 U	*	10-100		
Hexachloroethane	14300 U	14300	ug/kg dry	2173.8	14300 U	*	35-110		
Indeno[1,2,3-cd]pyrene	14300 U	14300	ug/kg dry	2173.8	14300 U	*	45-130		
Isophorone	14300 U	14300	ug/kg dry	2173.8	14300 U	*	40-110		
Naphthalene	2430 J, D	14300	ug/kg dry	2173.8	14300 U	112*	40-110		
Nitrobenzene	1930 J, D	14300	ug/kg dry	2173.8	14300 U	89	40-105		
N-Nitrosodi-n-propylamine	14300 U	14300	ug/kg dry	2173.8	14300 U	*	30-130		
N-Nitrosodiphenylamine	14300 U	14300	ug/kg dry	2173.8	14300 U	*	50-120		
Pentachlorophenol	71700 U	71700	ug/kg dry	2173.8	71400 U	*	25-120		
Phenanthrene	2480 J, D	14300	ug/kg dry	2173.8	14300 U	114	50-120		
Phenol	2180 J, D	14300	ug/kg dry	2173.8	14300 U	100	40-115		
Pyrene	2590 J, D	14300	ug/kg dry	2173.8	14300 U	119	45-125		
Surrogate: 2-Fluorophenol	*2450*		*ug/kg dry*	*2717.2*		*90*	*25-121*		
Surrogate: Phenol-d5	*2550*		*ug/kg dry*	*2717.2*		*94*	*24-113*		
Surrogate: Nitrobenzene-d5	*1570*		*ug/kg dry*	*1811.5*		*87*	*23-120*		
Surrogate: 2-Fluorobiphenyl	*1820*		*ug/kg dry*	*1811.5*		*101*	*30-115*		
Surrogate: 2,4,6-Tribromophenol	*1380*		*ug/kg dry*	*2717.2*		*51*	*19-122*		
Surrogate: p-Terphenyl-d14	*2110*		*ug/kg dry*	*1811.5*		*117*	*18-137*		

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010222 - SW 3540C									
Matrix Spike Dup (L010222-MSD2)	**Source: 1010048-01**		Prepared: 10/17/2010 Analyzed: 10/27/2010						
1,2,4-Trichlorobenzene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-110		40
1,2-Dichlorobenzene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-105		40
1,3-Dichlorobenzene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	40-100		40
1,4-Dichlorobenzene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	35-105		40
2,4,5-Trichlorophenol	14500 U	14500	ug/kg dry	2203.8	14300 U	*	30-140		40
2,4,6-Trichlorophenol	14500 U	14500	ug/kg dry	2203.8	14300 U	*	20-110		40
2,4-Dichlorophenol	14500 U	14500	ug/kg dry	2203.8	14300 U	*	40-110		40
2,4-Dimethylphenol	14500 U	14500	ug/kg dry	2203.8	14300 U	*	30-105		40
2,4-Dinitrophenol	72700 U	72700	ug/kg dry	2203.8	71400 U	*	25-130		40
2,4-Dinitrotoluene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	50-115		40
2,6-Dinitrotoluene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	40-120		40
2-Chloronaphthalene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-115		40
2-Chlorophenol	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-105		40
2-Methylnaphthalene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-110		40
2-Methylphenol	14500 U	14500	ug/kg dry	2203.8	14300 U	*	40-120		40
2-Nitroaniline	72700 U	72700	ug/kg dry	2203.8	71400 U	*	45-120		40
2-Nitrophenol	14500 U	14500	ug/kg dry	2203.8	14300 U	*	40-110		40
3,3'-Dichlorobenzidine	29100 U	29100	ug/kg dry	2203.8	28500 U	*	15-130		40
3-Nitroaniline	72700 U	72700	ug/kg dry	2203.8	71400 U	*	40-130		40
4,6-Dinitro-2-methylphenol	14500 U	14500	ug/kg dry	2203.8	14300 U	*	20-140		40
4-Bromophenyl Phenyl Ether	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-115		40
4-Chloro-3-methylphenol	14500 U	14500	ug/kg dry	2203.8	14300 U	*	35-115		40
4-Chloroaniline	14500 U	14500	ug/kg dry	2203.8	14300 U	*	10-100		40
4-Chlorophenyl Phenyl Ether	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-110		40
3- and/or 4-Methylphenol	14500 U	14500	ug/kg dry	2203.8	14300 U	*	40-120		40
4-Nitroaniline	72700 U	72700	ug/kg dry	2203.8	71400 U	*	40-130		40
4-Nitrophenol	72700 U	72700	ug/kg dry	2203.8	71400 U	*	15-140		40
Acenaphthene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-110		40
Acenaphthylene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-115		40
Anthracene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-130		40
Benz[a]anthracene	2210 J, D	14500	ug/kg dry	2203.8	14300 U	100	45-130	2	40
Benzo[a] pyrene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-130		40
Benzo[b] fluoranthene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	40-130		40
Benzo[g,h,i] perylene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-125		40
Benzo[k] fluoranthene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-125		40
Bis(2-chloroethoxy) methane	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-110		40

