0095265

SAF-RC-195
Soil/Sediment Sampling – Integrated Remedial Investigation/Feasibility Study, 100-BC Boreholes
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

No Distribution Required

RECEIVED
APR 06 2011
EDMC

COMMENTS:

SDG K2755 SAF-RC-195

Rad only ☑ Chem only Rad & Chem

☑ Complete Partial

Sample Location: C8239 (118-B-8); I-005, I-003, I-004

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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

RECEIVED
MAR 2011

16 February 2011

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 #	1012097
SDG #	K2755
SAF #	RC-195
Date Received	12/11/10
# Samples	4
Matrix	SOIL
Volatiles	
Semivolatiles	
Pest/PCB	X
Glycols	
DRO/KRO/GRO	X
PAHs	X
Herbicides	
Metals	X
Inorganics	X

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

Orlette S. Johnson
Project Manager

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

RECEIVED
MAR 2011

WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/16/2011 00:35

Analytical Report for Polychlorinated Biphenyls by SW846 8082

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B28NB0	1012097-01	Soil	12/07/2010 14:35	12/10/2010 10:10
B28NC5	1012097-02	Soil	12/08/2010 14:40	12/10/2010 10:10
B29K64	1012097-03	Soil	12/07/2010 09:50	12/10/2010 10:10
B29K67	1012097-04	Soil	12/07/2010 10:40	12/10/2010 10:10

LIONVILLE LABORATORY
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Case Narrative

Client: WC-HANFORD RC-195 K2755
LVL #: 1012097

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

PCBs

Four (4) soil samples were collected on 12-07,08-2010.

The samples and associated QC samples were extracted 12-16-2010 and analyzed 12-30-2010, 01-01-2011 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 8082. All samples received Copper-Sulfur and Sulfuric Acid cleanups based on SW846 methods 3660A and 3665A.

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 samples that met LvL's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. Two (2) of sixteen (16) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR#11GC007) has been enclosed.
4. The method blank was below the reporting limits for all target compounds.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. The samples are reported on a dry weight basis.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 19 pages.

10. 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

1/21/11
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 11GC007

Initiator: Catherine Carey
Date: 1/20 Hanford
Client: 01/10/11

Batch: 1012041 + 1012047
Samples: all 1012084 +
Method: SW846/MCAWW/CLP/ 1012097

Parameter: PCB
Matrix: SOIL
Prep Batch: L012204

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)

Both surrogate recoveries are low in L012204-Blank

surrogates fine in all other samples

2. Known or Probable Causes(s)

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:

Sample contains no target analytes, so there is no impact on the data. Narrate, JD

4. Project Manager Instructions...signature/date: _____ 1/21/11
__ 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: _____ 1/21/11

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: _____

QA-139-A-0208

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.

264 Welsh Pool Road
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Phone: 610-280-3000
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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/16/2011 00:35

B28NB0

1012097-01 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082								
Aroclor 1016	14.2 U	14.2	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1221	14.2 U	14.2	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1232	14.2 U	14.2	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1242	14.2 U	14.2	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1248	14.2 U	14.2	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1254	14.2 U	14.2	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1260	14.2 U	14.2	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1262	14.2 U	14.2	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1268	14.2 U	14.2	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Surrogate: Decachlorobiphenyl	*107 %*	*43-144*			*L012204*	*12/16/2010*	*01/01/2011*	*8082*
Surrogate: Tetrachloro-meta-xylene	*116 %*	*52-141*			*L012204*	*12/16/2010*	*01/01/2011*	*8082*

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	02/16/2011 00:35

B28NC5

1012097-02 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082								
Aroclor 1016	13.9 U	13.9	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1221	13.9 U	13.9	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1232	13.9 U	13.9	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1242	13.9 U	13.9	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1248	13.9 U	13.9	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1254	13.9 U	13.9	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1260	13.9 U	13.9	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1262	13.9 U	13.9	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1268	13.9 U	13.9	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Surrogate: Decachlorobiphenyl	*107 %*	*43-144*			*L012204*	*12/16/2010*	*01/01/2011*	*8082*
Surrogate: Tetrachloro-meta-xylene	*122 %*	*52-141*			*L012204*	*12/16/2010*	*01/01/2011*	*8082*

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/16/2011 00:35

B29K64

1012097-03 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082								
Aroclor 1016	14.1 U	14.1	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1221	14.1 U	14.1	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1232	14.1 U	14.1	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1242	14.1 U	14.1	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1248	14.1 U	14.1	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1254	14.1 U	14.1	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1260	14.1 U	14.1	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1262	14.1 U	14.1	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1268	14.1 U	14.1	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Surrogate: Decachlorobiphenyl	*101 %*	*43-144*			*L012204*	*12/16/2010*	*01/01/2011*	*8082*
Surrogate: Tetrachloro-meta-xylene	*108 %*	*52-141*			*L012204*	*12/16/2010*	*01/01/2011*	*8082*

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/16/2011 00:35

B29K67

1012097-04 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Polychlorinated Biphenyls by SW846 8082								
Aroclor 1016	13.6 U	13.6	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1221	13.6 U	13.6	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1232	13.6 U	13.6	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1242	13.6 U	13.6	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1248	13.6 U	13.6	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1254	13.6 U	13.6	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1260	13.6 U	13.6	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1262	13.6 U	13.6	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Aroclor 1268	13.6 U	13.6	ug/kg dry	1	L012204	12/16/2010	01/01/2011	8082
Surrogate: Decachlorobiphenyl	*100 %*	*43-144*			*L012204*	*12/16/2010*	*01/01/2011*	*8082*
Surrogate: Tetrachloro-meta-xylene	*109 %*	*52-141*			*L012204*	*12/16/2010*	*01/01/2011*	*8082*

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/16/2011 00:35

Polychlorinated Biphenyls by SW846 8082 - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L012204 - SW 3540C									
Blank (L012204-BLK1)			Prepared: 12/16/2010 Analyzed: 12/30/2010						
Aroclor 1016	13.3 U	13.3	ug/kg wet						
Aroclor 1221	13.3 U	13.3	ug/kg wet						
Aroclor 1232	13.3 U	13.3	ug/kg wet						
Aroclor 1242	13.3 U	13.3	ug/kg wet						
Aroclor 1248	13.3 U	13.3	ug/kg wet						
Aroclor 1254	13.3 U	13.3	ug/kg wet						
Aroclor 1260	13.3 U	13.3	ug/kg wet						
Aroclor 1262	13.3 U	13.3	ug/kg wet						
Aroclor 1268	13.3 U	13.3	ug/kg wet						
Surrogate: Decachlorobiphenyl	*12.4*		*ug/kg wet*	*33.333*		*37**	*43-144*		
Surrogate: Tetrachloro-meta-xylene	*12.8*		*ug/kg wet*	*33.337*		*38**	*52-141*		
LCS (L012204-BS1)			Prepared: 12/16/2010 Analyzed: 12/30/2010						
Aroclor 1016	206	13.3	ug/kg wet	166.67		124	50-138		
Aroclor 1260	176	13.3	ug/kg wet	166.67		106	50-148		
Surrogate: Decachlorobiphenyl	*34.6*		*ug/kg wet*	*33.333*		*104*	*43-144*		
Surrogate: Tetrachloro-meta-xylene	*46.1*		*ug/kg wet*	*33.337*		*138*	*52-141*		
Matrix Spike (L012204-MS6)		**Source: 1012097-02**	Prepared: 12/16/2010 Analyzed: 01/01/2011						
Aroclor 1016	138	14.0	ug/kg dry	174.88	13.9 U	79	50-138		
Aroclor 1260	154	14.0	ug/kg dry	174.88	13.9 U	88	50-148		
Surrogate: Decachlorobiphenyl	*32.2*		*ug/kg dry*	*34.975*		*92*	*43-144*		
Surrogate: Tetrachloro-meta-xylene	*31.8*		*ug/kg dry*	*34.979*		*91*	*52-141*		
Matrix Spike Dup (L012204-MSD6)		**Source: 1012097-02**	Prepared: 12/16/2010 Analyzed: 01/01/2011						
Aroclor 1016	155	13.3	ug/kg dry	166.08	13.9 U	93	50-138	17	40
Aroclor 1260	185	13.3	ug/kg dry	166.08	13.9 U	112	50-148	23	40
Surrogate: Decachlorobiphenyl	*37.0*		*ug/kg dry*	*33.216*		*112*	*43-144*		
Surrogate: Tetrachloro-meta-xylene	*33.1*		*ug/kg dry*	*33.219*		*100*	*52-141*		