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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	10/29/2010 09:20

Semivolatile Organic Compounds by SW846 8270C - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010222 - SW 3540C									
Matrix Spike Dup (L010222-MSD2)	**Source: 1010048-01**		Prepared: 10/17/2010 Analyzed: 10/27/2010						
Bis(2-chloroethyl) ether	14500 U	14500	ug/kg dry	2203.8	14300 U	*	40-110		40
Bis(2-chloroisopropyl) ether	14500 U	14500	ug/kg dry	2203.8	14300 U	*	30-115		40
Bis(2-ethylhexyl) phthalate	14500 U	14500	ug/kg dry	2203.8	14300 U	*	40-145		40
Butyl Benzyl Phthalate	2370 J, D	14500	ug/kg dry	2203.8	14300 U	108	50-125	9	40
Carbazole	14500 U	14500	ug/kg dry	2203.8	14300 U	*	40-140		40
Chrysene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-130		40
Dibenz[a,h]anthracene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-125		40
Dibenzofuran	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-120		40
Diethyl Phthalate	14500 U	14500	ug/kg dry	2203.8	14300 U	*	50-125		40
Dimethyl Phthalate	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-130		40
Di-n-butyl Phthalate	2440 J, D	14500	ug/kg dry	2203.8	14300 U	111	50-130	13	40
Di-n-octyl Phthalate	2330 J, D	14500	ug/kg dry	2203.8	14300 U	106	40-150	6	40
Fluoranthene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-130		40
Fluorene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-120		40
Hexachlorobenzene	2470 J, D	14500	ug/kg dry	2203.8	14300 U	112	45-130	7	40
Hexachlorobutadiene	2300 J, D	14500	ug/kg dry	2203.8	14300 U	104	45-105	1	40
Hexachlorocyclopentadiene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	10-100		40
Hexachloroethane	14500 U	14500	ug/kg dry	2203.8	14300 U	*	35-110		40
Indeno[1,2,3-cd]pyrene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	45-130		40
Isophorone	14500 U	14500	ug/kg dry	2203.8	14300 U	*	40-110		40
Naphthalene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	40-110		40
Nitrobenzene	14500 U	14500	ug/kg dry	2203.8	14300 U	*	40-105		40
N-Nitrosodi-n-propylamine	14500 U	14500	ug/kg dry	2203.8	14300 U	*	30-130		40
N-Nitrosodiphenylamine	14500 U	14500	ug/kg dry	2203.8	14300 U	*	50-120		40
Pentachlorophenol	72700 U	72700	ug/kg dry	2203.8	71400 U	*	25-120		40
Phenanthrene	2270 J, D	14500	ug/kg dry	2203.8	14300 U	103	50-120	10	40
Phenol	14500 U	14500	ug/kg dry	2203.8	14300 U	*	40-115		40
Pyrene	2280 J, D	14500	ug/kg dry	2203.8	14300 U	104	45-125	14	40
Surrogate: 2-Fluorophenol	*2150*		*ug/kg dry*	*2754.7*		*78*	*25-121*		
Surrogate: Phenol-d5	*2150*		*ug/kg dry*	*2754.7*		*78*	*24-113*		
Surrogate: Nitrobenzene-d5	*1290*		*ug/kg dry*	*1836.5*		*70*	*23-120*		
Surrogate: 2-Fluorobiphenyl	*1780*		*ug/kg dry*	*1836.5*		*97*	*30-115*		
Surrogate: 2,4,6-Tribromophenol	*1470*		*ug/kg dry*	*2754.7*		*54*	*19-122*		
Surrogate: p-Terphenyl-d14	*1860*		*ug/kg dry*	*1836.5*		*101*	*18-137*		

PREPARATION BENCH SHEET

L010222

Lionville Laboratory

Printed: 10/20/2010 11:57:58AM

Matrix: Solid **Prepared using: SVOCGCMS - SW 3540/3550** **Surrogate used: 1001763**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1010046-01	8270C TCL SVOC	10/17/2010 08:26	30.26	2				500	Eberline	
1010046-02	8270C TCL SVOC	10/17/2010 08:26	30.158	1				500	Eberline	
1010046-03	8270C TCL SVOC	10/17/2010 08:26	30.19	1				500	Eberline	
1010046-04	8270C TCL SVOC	10/17/2010 08:26	30.053	4				500	Eberline	
1010046-05	8270C TCL SVOC	10/17/2010 08:26	30.466	4				500	Eberline	
1010048-01	8270C TCL SVOC	10/17/2010 08:26	30.59	4				500	WC-Hanford, Inc.	
1010048-02	8270C TCL SVOC	10/17/2010 08:26	30.378	2				500	WC-Hanford, Inc.	
1010048-03	8270C TCL SVOC	10/17/2010 08:26	30.218	1				500	WC-Hanford, Inc.	
1010049-01	8270C TCL SVOC	10/17/2010 08:26	30.569	2				500	WC-Hanford, Inc.	
L010222-BLK1	QC	10/17/2010 08:26	30	1				500		
L010222-BS1	QC	10/17/2010 08:26	30	1	1000933		600	500		
L010222-MS1	QC	10/17/2010 08:26	30.15	2	1000933	1010046-01	600	500		
L010222-MS2	QC	10/17/2010 08:26	30.428	4	1000933	1010048-01	600	500		
L010222-MS3	QC	10/17/2010 08:26	30.569	2	1000933	1010049-01	600	500		
L010222-MSD1	QC	10/17/2010 08:26	30.81	2	1000933	1010046-01	600	500		
L010222-MSD2	QC	10/17/2010 08:26	30.014	4	1000933	1010048-01	600	500		
L010222-MSD3	QC	10/17/2010 08:26	30.142	2	1000933	1010049-01	600	500		

10/20/10 11:57
Extracts Relinquished By Date

10/20/10 1210
Extracts Received By Date

Lionville Laboratory Use Only

1010048

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

SRS

VLI LIONVILLE LABORATORY INC.

A—1 B C D See 1

Client WC Hanford OAF# RC-182

Est. Final Proj. Sampling Date

Project#

Project Contact/Phone#

Lionville Laboratory Project Manager O-J

QC SW Del STD TAT 15 Days

Date Rec'd 10-12-10 Date Due 10-27-10

Refrigerator #		A	A—1		B			C		D	D—1					
#/Type Container	~~Liquid~~ Solid	2 1AG	1		2 1AG			2 1AG		2 1AG	1					
Volume		120	1		120			120		120	1					
Preservatives		—	1		—			—		—	1					
ANALYSES REQUESTED →		ORGANIC				TCLP BNA		INORG								
		VOA	BNA	Pest/~~PCB~~	Herb			Metal ~~Hg~~	CN	TCLP MRT.	TCLP ~~Hg~~					

MATRIX CODES: S- Soil; SE- Sediment; SO- Solid; SL- Sludge; W- Water; O- Oil; A- Air; DS- Drum Solids; DL- Drum Liquids; L- EP/TCLP Leachate; WI- Wipe; X- Other; F- Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only: 8270	8081		TCLP 8270T			Met①		TCLP RCRA	
	01	T1CCLO			soil	10-6-10	1040	X	X		X			X		X	X
	02	1 L1			1	1	1250	X			X			X		X	X
	03	1 L2			1	1	1425	X			X			X		X	X

Special Instructions: Raw matrix QC

Met① = HSL + B, Mo, Si
NOTL

Special Instructions:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Relinquished by	Received by	Date	Time
[signature]	[signature]	10/12/10	0950

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

9999999929

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-182-010	Page 1 of 1
Collector ~~D. Henjum~~ 10/6/10 Leach	Company Contact: S. Van Den Hende	Telephone No.: 509-551-3934	Project Coordinator: KESSNER, JH	Price Code ~~8L~~ JRD 10/6/10 8K; Data Turnaround ~~21 Days~~ SV 9/29/10 15 Day
Project Designation: ARRA 100F Remaining Sites Remediation - Soil In-Process	Sampling Location: 100-F-49 ~~100-F-57 Water Pumphouse Debris Pothole~~ SV 10-5-10		SAF No.: RC-182	
Ice Chest No.: WCH-11-008	Field Logbook No.: EL-1651	COA: S00F578100	Method of Shipment: FEDEX	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A100558		Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

~~None~~ SEB 10-11-10

Potential RAD < DOT Limits

Special Handling and/or Storage

Cool 4 Degrees C

Preservation	Cool 4C	None	Cool 4C	None	None	Cool 4C					
Type of Container	aG	aG	aG	aG	Snap Vial	aG					
No. of Container(s)	1	1	1	1	1	0					
Volume	120mL	120mL	120mL	120mL	60mL	120mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TCLP Semi-VOA - 1311/8270A	RCF GEA Shipping Screen SV 9/29/10	Pesticides (8081)					
Sample No.	Matrix *	Sample Date	Sample Time								
J1CCL0	SOIL	10/6/10	1040	✓	✓	✓	✓		✓		
J1CCL1	SOIL	10/6/10	1250	✓	✓	✓	✓				
J1CCL2	SOIL	10/6/10	1425	✓	✓	✓	✓				
~~J1CCL3~~ JRD 10/6/10	SOIL										
~~J1CCL4~~	SOIL										

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Z Leach	10/6/10 1545	JR DeBruigne	10/6/10 1545
JR DeBruigne	10/6/10 1630	S. Howell	10-6-10 1630
J.E. Beutel WCH	10-11-10 1000	FED EX	
FED EX	10-12-10 0950	VICTOR HERNANDEZ	10-12-10 0950

SPECIAL INSTRUCTIONS

Leach and hold TCLP per Joan Kessner

(1) ICP Metals - 6010TR (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

(2) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}

ADD Pesticides (8081) to J1CCL0. JRD 10/6/10

Sterling Howell was unavailable to relinquish custody of samples on 10-11-10. J.E. Beutel will take custody of these samples stored 1060 Battelle, Fridge 18. JEB 10-11-10