10

PREPARATION BENCH SHEET

L012204

Lionville Laboratory

Printed: 12/18/2010 12:27:38AM

Matrix: Solid **Prepared using: GC - SW 3540C** **Surrogate used: 1001998**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1012041-01	8082 PCBs	12/16/2010 10:16	30.18	10				250	WC-Hanford, Inc.	
1012046-01	8082 PCBs	12/16/2010 10:16	30.08	10				250	WC-Hanford, Inc.	
1012047-01	8082 PCBs	12/16/2010 10:16	31.47	10				250	WC-Hanford, Inc.	
1012068-01	8082 PCBs	12/16/2010 10:16	30.03	10				250	WC-Hanford, Inc.	
1012084-01	8082 PCBs	12/16/2010 10:16	31.28	10				250	WC-Hanford, Inc.	
1012084-02	8082 PCBs	12/16/2010 10:16	30.44	10				250	WC-Hanford, Inc.	
1012097-01	8082 PCBs	12/16/2010 10:16	30.58	10				250	WC-Hanford, Inc.	
1012097-02	8082 PCBs	12/16/2010 10:16	30.05	10				250	WC-Hanford, Inc.	
1012097-03	8082 PCBs	12/16/2010 10:16	30.71	10				250	WC-Hanford, Inc.	
1012097-04	8082 PCBs	12/16/2010 10:16	31.83	10				250	WC-Hanford, Inc.	
L012204-BLK1	QC	12/16/2010 10:16	30	10				250		
L012204-BS1	QC	12/16/2010 10:16	30	10	1002000		250	250		
L012204-MS1	QC	12/16/2010 10:16	30.45	10	1002000	1012041-01	250	250		
L012204-MS2	QC	12/16/2010 10:16	30.81	10	1002000	1012046-01	250	250		
L012204-MS3	QC	12/16/2010 10:16	30.64	10	1002000	1012047-01	250	250		
L012204-MS4	QC	12/16/2010 10:16	31.69	10	1002000	1012068-01	250	250		
L012204-MS5	QC	12/16/2010 10:16	30.01	10	1002000	1012084-02	250	250		
L012204-MS6	QC	12/16/2010 10:16	30.01	10	1002000	1012097-01	250	250		
L012204-MSD1	QC	12/16/2010 10:16	30.5	10	1002000	1012041-01	250	250		
L012204-MSD2	QC	12/16/2010 10:16	30.01	10	1002000	1012046-01	250	250		

S cleared 12.20.10 SZ

12/18/10 0315 — Extracts Relinquished By — Date

UC 12/20/10 — Extracts Received By — Date

PREPARATION BENCH SHEET

L012204

Lionville Laboratory

Printed: 12/18/2010 12:27:38AM

Matrix: Solid **Prepared using: GC - SW 3540C** **Surrogate used: 1001998**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
L012204-MSD3	QC	12/16/2010 10:16	30.02	10	1002000	1012047-01	250	250		
L012204-MSD4	QC	12/16/2010 10:16	30.18	10	1002000	1012068-01	250	250		
L012204-MSD5	QC	12/16/2010 10:16	30.5	10	1002000	1012084-02	250	250		
L012204-MSD6	QC	12/16/2010 10:16	31.6	10	1002000	1012097-01	250	250		

Cleared 12.20.10 SZ

12/18/10 815

Extracts Relinquished By Date

LE 12/20/10

Extracts Received By Date

Lionville Laboratory Use Only: 1012097

Custody Transfer Record/Lab Work Request

Page 1 of 1

SEE SRC

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client WC Hanford SAF# RC-195

Est. Final Proj. Sampling Date

Project#

Project Contact/Phone#

Lionville Laboratory Project Manager Arlette Johnson

QC SW Del STD TAT 30 days

Date Rec'd 12-10-10 Date Due 1-9-11

		A	B	C	D	E	F	G
Refrigerator #		1	1	1	1	1	1	1
#/Type Container	Liquid							
	Solid	1aq	1aq	1aq	1aq	1aq	1aq	1aq
Volume	Solid	250	250	120	250	120	250	120
Preservatives		—	—	—	—		—	—
ANALYSES REQUESTED	ORGANIC: VOA							
	ORGANIC: BNA							
	ORGANIC: ~~Pest~~ PCB	8082						
	ORGANIC: Herb							
	ORGANIC: PAHs 8310		8310 PAH					
	ORGANIC: TPH-DRO			KRO-DRO				
	INORG: (2) Metal + Hg				Met			
	INORG: CN							
	Cr+6					CR6		
	F-						300.0 Nitrate PH	
	Anions							Anions
	202 203							N3.N2

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	8082	8310 PAH	KRO-DRO	Met	CR6	300.0 Nitrate PH	Anions	N3.N2
01	B28NB0			S	12-7-10	1435	X	X	X	X	X	X	X	X
02	B28NC5				12-8-10	1440	X	X	X	X	X	X	X	X
03	B29K64				12-7-10	0950	X	X	X	X	X	X	X	X
04	B29K67					1040	X	X	X	X	X	X	X	X

Special Instructions: Run Matrix QC

Special Instructions:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	12-10-10	10:0

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

J0960013

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-534	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-005	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-115	HNF-N-585-15 PG 20	17.4- 19.9 Ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR	796535167463	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B28N47

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None	None	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP	None	None
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P	Split Spoon Liner	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL	1000g	200g
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B28NB0	SOIL	12-7-10	1435	X	X	X	X	X	X	X	*NC	*NC

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner AT	12-7-10 1530	SSU-R1	12-7-10 1530
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R1	12-9-10 0930	CM Aguilar CM Aguilar	12-9-10 0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CM Aguilar CM Aguilar	12-9-10 1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FEDEX	12-10-10 10:10	DSmith	12-10-10 10:10
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
*NC - Low yield NOT collected

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-195-534	PAGE 2 OF 2
COLLECTOR Turner, Crow	COMPANY CONTACT RADLOFF, ANNA	TELEPHONE NO. (509) 376-4554	PROJECT COORDINATOR KESSNER, JH	PRICE CODE 8N AIR QUALITY ☐	DATA TURNAROUND 45 Days / 45 Days
SAMPLING LOCATION C8239 (118-B-8); I-005	PROJECT DESIGNATION Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		SAF NO. RC-195		
ICE CHEST NO. GWS-115	FIELD LOGBOOK NO. HNF-N-585-15 pg 20	ACTUAL SAMPLE DEPTH 17.4-19.9 ft	COA 302512ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Lionville Laboratory Incorporated	OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. SEE PTR	7965351 67463	

SPECIAL INSTRUCTIONS

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);
(4) Bulk Density - D2937 (100 Area RIFS); Particle Size (Dry Sieve) - D422 (100 Area RIFS); Saturated Hydraulic Conductivity - D2434 (100 Area RIFS) {Hydraulic Conductivity}; Saturated Hydraulic Conductivity - D5084 (100 Area RIFS) {Hydraulic Conductivity};

ORIGINAL

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-555	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-008	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-115	HNF-N-585-15 pg 22	32.3 - 34.8 Ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR 7965351674 63		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: ~~B28N65~~ MVM 11/29/10
B29K47

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B28NC5	SOIL	12-8-10	1440	X	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner	12-8-10 1550	M0413 SSU R2	12-8-10 1550
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R2	12-9-10 0930	CM Aguilar	12-9-10 0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CM Aguilar	12-9-10 1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FedEx	12-10-10 10:10	[illegible]	12-10-10/10
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-656	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-003	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-117	ANF-N-585-15 PG 20	10-12.5 FT	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR	79653516746 3	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B29K53

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B29K64	SOIL	12-7-10	0950	X	X	X	X	X	X	X

1012097

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner 12-7-10	1145	RI M 12-7 MO 413 SSU R2 12-7-10	1145
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R1 12-9-10	0930	CM Aguilar CM Aguilar 12-9-10	0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CM Aguilar CM Aguilar 12-9-10	1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FedEx 12-10-10	10:10	[illegible] 12-10-10	10:10
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-660	PAGE 1 OF 1

COLLECTOR Turner, Crow	COMPANY CONTACT RADLOFF, ANNA	TELEPHONE NO. (509) 376-4554	PROJECT COORDINATOR KESSNER, JH	PRICE CODE 8N DATA TURNAROUND
SAMPLING LOCATION C8239 (118-B-8); I-004	PROJECT DESIGNATION Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		SAF NO. RC-195	AIR QUALITY ☐ 45 Days / 45 Days
ICE CHEST NO. GWS-117	FIELD LOGBOOK NO. HNF-N-585-15 PG 20	ACTUAL SAMPLE DEPTH 12.4-14.9 ft	COA 302512ES10	METHOD OF SHIPMENT FEDERAL EXPRESS
SHIPPED TO Lionville Laboratory Incorporated	OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. SEE PTR 7965351 67463	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B29K54