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title		Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By	Date/Time

REVIEWED BY JR DATE 10/11/10

WCH-EE-011

0099999821

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hanford Date: 10/12/10

Project/SAF/SOW/Release #: RCL 182

LvL Batch #: 1010048 Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 796329936487
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.1 °C		Cooler # WCH-11-008
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify)
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact. signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvL) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no. then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA. TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvL Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted _____		Date _____	

LVL
LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 19:39

Analytical Report for Organochlorine Pesticides by SW846 8081A

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
J1CCL0	1010048-01	Soil	10/06/2010 10:40	10/12/2010 09:50

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

Case Narrative

Client: WC-HANFORD RC-182 K2440
LVL #: 1010048

W.O. #: 60049-001-001-0001-00
Date Received: 10-12-2010

CHLORINATED PESTICIDES

One (1) soil sample was collected on 10-06-2010.

The sample and associated QC samples were extracted 10-16-2010 and analyzed 10-24,25-2010 according to criteria set forth in Lionville Laboratory SOPs. The extraction procedure was based on SW846 Method 3540C, and the analysis procedure was based on SW846 Method 8081A for client specified target compounds. The sample received Copper-Sulfur cleanup based on SW846 method 3660A.

Lionville Laboratory (LvL) is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements:

1. The results presented in this report are derived from a sample(s) that met LvL's sample acceptance policy.

2. All required holding times for extraction and analysis have been met.

3. All obtainable surrogate recoveries were within acceptance criteria.

4. The method blank was below the reporting limit for all target compounds.

5. All blank spike recoveries were within acceptance criteria.

6. Fifteen (15) of forty (40 matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 10GC338) has been enclosed. High level of target analytes in spiked sample give erratic recoveries.

7. The sample required a 4-fold instrument dilution due to the nature of the matrix. Reporting limits have been adjusted to reflect the necessary dilutions.

8. The sample was reported on a dry weight basis.

9. All initial calibrations associated with this data set were within acceptance criteria.

10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or a designee, as verified by the following signature.

Iain Daniels
LvL Laboratory Manager

11/2/10
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 10GC338

Initiator: Catherine Carey Batch: 1010048 Parameter: Pest
Date: 11/01/10 Samples: L01022-MS/MSD Matrix: SOIL
Client: WC Hanford Method: SW846/MCAWW/CLP/ Prep Batch: L01022I

1. Reason for SDR

a. COC Discrepancy __ Tech Profile Error __ Client Request __ Sampler Error on C-O-C __ Transcription Error __ Wrong Test Code __ Other _____

b. General Discrepancy

__ Missing Sample/Extract __ Container Broken __ Wrong Sample Pulled __ Label ID's Illegible
__ Hold Time Exceeded __ Insufficient Sample __ Preservation Wrong __ Received Past Hold
__ Improper Bottle Type __ Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

several spike recoveries are low ~~(and high)~~ JD.

BS OKCU

2. Known or Probable Causes(s)

interference from target analytes

3. Discussion and Proposed Action

__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

Other Description:

High levels of targets in spiked sample give erratic recoveries

N erratic JD

4. Project Manager Instructions...signature/date: 11/2/10

__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
✓ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: JES 11-2-10 Other Explanation:

__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

When Final Action has been recorded, forward original to QA for diposition.

Route
__ Lab Manager: Daniels
__ Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-in: King

Route
__ Metals: Welsh / _____
__ Inorganic: Perrone / _____
__ GC/LC: Carey / _____
__ MS VOA: Rubino / _____
__ MS BNA: Carden / _____
__ Other: _____

GLOSSARY OF DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

. I = Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

P = This flag is used for a dual column analysis (i.e. pesticides/PCB/herbicides) when there is greater than 40% difference for detected concentrations between the two GC columns; the lower of the two values is reported on Form 1 and flagged with a "P".

D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.

C = This flag applies to a compound that has been confirmed by GC/MS.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

NS = Not Spiked.

SP = Indicates Spiked Compound.

NPM = No pattern match for multi-component target analytes.

LIONVILLE LABORATORY
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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 19:39

J1CCL0

1010048-01 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Organochlorine Pesticides by SW846 8081A								
alpha-BHC	1.45 U	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
gamma-BHC	1.45 U	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
beta-BHC	1.45 U	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
delta-BHC	1.45 U	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
Heptachlor	**30.1** D	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
Aldrin	1.45 U	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
Heptachlor epoxide	1.45 U	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
gamma-Chlordane	**212** D	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
alpha-Chlordane	**213** D	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
Endosulfan I	1.45 U	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
4,4'-DDE	1.45 U	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
Dieldrin	1.45 U	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
Endrin	1.45 U	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
4,4'-DDD	**13.4** D	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
Endosulfan II	1.45 U	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
4,4'-DDT	**11.2** D	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
Endrin aldehyde	**3.16** J, D	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
Endosulfan sulfate	1.45 U	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
Methoxychlor	**2.54** J, D	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
Endrin ketone	1.45 U	1.45	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
Toxaphene	21.8 U	21.8	ug/kg dry	4	L010221	10/16/2010	10/25/2010	8081A
Surrogate: Tetrachloro-meta-xylene	*107 %*	*28-166*			*L010221*	*10/16/2010*	*10/25/2010*	*8081A*
Surrogate: Decachlorobiphenyl	*90.0 %*	*37-153*			*L010221*	*10/16/2010*	*10/25/2010*	*8081A*

LIONVILLE LABORATORY
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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 19:39

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010221 - SW 3540C									
Blank (L010221-BLK1)			Prepared: 10/16/2010 Analyzed: 10/24/2010						
alpha-BHC	0.330 U	0.330	ug/kg wet						
gamma-BHC	0.330 U	0.330	ug/kg wet						
beta-BHC	0.330 U	0.330	ug/kg wet						
delta-BHC	0.330 U	0.330	ug/kg wet						
Heptachlor	0.330 U	0.330	ug/kg wet						
Aldrin	0.330 U	0.330	ug/kg wet						
Heptachlor epoxide	0.330 U	0.330	ug/kg wet						
gamma-Chlordane	0.330 U	0.330	ug/kg wet						
alpha-Chlordane	0.330 U	0.330	ug/kg wet						
Endosulfan I	0.330 U	0.330	ug/kg wet						
4,4'-DDE	0.330 U	0.330	ug/kg wet						
Dieldrin	0.330 U	0.330	ug/kg wet						
Endrin	0.330 U	0.330	ug/kg wet						
4,4'-DDD	0.330 U	0.330	ug/kg wet						
Endosulfan II	0.330 U	0.330	ug/kg wet						
4,4'-DDT	0.330 U	0.330	ug/kg wet						
Endrin aldehyde	0.330 U	0.330	ug/kg wet						
Endosulfan sulfate	0.330 U	0.330	ug/kg wet						
Methoxychlor	0.330 U	0.330	ug/kg wet						
Endrin ketone	0.330 U	0.330	ug/kg wet						
Toxaphene	3.30 U	3.30	ug/kg wet						
Surrogate: Tetrachloro-meta-xylene	*27.3*		*ug/kg wet*	*33.337*		*81.9*	*28-166*		
Surrogate: Decachlorobiphenyl	*20.3*		*ug/kg wet*	*33.333*		*61.0*	*37-153*		
LCS (L010221-BS1)			Prepared: 10/16/2010 Analyzed: 10/24/2010						
alpha-BHC	31.7	0.330	ug/kg wet	33.333		95.0	61-142		
gamma-BHC	32.0	0.330	ug/kg wet	33.333		96.0	65-142		
beta-BHC	34.1	0.330	ug/kg wet	33.333		102	71-134		
delta-BHC	29.0	0.330	ug/kg wet	33.333		87.0	53-144		
Heptachlor	32.6	0.330	ug/kg wet	33.333		97.9	70-138		
Aldrin	33.9	0.330	ug/kg wet	33.333		102	70-143		
Heptachlor epoxide	33.0	0.330	ug/kg wet	33.333		98.9	72-140		
gamma-Chlordane	32.7	0.330	ug/kg wet	33.333		98.0	74-140		
alpha-Chlordane	32.8	0.330	ug/kg wet	33.333		98.4	74-138		
Endosulfan I	33.7	0.330	ug/kg wet	33.333		101	81-141		
4,4'-DDE	35.3	0.330	ug/kg wet	33.333		106	82-145		
Dieldrin	34.0	0.330	ug/kg wet	33.333		102	79-144		