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B29K67	SOIL	12-7-10	1040	X	X	X	X	X	X	X

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner AT 12-7-10	1145	M0413 SSH R1 AT 12-7	12-7-10 1145
SSH-R1	12-9-10 0930	CmAguilar CmAg	12-9-10 0930
CmAguilar CmAg	12-9-10 1400	FEDEX	
FEDEX	12-10-10 10:10	DSmith	12-10-10/10:10

SPECIAL INSTRUCTIONS

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐

(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC HanfordRC.195 Date: 12-10-10

Project/SAF/SOW/Release #:

LvL Batch #: 1012097 Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7965 3516 7463
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 3.3 °C		Cooler # GWS.117
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? [initials] 12-10-10	☑ 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

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

RECEIVED
MAR 2011

WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/21/2011 13:46

Analytical Report for Metals by SW846 6000/7000 series

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B28NB0	1012097-01	Soil	12/07/2010 14:35	12/10/2010 10:10
B28NC5	1012097-02	Soil	12/08/2010 14:40	12/10/2010 10:10
B29K64	1012097-03	Soil	12/07/2010 09:50	12/10/2010 10:10
B29K67	1012097-04	Soil	12/07/2010 10:40	12/10/2010 10:10

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-195
LVL#: 1012097
SDG/SAF#: K2755/RC-195

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

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 4 soil samples.

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

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), samples were 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.

10. The matrix spike (MS) recoveries for 8 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:

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 22 pages.

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
B28NB0	Aluminum	22,000	71.3
	Antimony	100	91.3
	Calcium	20,800	68.1
	Copper	100	83.2
	Iron	42,000	60.7
	Magnesium	21,600	69.3
	Manganese	1,000	71.8
	Silicon	2,100	92.7

12. All 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.

13. 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.

14. 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.

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 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

1/24/11
Date

alm/12-097

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

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-195 Project Number: K2755 Project Manager: Joan Kessner	**Reported:** 01/21/2011 13:46

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

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

WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/21/2011 13:46

B28NB0

1012097-01 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	**5790**		4.31	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Antimony	**0.413**	B	0.517	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Arsenic	**2.14**		0.861	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Barium	**46.9**		0.431	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Beryllium	**0.281**		0.172	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Bismuth	8.61	U	8.61	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Boron	**1.11**	B	1.72	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Cadmium	**0.111**	B	0.172	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Calcium	**5080**		86.1	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Chromium	**8.09**		0.172	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Cobalt	**7.66**		1.72	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Copper	**16.9**		0.861	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Iron	**22500**		17.2	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Lead	**3.37**		0.431	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Lithium	**6.84**		2.15	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Magnesium	**3560**		64.6	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Manganese	**292**		4.31	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Molybdenum	**0.478**	B	1.72	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Nickel	**7.66**		3.45	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Phosphorus	**1040**		43.1	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Potassium	**877**		345	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Selenium	0.258	U	0.258	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Silicon	**702**		1.72	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Silver	0.172	U	0.172	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Sodium	**368**		43.1	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Strontium	**19.8**		0.861	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Thallium	0.431	U	0.431	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Tin	**2.39**	B	8.61	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Vanadium	**59.4**		2.15	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Zinc	**41.5**		8.61	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Mercury	**0.0136**	B	0.0271	mg/kg dry	1	L012280	12/22/2010	12/22/2010	7471A

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/21/2011 13:46

B28NC5

1012097-02 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory									
Metals by SW846 6000/7000 series									
Aluminum	**4390**		4.60	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Antimony	**0.540**	B	0.552	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Arsenic	**1.45**		0.921	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Barium	**62.3**		0.460	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Beryllium	**0.222**		0.184	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Bismuth	9.21	U	9.21	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Boron	**0.594**	B	1.84	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Cadmium	**0.113**	B	0.184	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Calcium	**5660**		92.1	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Chromium	**4.93**		0.184	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Cobalt	**9.60**		1.84	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Copper	**15.9**		0.921	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Iron	**29300**		18.4	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Lead	**2.24**		0.460	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Lithium	**4.08**		2.30	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Magnesium	**4060**		69.1	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Manganese	**337**		4.60	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Molybdenum	**0.531**	B	1.84	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Nickel	**10.8**		3.68	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Phosphorus	**1520**		46.0	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Potassium	**539**		368	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Selenium	0.276	U	0.276	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Silicon	**477**		1.84	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Silver	0.184	U	0.184	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Sodium	**426**		46.0	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Strontium	**21.4**		0.921	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Thallium	0.460	U	0.460	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Tin	**2.87**	B	9.21	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Vanadium	**80.3**		2.30	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Zinc	**48.1**		9.21	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Mercury	0.0262	U	0.0262	mg/kg dry	1	L012280	12/22/2010	12/22/2010	7471A

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	01/21/2011 13:46

B29K64

1012097-03 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	**7990**		4.24	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Antimony	**0.444**	B	0.509	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Arsenic	**2.83**		0.848	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Barium	**69.2**		0.424	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Beryllium	**0.330**		0.170	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Bismuth	8.48	U	8.48	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Boron	**1.17**	B	1.70	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Cadmium	**0.126**	B	0.170	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Calcium	**5860**		84.8	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Chromium	**10.8**		0.170	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Cobalt	**8.55**		1.70	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Copper	**16.9**		0.848	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Iron	**24900**		17.0	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Lead	**4.90**		0.424	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Lithium	**8.02**		2.12	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Magnesium	**4820**		63.6	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Manganese	**344**		4.24	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Molybdenum	**0.489**	B	1.70	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Nickel	**10.8**		3.39	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Phosphorus	**997**		42.4	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Potassium	**1360**		339	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Selenium	0.254	U	0.254	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Silicon	**555**		1.70	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Silver	0.170	U	0.170	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Sodium	**379**		42.4	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Strontium	**25.4**		0.848	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Thallium	0.424	U	0.424	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Tin	**2.58**	B	8.48	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Vanadium	**63.7**		2.12	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Zinc	**47.4**		8.48	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Mercury	0.0271	U	0.0271	mg/kg dry	1	L012280	12/22/2010	12/22/2010	7471A

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/21/2011 13:46

B29K67

1012097-04 (Soil)

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory						
Metals by SW846 6000/7000 series									
Aluminum	**7970**		3.94	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Antimony	**0.368**	B	0.473	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Arsenic	**3.04**		0.788	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Barium	**71.8**		0.394	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Beryllium	**0.353**		0.158	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Bismuth	**0.588**	B	7.88	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Boron	**1.24**	B	1.58	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Cadmium	**0.131**	B	0.158	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Calcium	**7480**		78.8	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Chromium	**12.8**		0.158	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Cobalt	**8.81**		1.58	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Copper	**17.4**		0.788	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Iron	**25600**		15.8	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Lead	**5.09**		0.394	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Lithium	**8.82**		1.97	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Magnesium	**4920**		59.1	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Manganese	**359**		3.94	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Molybdenum	**1.05**	B	1.58	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Nickel	**11.2**		3.15	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Phosphorus	**1040**		39.4	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Potassium	**1220**		315	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Selenium	0.236	U	0.236	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Silicon	**652**		1.58	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Silver	0.158	U	0.158	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Sodium	**482**		39.4	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Strontium	**29.0**		0.788	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Thallium	0.394	U	0.394	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Tin	**2.70**	B	7.88	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Vanadium	**66.4**		1.97	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Zinc	**49.4**		7.88	mg/kg dry	1	L101122	01/14/2011	01/20/2011	6010B
Mercury	0.0280	U	0.0280	mg/kg dry	1	L012280	12/22/2010	12/22/2010	7471A

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/21/2011 13:46

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 L012280 - SW 7471A Prep										
Blank (L012280-BLK1)				Prepared & Analyzed: 12/22/2010						
Mercury	0.0281	U	0.0281	mg/kg wet						
Duplicate (L012280-DUP4)		Source: 1012097-01		Prepared & Analyzed: 12/22/2010						
Mercury	0.0279	U	0.0279	mg/kg dry		0.0136				20
Matrix Spike (L012280-MS4)		Source: 1012097-01		Prepared & Analyzed: 12/22/2010						
Mercury	0.156		0.0257	mg/kg dry	0.14281	0.0136	99.5	75-125		
Reference (L012280-SRM1)				Prepared & Analyzed: 12/22/2010						
Mercury	1.26		0.0281	mg/kg wet	1.2600		99.8	65.9-133.3		
Batch L101122 - SW 3050B										
Blank (L101122-BLK1)				Prepared: 01/14/2011 Analyzed: 01/20/2011						
Aluminum	4.55	U	4.55	mg/kg wet						
Antimony	0.545	U	0.545	mg/kg wet						
Arsenic	0.909	U	0.909	mg/kg wet						
Barium	0.455	U	0.455	mg/kg wet						
Beryllium	0.182	U	0.182	mg/kg wet						
Bismuth	9.09	U	9.09	mg/kg wet						
Boron	1.82	U	1.82	mg/kg wet						
Cadmium	0.182	U	0.182	mg/kg wet						
Calcium	90.9	U	90.9	mg/kg wet						
Chromium	0.182	U	0.182	mg/kg wet						
Cobalt	1.82	U	1.82	mg/kg wet						
Copper	0.909	U	0.909	mg/kg wet						
Iron	18.2	U	18.2	mg/kg wet						
Lead	0.455	U	0.455	mg/kg wet						
Lithium	0.733	B	2.27	mg/kg wet						
Magnesium	68.2	U	68.2	mg/kg wet						
Manganese	4.55	U	4.55	mg/kg wet						
Molybdenum	1.82	U	1.82	mg/kg wet						
Nickel	3.64	U	3.64	mg/kg wet						
Phosphorus	45.5	U	45.5	mg/kg wet						
Potassium	364	U	364	mg/kg wet						
Selenium	0.273	U	0.273	mg/kg wet						
Silicon	2.42		1.82	mg/kg wet						
Silver	0.182	U	0.182	mg/kg wet						
Sodium	45.5	U	45.5	mg/kg wet						

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/21/2011 13:46

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 L101122 - SW 3050B										
Blank (L101122-BLK1)				Prepared: 01/14/2011 Analyzed: 01/20/2011						
Strontium	0.909	U	0.909	mg/kg wet						
Thallium	0.455	U	0.455	mg/kg wet						
Tin	1.81	B	9.09	mg/kg wet						
Vanadium	2.27	U	2.27	mg/kg wet						
Zinc	9.09	U	9.09	mg/kg wet						
Duplicate (L101122-DUP2)		Source: 1012097-01		Prepared: 01/14/2011 Analyzed: 01/20/2011						
Aluminum	5860		4.11	mg/kg dry		5790			1	20
Antimony	0.445	B	0.493	mg/kg dry		0.413			8	20
Arsenic	2.08		0.822	mg/kg dry		2.14			3	20
Barium	51.7		0.411	mg/kg dry		46.9			10	20
Beryllium	0.245		0.164	mg/kg dry		0.281			14	20
Bismuth	8.22	U	8.22	mg/kg dry		8.61 U				20
Boron	0.993	B	1.64	mg/kg dry		1.11			11	20
Cadmium	0.129	B	0.164	mg/kg dry		0.111			15	20
Calcium	4990		82.2	mg/kg dry		5080			2	20
Chromium	8.29		0.164	mg/kg dry		8.09			2	20
Cobalt	7.88		1.64	mg/kg dry		7.66			3	20
Copper	15.3		0.822	mg/kg dry		16.9			10	20
Iron	22000		16.4	mg/kg dry		22500			2	20
Lead	3.42		0.411	mg/kg dry		3.37			1	20
Lithium	6.59		2.06	mg/kg dry		6.84			4	20
Magnesium	4210		61.7	mg/kg dry		3560			17	20
Manganese	296		4.11	mg/kg dry		292			1	20
Molybdenum	0.401	B	1.64	mg/kg dry		0.478			18	20
Nickel	8.38		3.29	mg/kg dry		7.66			9	20
Phosphorus	880		41.1	mg/kg dry		1040			17	20
Potassium	941		329	mg/kg dry		877			7	20
Selenium	0.247	U	0.247	mg/kg dry		0.258 U				20
Silicon	653		1.64	mg/kg dry		702			7	20
Silver	0.164	U	0.164	mg/kg dry		0.172 U				20
Sodium	369		41.1	mg/kg dry		368			0.3	20
Strontium	20.5		0.822	mg/kg dry		19.8			4	20
Thallium	0.411	U	0.411	mg/kg dry		0.431 U				20
Tin	2.22	B	8.22	mg/kg dry		2.39			7	20
Vanadium	53.1		2.06	mg/kg dry		59.4			11	20
Zinc	40.5		8.22	mg/kg dry		41.5			2	20

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/21/2011 13:46

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 L101122 - SW 3050B									
Matrix Spike (L101122-MS2)		**Source: 1012097-01**	Prepared: 01/14/2011 Analyzed: 01/20/2011						
Aluminum	7890	4.85	mg/kg dry	193.81	5790	1080*	75-125		
Antimony	23.9	0.581	mg/kg dry	48.452	0.413	48*	75-125		
Arsenic	163	0.969	mg/kg dry	193.81	2.14	83	75-125		
Barium	222	0.485	mg/kg dry	193.81	46.9	91	75-125		
Beryllium	4.38	0.194	mg/kg dry	4.8452	0.281	85	75-125		
Bismuth	397	9.69	mg/kg dry	484.52	8.61 U	82	75-125		
Boron	74.8	1.94	mg/kg dry	96.904	1.11	76	75-125		
Cadmium	4.01	0.194	mg/kg dry	4.8452	0.111	80	75-125		
Calcium	8250	96.9	mg/kg dry	2422.6	5080	131*	75-125		
Chromium	25.1	0.194	mg/kg dry	19.381	8.09	88	75-125		
Cobalt	47.6	1.94	mg/kg dry	48.452	7.66	82	75-125		
Copper	34.1	0.969	mg/kg dry	24.226	16.9	71*	75-125		
Iron	24800	19.4	mg/kg dry	96.904	22500	2450*	75-125		
Lead	42.3	0.485	mg/kg dry	48.452	3.37	80	75-125		
Lithium	91.8	2.42	mg/kg dry	96.904	6.84	88	75-125		
Magnesium	6680	72.7	mg/kg dry	2422.6	3560	129*	75-125		
Manganese	386	4.85	mg/kg dry	48.452	292	196*	75-125		
Molybdenum	80.5	1.94	mg/kg dry	96.904	0.478	83	75-125		
Nickel	48.8	3.88	mg/kg dry	48.452	7.66	85	75-125		
Phosphorus	1510	48.5	mg/kg dry	484.52	1040	96	75-125		
Potassium	3230	388	mg/kg dry	2422.6	877	97	75-125		
Selenium	156	0.291	mg/kg dry	193.81	0.258 U	80	75-125		
Silicon	882	1.94	mg/kg dry	96.904	702	185*	75-125		
Silver	3.83	0.194	mg/kg dry	4.8452	0.172 U	79	75-125		
Sodium	2610	48.5	mg/kg dry	2422.6	368	93	75-125		
Strontium	107	0.969	mg/kg dry	96.904	19.8	90	75-125		
Thallium	147	0.485	mg/kg dry	193.81	0.431 U	76	75-125		
Tin	78.7	9.69	mg/kg dry	96.904	2.39	79	75-125		
Vanadium	100	2.42	mg/kg dry	48.452	59.4	84	75-125		
Zinc	86.4	9.69	mg/kg dry	48.452	41.5	93	75-125		

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

WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/21/2011 13:46

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 L101122 - SW 3050B									
Reference (L101122-SRM1)			Prepared: 01/14/2011 Analyzed: 01/20/2011						
Aluminum	8080	11.4	mg/kg wet	6766.6		119	0-225.5		
Antimony	53.2	1.36	mg/kg wet	56.630		94	0-225.6		
Arsenic	117	2.27	mg/kg wet	113.85		103	85-115		
Barium	305	1.14	mg/kg wet	298.35		102	75.7-124.3		
Beryllium	107	0.455	mg/kg wet	108.32		99	85.2-114.8		
Boron	88.1	4.55	mg/kg wet	86.580		102	68.5-131.6		
Cadmium	230	0.455	mg/kg wet	224.09		102	84.9-115.1		
Calcium	3290	227	mg/kg wet	3305.9		99	82.8-117.2		
Chromium	79.0	0.455	mg/kg wet	77.590		102	76.8-123.2		
Cobalt	167	4.55	mg/kg wet	163.19		102	79.4-120.6		
Copper	261	2.27	mg/kg wet	265.65		98	82.4-117.6		
Iron	8580	45.5	mg/kg wet	8202.8		105	78.9-121.1		
Lead	187	1.14	mg/kg wet	187.62		100	81.5-118.5		
Lithium	112	5.68	mg/kg wet	113.01		99	33.8-166.2		
Magnesium	8080	170	mg/kg wet	8352.3		97	84.2-115.8		
Manganese	1010	11.4	mg/kg wet	951.35		106	69-131		
Molybdenum	238	4.55	mg/kg wet	234.78		102	80.1-119.9		
Nickel	224	9.09	mg/kg wet	220.85		101	81.4-118.6		
Potassium	14900	909	mg/kg wet	14177		105	85.7-114.3		
Selenium	196	0.682	mg/kg wet	187.99		105	78.8-121.2		
Silicon	1400	4.55	mg/kg wet	939.78		150	0-272.3		
Silver	82.2	0.455	mg/kg wet	83.960		98	81.9-118.1		
Sodium	9080	114	mg/kg wet	9587.1		95	83.5-116.4		
Strontium	189	2.27	mg/kg wet	171.65		110	67.5-132.5		
Thallium	87.8	1.14	mg/kg wet	85.410		103	77.1-122.9		
Tin	102	22.7	mg/kg wet	101.60		101	86.7-113.2		
Vanadium	103	5.68	mg/kg wet	97.430		106	75.8-124.2		
Zinc	202	22.7	mg/kg wet	196.52		103	78.9-121.1		