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 19:39

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010221 - SW 3540C									
LCS (L010221-BS1)			Prepared: 10/16/2010 Analyzed: 10/24/2010						
Endrin	33.0	0.330	ug/kg wet	33.333		99.0	73-147		
4,4'-DDD	35.0	0.330	ug/kg wet	33.333		105	77-148		
Endosulfan II	32.2	0.330	ug/kg wet	33.333		96.5	80-140		
4,4'-DDT	29.3	0.330	ug/kg wet	33.333		88.0	82-142		
Endrin aldehyde	23.7	0.330	ug/kg wet	33.333		71.0	59-133		
Endosulfan sulfate	30.0	0.330	ug/kg wet	33.333		89.9	77-135		
Methoxychlor	26.3	0.330	ug/kg wet	33.333		79.0	77-136		
Endrin ketone	31.0	0.330	ug/kg wet	33.333		93.0	85-134		
Surrogate: Tetrachloro-meta-xylene	*31.7*		*ug/kg wet*	*33.337*		*95.1*	*28-166*		
Surrogate: Decachlorobiphenyl	*23.0*		*ug/kg wet*	*33.333*		*69.0*	*37-153*		
Matrix Spike (L010221-MS1)	**Source: 1010048-01**		Prepared: 10/16/2010 Analyzed: 10/25/2010						
alpha-BHC	31.2 D	1.45	ug/kg dry	36.227	1.45 U	86.0	61-142		
gamma-BHC	31.2 D	1.45	ug/kg dry	36.227	1.45 U	86.0	65-142		
beta-BHC	25.4 D	1.45	ug/kg dry	36.227	1.45 U	70.0*	71-134		
delta-BHC	20.3 D	1.45	ug/kg dry	36.227	1.45 U	56.0	53-144		
Heptachlor	53.6 D	1.45	ug/kg dry	36.227	30.1	64.8*	70-138		
Aldrin	35.6 D	1.45	ug/kg dry	36.227	1.45 U	98.2	70-143		
Heptachlor epoxide	44.8 D	1.45	ug/kg dry	36.227	1.45 U	124	72-140		
gamma-Chlordane	220 D	1.45	ug/kg dry	36.227	212	22.4*	74-140		
alpha-Chlordane	210 D	1.45	ug/kg dry	36.227	213	-8.35*	74-138		
Endosulfan I	43.0 D	1.45	ug/kg dry	36.227	1.45 U	119	81-141		
4,4'-DDE	37.3 D	1.45	ug/kg dry	36.227	1.45 U	103	82-145		
Dieldrin	34.1 D	1.45	ug/kg dry	36.227	1.45 U	94.2	79-144		
Endrin	37.3 D	1.45	ug/kg dry	36.227	1.45 U	103	73-147		
4,4'-DDD	40.2 D	1.45	ug/kg dry	36.227	13.4	73.9*	77-148		
Endosulfan II	31.7 D	1.45	ug/kg dry	36.227	1.45 U	87.4	80-140		
4,4'-DDT	44.2 D	1.45	ug/kg dry	36.227	11.2	91.0	82-142		
Endrin aldehyde	22.8 D	1.45	ug/kg dry	36.227	3.16	54.3*	59-133		
Endosulfan sulfate	28.8 D	1.45	ug/kg dry	36.227	1.45 U	79.4	77-135		
Methoxychlor	36.7 D	1.45	ug/kg dry	36.227	2.54	94.3	77-136		
Endrin ketone	31.1 D	1.45	ug/kg dry	36.227	1.45 U	85.8	85-134		
Surrogate: Tetrachloro-meta-xylene	*37.0*		*ug/kg dry*	*36.231*		*102*	*28-166*		
Surrogate: Decachlorobiphenyl	*30.4*		*ug/kg dry*	*36.227*		*84.0*	*37-153*		

LIONVILLE LABORATORY
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Phone: 610-280-3000
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WC-Hanford, Inc.	Project: RC-182	
2620 Fermi Avenue	Project Number: K2440	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	11/01/2010 19:39

Organochlorine Pesticides by SW846 8081A - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L010221 - SW 3540C									
Matrix Spike Dup (L010221-MSD1)	**Source: 1010048-01**		Prepared: 10/16/2010 Analyzed: 10/25/2010						
alpha-BHC	28.3 D	1.47	ug/kg dry	36.734	1.45 U	77.0	61-142	11.0	40
gamma-BHC	27.2 D	1.47	ug/kg dry	36.734	1.45 U	74.0	65-142	15.0	40
beta-BHC	21.7 D	1.47	ug/kg dry	36.734	1.45 U	59.0*	71-134	17.1	40
delta-BHC	13.6 D	1.47	ug/kg dry	36.734	1.45 U	37.0*	53-144	40.9*	40
Heptachlor	61.4 D	1.47	ug/kg dry	36.734	30.1	85.2	70-138	27.1	40
Aldrin	33.4 D	1.47	ug/kg dry	36.734	1.45 U	90.8	70-143	7.83	40
Heptachlor epoxide	44.4 D	1.47	ug/kg dry	36.734	1.45 U	121	72-140	2.21	40
gamma-Chlordane	236 D	1.47	ug/kg dry	36.734	212	66.9*	74-140	99.8*	40
alpha-Chlordane	232 D	1.47	ug/kg dry	36.734	213	50.8*	74-138	279*	40
Endosulfan I	38.1 D	1.47	ug/kg dry	36.734	1.45 U	104	81-141	13.4	40
4,4'-DDE	35.2 D	1.47	ug/kg dry	36.734	1.45 U	95.7	82-145	7.35	40
Dieldrin	32.0 D	1.47	ug/kg dry	36.734	1.45 U	87.0	79-144	7.95	40
Endrin	35.3 D	1.47	ug/kg dry	36.734	1.45 U	96.0	73-147	7.04	40
4,4'-DDD	36.0 D	1.47	ug/kg dry	36.734	13.4	61.4*	77-148	18.5	40
Endosulfan II	27.5 D	1.47	ug/kg dry	36.734	1.45 U	74.9*	80-140	15.4	40
4,4'-DDT	41.4 D	1.47	ug/kg dry	36.734	11.2	82.4	82-142	10.0	40
Endrin aldehyde	18.9 D	1.47	ug/kg dry	36.734	3.16	42.8*	59-133	23.6	40
Endosulfan sulfate	23.0 D	1.47	ug/kg dry	36.734	1.45 U	62.7*	77-135	23.5	40
Methoxychlor	32.9 D	1.47	ug/kg dry	36.734	2.54	82.6	77-136	13.2	40
Endrin ketone	27.4 D	1.47	ug/kg dry	36.734	1.45 U	74.7*	85-134	13.8	40
Surrogate: Tetrachloro-meta-xylene	*34.9*		*ug/kg dry*	*36.738*		*95.0*	*28-166*		
Surrogate: Decachlorobiphenyl	*30.1*		*ug/kg dry*	*36.734*		*82.0*	*37-153*		