Lionville Laboratory **Logbook #:** 855

SAMPLE DIGESTION RECORD

Digestion Batch #: L101172
Date/Time Initiated: 1/14/11 0945
Date/Time Completed: 1/14/11 1410
Analyst: JJS
Matrix (circle): Soil Water Other
Method (circle one): 3005A 3010A 3050 200.7 (1994)

Digested / Undigested (circle one)
Balance #: B14
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
1017045-01		0.51	50		TO	Coarse	Brown	Rocks	N/A
L101172-Rg1		0.63	50						
* -MS1	0.5	0.57	50						
1017045-02		0.70	50			Fine	gray	Rocks	
-03		0.67	50			Coarse	Ottawa Sand		
-04		0.72	50			Coarse	Ottawa Sand		
1017097-01		0.63	50			Coarse	Brown	Rocks	
L101172-Rg2		0.66	50						
* -MS2	0.5	0.56	50						
1017097-02		0.57	50			Coarse	Black	Rocks	
-03		0.64	50			Fine	Brown	Rocks	
-04		0.69	50			Fine	Brown	Rocks	
L101172-BK1		0.55	50			Coarse	Boiling chips		
-SAM1		0.66	50			Fine	dusty pink sand		

JJS 1/14/11

Spiking IDs / Expiration Date:
MS#: 1001843
LCS#: 1001320

Reagent IDs:
HNO_3 J79049
HCl J43F02
H_2O_2 J43A17
1:1 HNO_3 637-033-02
1:1 HCl

File ID#:

Data Review By / Date: 1/17/11

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Signed\SPI\Metals Digestion log.doc

* 6072-089-15 found
087-12

Page #:

000000813

Lionville Laboratory

MERCURY PREPARATION

Logbook # 844

Analyst: [illegible]
Date 12/22/10
Start Time/Temp: 2000/95°
End Time/Temp: 2040/97°

Instrument ID: HG3.2
Balance # 629 /NA
Pipette Calibration (Daily) (Y) ____

Prep Batch: L012280
Worksheet: HG122202
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	
L012280-BLK1				0.32	50	
SRM1		(illegible)	(illegible)	0.32	50	
1011035-01				0.38	50	
L012280-DUP1				0.37	50	
MS1		0.500	1.0	0.38	50	
1012084-01				0.36	50	
L012280-DUP2				0.37	50	
MS2		0.500	1.0	0.37	50	
1012084-02				0.33	50	
1012086-01				0.34	50	
L012280-DUP3				0.38	50	
MS3		0.500	1.0	0.38	50	
1012086-02				0.35	50	
04				0.37	50	
1012097-01				0.36	50	
L012280-DUP4				0.35	50	
MS4		0.500	1.0	0.38	50	
1012097-02				0.36	50	

Standard:	ID	Prep Date/Time
ICAL/MS	RI 09019858	12/22/10 1700
ICV/CCV/LCS	I.V. 09022974	I

Reviewed By/Date: [illegible] 12/23/10

se book # 9368 for std traceability information

Soil LCS True Value = 1.126 mg/Kg
Standard # 1001320 (illegible)

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

Lionville Laboratory

MERCURY PREPARATION

Logbook # 814

Analyst: [illegible]
Date 12/22/10
Start Time/Temp: 048
End Time/Temp: see pg 048

Instrument ID: HG3.2
Balance # B29 /NA
Pipette Calibration (Daily) (Y)

Prep Batch: L012280
Worksheet: HG122202
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.
1012097-03				0.36	50	
04				0.35	50	
1012119-01				0.35	50	
L012280-DUP5				0.36	50	
MS5		0.500	1.0	0.37	50	
1012120-01				0.30	50	
L012280-DUP6				0.32	50	
MS6		0.500	1.0	0.30	50	
1012134-01				0.34	50	
02				0.36	50	
L012280-DUP7				0.36	50	
MS7		0.500	1.0	0.36	50	
1012134-03				0.35	50	~~RA~~
1012147-01				0.23	50	RAD III Balance B-2
02				0.24	50	RAD II
L012280-DUP8				0.25	50	↓
MS8		0.500	1.0	0.31	50	↓
1012147-03				0.25	50	RAD III
04				0.26	50	↓

[illegible] 12/22/10

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

Reviewed By/Date: [illegible] 12/23/10

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
Soil LCS Spiking Concentration: 1.0 µg/ml

ME-HgCVAA-Prep0910

Page #:

Lionville Laboratory Use Only

1012097

Custody Transfer Record/Lab Work Request

Page 1 of 1

SEE SRC

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client WC Hanford SAF# RC.195

Est. Final Proj. Sampling Date

Project#

Project Contact/Phone#

Lionville Laboratory Project Manager Arlette Johnson

QC SW Del STD TAT 30 days

Date Rec'd 12.10.10 Date Due 1-9-11

		A	B	C	D	E	F	G
Refrigerator #		1	1	1	1	1	1	1
#/Type Container	Liquid							
	Solid	1 aq	1 aq	1 aq	1 aq	1 aq	1 aq	1 aq
Volume	Solid	250	250	120	250	120	250	120
Preservatives		—	—	—	—		—	—
ANALYSES REQUESTED		ORGANIC: VOA, BNA, ~~Pest~~ PCB, Herb			INORG: (2) Metal + Hg, CN			
		8082	8310 PAHs	KRO-DRO	Met	CrVI	Ignitability	3 Anions 202 203

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	8082	8310 PAH	KRO-DRO	Met	CrVI	Ignitability	3 Anions	N3N2
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	B28NB0			S	12-7-10	1435	X	X	X	X	X	X	X	X
	02	B28NC5				12-8-10	1440	X	X	X	X	X	X	X	X
	03	B29K64				12-7-10	0950	X	X	X	X	X	X	X	X
	04	B29K67					1040	X	X	X	X	X	X	X	X

Lionville Laboratory Use Only

Special Instructions: Run matrix QC

Special Instructions:

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

Relinquished by	Received by	Date	Time
[signature]	[signature]	12.10.10	10:0

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

9100000916

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-534	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-005	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-115	HNF-N-585-15 PG 20	17.4- 19.9 Ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR	796535167463	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B28N47

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None	None	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP	None	None
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P	Split Spoon Liner	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL	1000g	200g
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B28NB0	SOIL	12-7-10	1435	X	X	X	X	X	X	X	*NC	*NC

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner AT	12-7-10 1530	SSU-R1	12-7-10 1530
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R1	12-9-10 0930	CM Aguilar CM Aguilar	12-9-10 0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CM Aguilar CM Aguilar	12-9-10 1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FEDEX	12-10-10 10:10	DSU-19	12-10-10 10:10
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
*NC - Low yield NOT collected

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-195-534	PAGE 2 OF 2
COLLECTOR Turner, Crow	COMPANY CONTACT RADLOFF, ANNA	TELEPHONE NO. (509) 376-4554	PROJECT COORDINATOR KESSNER, JH	PRICE CODE 8N AIR QUALITY ☐	DATA TURNAROUND 45 Days / 45 Days
SAMPLING LOCATION C8239 (118-B-8); I-005	PROJECT DESIGNATION Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		SAF NO. RC-195		
ICE CHEST NO. GWS-115	FIELD LOGBOOK NO. HNF-N-585-15 pg 20	ACTUAL SAMPLE DEPTH 17.4-19.9 ft	COA 302512ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Lionville Laboratory Incorporated	OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. SEE PTR	7965351 67463	

SPECIAL INSTRUCTIONS

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);
(4) Bulk Density - D2937 (100 Area RIFS); Particle Size (Dry Sieve) - D422 (100 Area RIFS); Saturated Hydraulic Conductivity - D2434 (100 Area RIFS) {Hydraulic Conductivity}; Saturated Hydraulic Conductivity - D5084 (100 Area RIFS) {Hydraulic Conductivity};

ORIGINAL

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-555	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-008	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-115	HNF-N-585-15 pg22	32.3 - 34.8 Ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR 7965351 67463		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: ~~B28NC5~~ MVM 11/29/10
B29R47

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B28NC5	SOIL	12-8-10	1440	X	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner	12-8-10 1550	M0413 SSU R2	12-8-10 1550
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R2	12-9-10 0930	cmAguilar	12-9-10 0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
cmAguilar	12-9-10 1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FedEx	12-10-10 10:10	[illegible]	12-10-10/10:
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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
** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-656	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
C8239 (118-B-8); I-003	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud	RC-195

ICE CHEST NO.	FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH	COA	METHOD OF SHIPMENT
GWS-117	ANF-N-585-15 PG 20	10'-12.5 FT	302512ES10	FEDERAL EXPRESS

SHIPPED TO	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.
Lionville Laboratory Incorporated	SEE PTR	SEE PTR 79653516746 3

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B29K53

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B29K64	SOIL	12-7-10	0950	X	X	X	X	X	X	X

1012097

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner AT 12-7-10	1145	MO 413 SSU R2 RI AM 12-7 12-7-10	1145
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R1 12-9-10	0930	CM Aguilar CM Aguilar 12-9-10	0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CM Aguilar CM Aguilar 12-9-10	1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FedEx 12-10-10	10:10	[illegible] 12-10-10	10
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐

(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-660	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-004	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-117	HNF-N-585-15 pg 20	12.4-14.9 ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR	7965351 67463	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B29K54

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B29K67	SOIL	12-7-10	1040	X	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner AT 12-7-10	1145	M0413 SSH ~~R2~~ R1 AT 12-7 12-7-10	1145
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSH-R1 12-9-10	0930	CmAguilar CmAg 12-9-10	0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CmAguilar CmAg 12-9-10	1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FedEx 12-10-10	10:10	DSM 12-10-10	1010
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐

(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC Hanford RC.195 Date: 12-10-10

Project/SAF/SOW/Release #:

LvL Batch #: 1012097 Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7965 3516 7463
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 3.3 °C		Cooler # GWS-117
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? 12-10-10	☑ 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

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

RECEIVED
MAR 2011

WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	01/13/2011 20:00

Analytical Report for Polynuclear Aromatic Compounds by SW846 8310

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B28NB0	1012097-01	Soil	12/07/2010 14:35	12/10/2010 10:10
B28NC5	1012097-02	Soil	12/08/2010 14:40	12/10/2010 10:10
B29K64	1012097-03	Soil	12/07/2010 09:50	12/10/2010 10:10
B29K67	1012097-04	Soil	12/07/2010 10:40	12/10/2010 10:10

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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Case Narrative

Client: WC-HANFORD RC-195 K2755
LVL #: 1012097

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

POLYNUCLEAR AROMATIC HYDROCARBONS (PAH)

Four (4) soil samples were collected on 12-07,08-2010.

The samples and associated QC samples were extracted 12-14-2010 and analyzed 01-05,06-2011 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 8310.

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 samples 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 limits for all target compounds.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. The initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. The samples were reported on a dry weight basis.
10. 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
LvL Laboratory Manager

1/21/11
Date

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 17 pages.

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.

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	01/13/2011 20:00

B28NB0

1012097-01 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Polynuclear Aromatic Compounds by SW846 8310								
Naphthalene	3.55 U	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Acenaphthylene	3.55 U	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Acenaphthene	**1.85 J**	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Fluorene	**1.83 J**	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Phenanthrene	**30.8**	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Anthracene	**5.21**	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Fluoranthene	**39.1**	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Indeno[1,2,3-cd]pyrene	**5.64**	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Pyrene	**160**	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benz[a]anthracene	**8.13**	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Chrysene	**70.3**	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[b] fluoranthene	**10.8**	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[k] fluoranthene	**3.63**	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[a] pyrene	**11.0**	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Dibenz[a,h]anthracene	3.55 U	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[g,h,i] perylene	**2.53 J**	3.55	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Surrogate: Triphenylene	*107 %*	*68-129*			*L012186*	*12/14/2010*	*01/06/2011*	*8310*

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/13/2011 20:00

B28NC5

1012097-02 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Polynuclear Aromatic Compounds by SW846 8310								
Naphthalene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Acenaphthylene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Acenaphthene	**1.05 J**	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Fluorene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Phenanthrene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Anthracene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Fluoranthene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Indeno[1,2,3-cd]pyrene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Pyrene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benz[a]anthracene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Chrysene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[b] fluoranthene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[k] fluoranthene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[a] pyrene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Dibenz[a,h]anthracene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[g,h,i] perylene	3.32 U	3.32	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Surrogate: Triphenylene	*97 %*	*68-129*			*L012186*	*12/14/2010*	*01/06/2011*	*8310*

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

WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	01/13/2011 20:00

B29K64

1012097-03 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
		Lionville Laboratory						
Polynuclear Aromatic Compounds by SW846 8310								
Naphthalene	3.51 U	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Acenaphthylene	**1.37 J**	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Acenaphthene	**4.71**	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Fluorene	**1.55 J**	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Phenanthrene	**32.0**	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Anthracene	**3.41 J**	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Fluoranthene	**40.9**	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Indeno[1,2,3-cd]pyrene	**4.67**	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Pyrene	**149**	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benz[a]anthracene	**5.83**	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Chrysene	**52.6**	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[b] fluoranthene	**12.5**	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[k] fluoranthene	**3.65**	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[a] pyrene	**8.55**	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Dibenz[a,h]anthracene	3.51 U	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[g,h,i] perylene	**0.913 J**	3.51	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Surrogate: Triphenylene	*107 %*	*68-129*			*L012186*	*12/14/2010*	*01/06/2011*	*8310*

264 Welsh Pool Road
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Phone: 610-280-3000
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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	01/13/2011 20:00

B29K67

1012097-04 (Soil)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			Lionville Laboratory					
Polynuclear Aromatic Compounds by SW846 8310								
Naphthalene	**6.03**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Acenaphthylene	**68.7**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Acenaphthene	**72.1**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Fluorene	**9.05**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Phenanthrene	**122**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Anthracene	**20.3**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Fluoranthene	**142**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Indeno[1,2,3-cd]pyrene	**17.2**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Pyrene	**81.3**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benz[a]anthracene	**29.0**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Chrysene	**23.0**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[b] fluoranthene	**46.1**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[k] fluoranthene	**21.0**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[a] pyrene	**37.9**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Dibenz[a,h]anthracene	**3.52**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Benzo[g,h,i] perylene	**31.5**	3.35	ug/kg dry	1	L012186	12/14/2010	01/06/2011	8310
Surrogate: Triphenylene	*107 %*	*68-129*			*L012186*	*12/14/2010*	*01/06/2011*	*8310*