PREPARATION BENCH SHEET

L010221

Lionville Laboratory

Printed: 10/24/2010 8:32:21AM

Matrix: Solid **Prepared using: GC - SW 3540C** **Surrogate used: 1001740**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1009131-03RE1	8081A TCL Pesticides	10/16/2010 12:28	30.27	10				250	WC-Hanford, Inc.	From L010222 by MLF on 10/16/2010
1009131-03RE1	8082 PCBs	10/16/2010 12:28	30.27	10				250	WC-Hanford, Inc.	From L010222 by MLF on 10/16/2010
1010048-01	8081A TCL Pesticides	10/16/2010 11:37	30.36	10				250	WC-Hanford, Inc.	
1010048-01	8082 PCBs	10/16/2010 11:37	30.36	10				250	WC-Hanford, Inc.	Added for BatchQC in: L010221
1010066-01	8081A TCL Pesticides	10/16/2010 11:37	30.1	10				250	WC-Hanford, Inc.	
1010066-01	8082 PCBs	10/16/2010 11:37	30.1	10				250	WC-Hanford, Inc.	
1010066-02	8081A TCL Pesticides	10/16/2010 11:37	30.25	10				250	WC-Hanford, Inc.	
1010066-02	8082 PCBs	10/16/2010 11:37	30.25	10				250	WC-Hanford, Inc.	
1010066-03	8081A TCL Pesticides	10/16/2010 11:37	30.14	10				250	WC-Hanford, Inc.	
1010066-03	8082 PCBs	10/16/2010 11:37	30.14	10				250	WC-Hanford, Inc.	
1010066-04	8081A TCL Pesticides	10/16/2010 11:37	30.9	10				250	WC-Hanford, Inc.	
1010066-04	8082 PCBs	10/16/2010 11:37	30.9	10				250	WC-Hanford, Inc.	
1010066-05	8081A TCL Pesticides	10/16/2010 11:37	30.2	10				250	WC-Hanford, Inc.	
1010066-05	8082 PCBs	10/16/2010 11:37	30.2	10				250	WC-Hanford, Inc.	
1010066-06	8081A TCL Pesticides	10/16/2010 11:37	30.24	10				250	WC-Hanford, Inc.	
1010066-06	8082 PCBs	10/16/2010 11:37	30.24	10				250	WC-Hanford, Inc.	
1010066-07	8081A TCL Pesticides	10/16/2010 11:37	30.32	10				250	WC-Hanford, Inc.	
1010066-07	8082 PCBs	10/16/2010 11:37	30.32	10				250	WC-Hanford, Inc.	
1010066-08	8081A TCL Pesticides	10/16/2010 11:37	30.23	10				250	WC-Hanford, Inc.	
1010066-08	8082 PCBs	10/16/2010 11:37	30.23	10				250	WC-Hanford, Inc.	

Sleanup (at B124021) 10/24/10 SZ

Extracts Relinquished By — Date: 10/24/10

Extracts Received By — Date: 10/24/10 8:40

PREPARATION BENCH SHEET

L010221

Lionville Laboratory

Printed: 10/24/2010 8:32:21AM

Matrix: Solid **Prepared using: GC - SW 3540C** **Surrogate used: 1001740**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1010066-09	8081A TCL Pesticides	10/16/2010 11:37	30.26	10				250	WC-Hanford, Inc.	
1010066-09	8082 PCBs	10/16/2010 11:37	30.26	10				250	WC-Hanford, Inc.	
1010066-10	8081A TCL Pesticides	10/16/2010 11:37	30.44	10				250	WC-Hanford, Inc.	
1010066-10	8082 PCBs	10/16/2010 11:37	30.44	10				250	WC-Hanford, Inc.	
1010066-11	8081A TCL Pesticides	10/16/2010 11:37	30.37	10				250	WC-Hanford, Inc.	
1010066-11	8082 PCBs	10/16/2010 11:37	30.37	10				250	WC-Hanford, Inc.	
L010221-BLK1	QC	10/16/2010 11:37	30	10				250		Pest
L010221-BLK2	QC	10/16/2010 11:37	30	10				250		PCB
L010221-BS1	QC	10/16/2010 11:37	30	10	1001086		250	250		Pest
L010221-BS2	QC	10/16/2010 11:37	30	10	1001362		250	250		PCB
L010221-MS1	QC	10/16/2010 11:37	30.43	10	1001086	1010048-01	250	250		pest
L010221-MS2	QC	10/16/2010 11:37	30.22	10	1001086	1010066-01	250	250		Pest
L010221-MS3	QC	10/16/2010 11:37	30.93	10	1001362	1010066-02	250	250		PCB
L010221-MSD1	QC	10/16/2010 11:37	30.01	10	1001086	1010048-01	250	250		Pest
L010221-MSD2	QC	10/16/2010 11:37	30.28	10	1001086	1010066-01	250	250		Pest
L010221-MSD3	QC	10/16/2010 11:37	30.32	10	1001362	1010066-02	250	250		PCB