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

WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	01/13/2011 20:00

Polynuclear Aromatic Compounds by SW846 8310 - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L012186 - SW 3540C									
Blank (L012186-BLK1)			Prepared: 12/14/2010 Analyzed: 01/05/2011						
Naphthalene	3.33 U	3.33	ug/kg wet						
Acenaphthylene	3.33 U	3.33	ug/kg wet						
Acenaphthene	3.33 U	3.33	ug/kg wet						
Fluorene	3.33 U	3.33	ug/kg wet						
Phenanthrene	3.33 U	3.33	ug/kg wet						
Anthracene	3.33 U	3.33	ug/kg wet						
Fluoranthene	3.33 U	3.33	ug/kg wet						
Indeno[1,2,3-cd]pyrene	3.33 U	3.33	ug/kg wet						
Pyrene	3.33 U	3.33	ug/kg wet						
Benz[a]anthracene	3.33 U	3.33	ug/kg wet						
Chrysene	3.33 U	3.33	ug/kg wet						
Benzo[b] fluoranthene	3.33 U	3.33	ug/kg wet						
Benzo[k] fluoranthene	3.33 U	3.33	ug/kg wet						
Benzo[a] pyrene	3.33 U	3.33	ug/kg wet						
Dibenz[a,h]anthracene	3.33 U	3.33	ug/kg wet						
Benzo[g,h,i] perylene	3.33 U	3.33	ug/kg wet						
Surrogate: Triphenylene	*157*		*ug/kg wet*	*166.67*		*94*	*68-129*		
LCS (L012186-BS1)			Prepared: 12/14/2010 Analyzed: 01/05/2011						
Naphthalene	133	3.33	ug/kg wet	166.67		80	0-127		
Acenaphthylene	152	3.33	ug/kg wet	166.67		91	50-140		
Acenaphthene	144	3.33	ug/kg wet	166.67		86	17-139		
Fluorene	144	3.33	ug/kg wet	166.67		86	28-145		
Phenanthrene	147	3.33	ug/kg wet	166.67		88	30-152		
Anthracene	157	3.33	ug/kg wet	166.67		94	19-171		
Fluoranthene	149	3.33	ug/kg wet	166.67		90	34-159		
Indeno[1,2,3-cd]pyrene	145	3.33	ug/kg wet	166.67		87	31-156		
Pyrene	165	3.33	ug/kg wet	166.67		99	33-152		
Benz[a]anthracene	157	3.33	ug/kg wet	166.67		94	32-157		
Chrysene	156	3.33	ug/kg wet	166.67		94	31-159		
Benzo[b] fluoranthene	155	3.33	ug/kg wet	166.67		93	33-164		
Benzo[k] fluoranthene	164	3.33	ug/kg wet	166.67		98	28-161		
Benzo[a] pyrene	148	3.33	ug/kg wet	166.67		89	29-149		
Dibenz[a,h]anthracene	157	3.33	ug/kg wet	166.67		94	27-153		
Benzo[g,h,i] perylene	167	3.33	ug/kg wet	166.67		100	32-157		
Surrogate: Triphenylene	*160*		*ug/kg wet*	*166.67*		*96*	*68-129*		

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

WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	01/13/2011 20:00

Polynuclear Aromatic Compounds by SW846 8310 - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L012186 - SW 3540C									
Matrix Spike (L012186-MS1)		**Source: 1012097-02**	Prepared: 12/14/2010 Analyzed: 01/06/2011						
Naphthalene	151	3.47	ug/kg dry	173.60	3.32 U	87	0-127		
Acenaphthylene	177	3.47	ug/kg dry	173.60	3.32 U	102	50-140		
Acenaphthene	177	3.47	ug/kg dry	173.60	1.05	101	17-139		
Fluorene	169	3.47	ug/kg dry	173.60	3.32 U	97	28-145		
Phenanthrene	176	3.47	ug/kg dry	173.60	3.32 U	101	30-152		
Anthracene	184	3.47	ug/kg dry	173.60	3.32 U	106	19-171		
Fluoranthene	177	3.47	ug/kg dry	173.60	3.32 U	102	34-159		
Indeno[1,2,3-cd]pyrene	172	3.47	ug/kg dry	173.60	3.32 U	99	31-156		
Pyrene	198	3.47	ug/kg dry	173.60	3.32 U	114	33-152		
Benz[a]anthracene	185	3.47	ug/kg dry	173.60	3.32 U	107	32-157		
Chrysene	187	3.47	ug/kg dry	173.60	3.32 U	108	31-159		
Benzo[b] fluoranthene	188	3.47	ug/kg dry	173.60	3.32 U	108	33-164		
Benzo[k] fluoranthene	194	3.47	ug/kg dry	173.60	3.32 U	112	28-161		
Benzo[a] pyrene	166	3.47	ug/kg dry	173.60	3.32 U	96	29-149		
Dibenz[a,h]anthracene	186	3.47	ug/kg dry	173.60	3.32 U	107	27-153		
Benzo[g,h,i] perylene	194	3.47	ug/kg dry	173.60	3.32 U	112	32-157		
Surrogate: Triphenylene	*170*		*ug/kg dry*	*173.60*		*98*	*68-129*		
Matrix Spike Dup (L012186-MSD1)		**Source: 1012097-02**	Prepared: 12/14/2010 Analyzed: 01/06/2011						
Naphthalene	146	3.30	ug/kg dry	164.98	3.32 U	88	0-127	2	40
Acenaphthylene	168	3.30	ug/kg dry	164.98	3.32 U	102	50-140	0.2	40
Acenaphthene	163	3.30	ug/kg dry	164.98	1.05	98	17-139	3	40
Fluorene	160	3.30	ug/kg dry	164.98	3.32 U	97	28-145	0.1	40
Phenanthrene	167	3.30	ug/kg dry	164.98	3.32 U	101	30-152	0.02	40
Anthracene	175	3.30	ug/kg dry	164.98	3.32 U	106	19-171	0.3	40
Fluoranthene	169	3.30	ug/kg dry	164.98	3.32 U	102	34-159	0.4	40
Indeno[1,2,3-cd]pyrene	162	3.30	ug/kg dry	164.98	3.32 U	98	31-156	0.7	40
Pyrene	191	3.30	ug/kg dry	164.98	3.32 U	116	33-152	2	40
Benz[a]anthracene	175	3.30	ug/kg dry	164.98	3.32 U	106	32-157	0.7	40
Chrysene	173	3.30	ug/kg dry	164.98	3.32 U	105	31-159	3	40
Benzo[b] fluoranthene	176	3.30	ug/kg dry	164.98	3.32 U	107	33-164	1	40
Benzo[k] fluoranthene	185	3.30	ug/kg dry	164.98	3.32 U	112	28-161	0.09	40
Benzo[a] pyrene	158	3.30	ug/kg dry	164.98	3.32 U	96	29-149	0.4	40
Dibenz[a,h]anthracene	177	3.30	ug/kg dry	164.98	3.32 U	108	27-153	0.3	40
Benzo[g,h,i] perylene	187	3.30	ug/kg dry	164.98	3.32 U	113	32-157	1	40
Surrogate: Triphenylene	*163*		*ug/kg dry*	*164.98*		*99*	*68-129*		

PREPARATION BENCH SHEET

L012186

Lionville Laboratory

Printed: 12/16/2010 11:22:48AM

Matrix: Solid **Prepared using: GC - SW 3540C** **Surrogate used: 1001909**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1012097-01	8310 PAH	12/14/2010 15:18	30.51	5				500	WC-Hanford, Inc.	
1012097-02	8310 PAH	12/14/2010 15:18	31.57	5				500	WC-Hanford, Inc.	
1012097-03	8310 PAH	12/14/2010 15:18	30.9	5				500	WC-Hanford, Inc.	
1012097-04	8310 PAH	12/14/2010 15:18	32.45	5				500	WC-Hanford, Inc.	
1012102-01	8310 PAH	12/14/2010 15:18	31.02	5				500	WC-Hanford, Inc.	
1012102-02	8310 PAH	12/14/2010 15:18	30.29	5				500	WC-Hanford, Inc.	
1012102-03	8310 PAH	12/14/2010 15:18	31.15	5				500	WC-Hanford, Inc.	
L012186-BLK1	QC	12/14/2010 15:18	30	5				500		
L012186-BS1	QC	12/14/2010 15:18	30	5	1001668		1000	500		
L012186-MS1	QC	12/14/2010 15:18	30.23	5	1001668	1012097-02	1000	500		
L012186-MS2	QC	12/14/2010 15:18	31.25	5	1001668	1012102-01	1000	500		
L012186-MSD1	QC	12/14/2010 15:18	31.81	5	1001668	1012097-02	1000	500		
L012186-MSD2	QC	12/14/2010 15:18	30.61	5	1001668	1012102-01	1000	500		

D. Ami 12/16/10 11:22
Extracts Relinquished By Date

S. Zook 12/16/10 11:32
Extracts Received By Date

Lionville Laboratory Use Only

1012097

Custody Transfer Record/Lab Work Request

Page 1 of 1

SRC

SRC

LVLI LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client WC Hanford SAF# RC.195

Est. Final Proj. Sampling Date

Project#

Project Contact/Phone#

Lionville Laboratory Project Manager Arlette Johnson

QC SW Del SFD TAT 30 days

Date Rec'd 12.10.10 Date Due 1-9-11

		A		B	C		D		E	F	G			
Refrigerator #		1		1	1		1		1	1	1			
#/Type Container	Liquid													
	Solid	1aal		1aal	1aal		1aal		1aal	1aal	1aal			
Volume	Solid	250		250	120		250		120	250	120			
Preservatives		—		—	—		—			—	—			
ANALYSES REQUESTED		ORGANIC						INORG						
		VOA	BNA	~~Pest~~ PCB	Herb	PAHs 8310	TPH-A TPH-C	(2) Metal + Hg	CN	Cr+6	Fl	(3) Hg Anions	202 203	
		Lionville Laboratory Use Only												
		8082		8310 PAH	KRO-DRO		Met		CPC	Phenols Pff		Anions	N3 N2	