5 cleanup (Cu B/24021) 10/24/10 SZ

10/24/10
Extracts Relinquished By Date

SZoda 10/24/10 8:4m
Extracts Received By Date

Lionville Laboratory Use Only

1010048

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: WC Hanford DAF# RC-182

Est. Final Proj. Sampling Date:

Project#:

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. J

QC: SW Del: STD TAT: 15 Days

Date Rec'd: 10-12-10 Date Due: 10-27-10

		A		B	C	D	
Refrigerator #		2	1	2	2	2	1
#/Type Container	~~Liquid~~ Solid	1AG	1	1AG	1AC	1AG	1
Volume		120	1	120	120	120	1
Preservatives		—	1	—	—	—	1

ANALYSES REQUESTED →

ORGANIC						INORG				
VOA	BNA	Pest/~~PCB~~	Herb	TCLP BNA		Metal ~~HG~~	CN	TCLP MET.	TCLP ~~HG~~	

Lionville Laboratory Use Only: 8270 | 8081 | TCLP 8270T | MetO | TCLP RCRA

MATRIX CODES: S- Soil; SE- Sediment; SO- Solid; SL- Sludge; W- Water; O- Oil; A- Air; DS- Drum Solids; DL- Drum Liquids; L- EP/TCLP Leachate; WI- Wipe; X- Other; F- Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
01	J1CCLO			soil	10-6-10	1040
02	1 L1			1	1	1250
03	1 L2			1	1	1425

Special Instructions: Run matrix QC

MetO = HSL + B, Mo, Sl
NOTL

Special Instructions:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	10/12/10	0950

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

000000812

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-182-010	Page 1 of 1
Collector ~~D. Henjum~~ JRD 10/6/10 Leach	Company Contact / Telephone No.: S. Van Den Hende 509-551-3934	Project Coordinator: KESSNER, JH	Price Code ~~8L~~ JRD 10/6/10 8K	Data Turnaround ~~21 Days~~ SV 9/29/10 15 Day
Project Designation: ARRA 100F Remaining Sites Remediation - Soil In-Process	Sampling Location 100-F-49 ~~100-F-57 Water Pumphouse Debris Pothole~~ SV 10-5-10	SAF No.: RC-182		
Ice Chest No.: WCH-11-008	Field Logbook No.: EL-1651 / COA: S00F578100	Method of Shipment: FEDEX		
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A100558	Bill of Lading/Air Bill No.: SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

~~None~~ JEB 10-11-10

Potential RAD < DOT Limits

Special Handling and/or Storage

Cool 4 Degrees C

Preservation	Cool 4C	None	Cool 4C	None	None	Cool 4C					
Type of Container	aG	aG	aG	aG	Snap Vial	aG					
No. of Container(s)	1	1	1	1	1	0					
Volume	120mL	120mL	120mL	120mL	60mL	120mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	TCLP Semi-VOA - 1311/8270A	RCF GEA Shipping Screen 9/29/10	Pesticides (8081)					
Sample No. / Matrix * / Sample Date / Sample Time											
J1CCL0 / SOIL / 10/6/10 / 1040	✓	✓	✓	✓	✓	✓					
J1CCL1 / SOIL / 10/6/10 / 1250	✓	✓	✓	✓							
J1CCL2 / SOIL / 10/6/10 / 1425	✓	✓	✓	✓							
~~J1CCL3~~ JRD 10/6/10 / SOIL											
~~J1CCL4~~ / SOIL											

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Z Leach	10/6/10 1545	JR DeBruigne JRD DeBruigne	10/6/10 1545
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JR DeBruigne JRD DeBruigne	10/6/10 1630	S. Howell S Howell	10-6-10 1630
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
J.E. Beutel WCH	10-11-10 1000	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FedEx	10-12-10 0950	VICTOR HERNANDEZ	10-12-10 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Leach and hold TCLP per Joan Kessner

(1) ICP Metals - 6010TR (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

(2) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}

ADD Pesticides (8081) to J1CCL0. JRD 10/6/10

Sterling Howell was unavailable to relinquish custody of samples on 10-11-10. J.E. Beutel will take custody of these samples stored 1060 Battelle, Fridge 18. JEB 10-11-10

Matrix *: S=Soil; SE=Sediment; SO=Solid; SL=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; WI=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

REVIEWED BY JR DATE 10/11/10

WCH-EE-011

0099999913

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hanford Date: 10/12/10

Project/SAF/SOW/Release #: RC-182

LvL Batch #: 1010048 Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 796329936487
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	**Temp** 2.1 °C		Cooler # WCH-11-008
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify)
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact. signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvL) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no. then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA. TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvL Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted _____		Date _____	