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	8082	8310 PAH	KRO-DRO	Met	CPC	Phenols Pff	Anions	N3 N2
01	B28NB0			S	12-7-10	1435	X	X	X	X	X	X	X	X
02	B28NC5				12-8-10	1440	X	X	X	X	X	X	X	X
03	B29K64				12-7-10	0950	X	X	X	X	X	X	X	X
04	B29K67					1040	X	X	X	X	X	X	X	X

Special Instructions: Run Matrix QC

Special Instructions:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	12.10.10	10:0

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-534	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-005	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-115	HNF-N-585-15 PG 20	17.4- 19.9 Ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR	796535167463	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B28N47

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None	None	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP	None	None
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P	Split Spoon Liner	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL	1000g	200g
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B28NB0	SOIL	12-7-10	1435	X	X	X	X	X	X	X	*NC	*NC

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner AT	12-7-10 1530	SSU-R1	12-7-10 1530
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R1	12-9-10 0930	CM Aguilar CM Aguilar	12-9-10 0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CM Aguilar CM Aguilar	12-9-10 1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FedEx	12-10-10 10:10	[illegible]	12-10-10 10:10
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
*NC - Low yield NOT collected

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-195-534	PAGE 2 OF 2
COLLECTOR Turner, Crow	COMPANY CONTACT RADLOFF, ANNA	TELEPHONE NO. (509) 376-4554	PROJECT COORDINATOR KESSNER, JH	PRICE CODE 8N	DATA TURNAROUND
SAMPLING LOCATION C8239 (118-B-8); I-005	PROJECT DESIGNATION Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		SAF NO. RC-195	AIR QUALITY ☐	45 Days / 45 Days
ICE CHEST NO. GWS-115	FIELD LOGBOOK NO. HNF-N-585-15 pg 20	ACTUAL SAMPLE DEPTH 17.4-19.9 ft	COA 302512ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Lionville Laboratory Incorporated	OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. SEE PTR	7965351 67463	

SPECIAL INSTRUCTIONS

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);
(4) Bulk Density - D2937 (100 Area RIFS); Particle Size (Dry Sieve) - D422 (100 Area RIFS); Saturated Hydraulic Conductivity - D2434 (100 Area RIFS) {Hydraulic Conductivity}; Saturated Hydraulic Conductivity - D5084 (100 Area RIFS) {Hydraulic Conductivity};

ORIGINAL

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-555	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-008	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-115	HNF-N-585-15 p622	32.3 - 34.8 ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR 79653516746 3		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: ~~B28N65~~ MVM 11/29/10
B29K47

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B28NC5	SOIL	12-8-10	1440	X	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner	12-8-10 1550	M0413 SSU R2	12-8-10 1550
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R2	12-9-10 0930	CM Aguilar	12-9-10 0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CM Aguilar	12-9-10 1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FedEx	12-10-10 10:10	[illegible]	12-10-10 10:
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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
** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-656	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-003	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-117	ANF-N-585-15 pg 20	10-12.5 ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR	796535167463	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B29K53

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B29K64	SOIL	12-7-10	0950	X	X	X	X	X	X	X

1012097

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner	12-7-10 1145	MO 413 SSU R2 (R1 M 12-7)	12-7-10 1145
SSU-R1	12-9-10 0930	Cm Aguilar	12-9-10 0930
Cm Aguilar	12-9-10 1400	FEDEX	
FEDEX	12-10-10 10:10	William D Smith	12-10-10 10:10

SPECIAL INSTRUCTIONS
** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-660	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-004	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-117	HNF-N-585-15 pg 20	12.4-14.9 ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR	7965351 67463	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B29K54

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B29K67	SOIL	12-7-10	1040	X	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner AT 12-7-10	1145	M0413 SSH ~~R2~~ R1 AT 12-7 12-7-10	1145
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSH-R1 12-9-10	0930	CM Aguilar CM Aguilar 12-9-10	0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CM Aguilar CM Aguilar 12-9-10	1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FEDEX 12-10-10	110:10	[illegible] 12-10-10/10:16	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC HanfordRC.195 Date: 12-10-10

Project/SAF/SOW/Release #:

LvL Batch #: 1012097 Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7965 3516 7463
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 3.3 °C		Cooler # GWS-117
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? 12-10-10	☑ 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

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

RECEIVED
MAR 2011

WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	01/20/2011 20:35

Analytical Report for Extractable Petroleum Hydrocarbons by SW846 8015

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B28NB0	1012097-01	Soil	12/07/2010 14:35	12/10/2010 10:10
B28NC5	1012097-02	Soil	12/08/2010 14:40	12/10/2010 10:10
B29K64	1012097-03	Soil	12/07/2010 09:50	12/10/2010 10:10
B29K67	1012097-04	Soil	12/07/2010 10:40	12/10/2010 10:10

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

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Case Narrative

Client: WC-HANFORD RC-195 K2755
LVL #: 1012097

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

DIESEL RANGE ORGANICS

Four (4) soil samples were collected on 12-07,08-2010.

The samples and associated QC samples were extracted 12-13-2010, 01-17-2011 and analyzed 12-17-2010, 01-06,07,19,20-2011 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 8015B for Diesel Range Organics.

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 samples that met LvL's sample acceptance policy.

2. The samples were originally extracted within their required holding time. Due to low surrogate recovery, the sample B28NC5 was re-extracted outside of hold time. Both the original and the re-extracted results have been reported. A copy of the Sample Discrepancy Report (SDR#11GC009) has been enclosed.

3. One (1) of fifteen (15) surrogate recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDDR#11GC009) has been enclosed.

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

5. All blank spike recoveries were within acceptance criteria.

6. All matrix spike recoveries were within acceptance criteria.

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

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

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 20 pages.

10. 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

1/24/11
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 11GC009

Initiator: L. Kauffman
Date: 1-12-11
Client: WC Hanford RC-195

Batch: 1012097
Samples: 02
Method: SW846/MCAWW/CLP/

Parameter: DRO/MO/Ka
Matrix: Solid
Prep Batch: L012172

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)

Surrogate recovery for 1012097-02 (0%) was outside the acceptance range (35-130%).

2. Known or Probable Causes(s)

Sample matrix ?
No surr added ?

3. Discussion and Proposed Action Other Description:

__ 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: _____ 1/12/11

✓ 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: DJS 1/24/11 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: _____

QA-139-A-0208

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.

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Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	01/20/2011 20:35

Extractable Petroleum Hydrocarbons by SW846 8015

Lionville Laboratory

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
B28NB0 (1012097-01) Soil								
Surrogate: p-Terphenyl	*96 %*	*39-129*			*L012172*	*12/13/2010*	*01/07/2011*	*8015M*
Diesel Range Organics	4930	3430	ug/kg dry	1	L012172	12/13/2010	01/07/2011	8015M
Motor Oil	16000	10300	ug/kg dry	1	L012172	12/13/2010	01/07/2011	8015M
Kerosene	10300 U	10300	ug/kg dry	1	L012172	12/13/2010	01/07/2011	8015M
B28NC5 (1012097-02) Soil								
Surrogate: p-Terphenyl	*% **	*U* *39-129*			*L012172*	*12/13/2010*	*01/07/2011*	*8015M*
Diesel Range Organics	3430 U	3430	ug/kg dry	1	L012172	12/13/2010	01/07/2011	8015M
Motor Oil	10300 U	10300	ug/kg dry	1	L012172	12/13/2010	01/07/2011	8015M
Kerosene	10300 U	10300	ug/kg dry	1	L012172	12/13/2010	01/07/2011	8015M
B28NC5 (1012097-02RE1) Soil								
Surrogate: p-Terphenyl	*91 %*	*39-129*			*L101154*	*12/13/2010*	*01/20/2011*	*8015M*
Diesel Range Organics	3470 U	3470	ug/kg dry	1	L101154	12/13/2010	01/20/2011	8015M
Motor Oil	10400 U	10400	ug/kg dry	1	L101154	12/13/2010	01/20/2011	8015M
Kerosene	10400 U	10400	ug/kg dry	1	L101154	12/13/2010	01/20/2011	8015M
B29K64 (1012097-03) Soil								
Surrogate: p-Terphenyl	*80 %*	*39-129*			*L012172*	*12/13/2010*	*01/06/2011*	*8015M*
Diesel Range Organics	12400	3580	ug/kg dry	1	L012172	12/13/2010	01/06/2011	8015M
Motor Oil	32800	10700	ug/kg dry	1	L012172	12/13/2010	01/06/2011	8015M
Kerosene	10700 U	10700	ug/kg dry	1	L012172	12/13/2010	01/06/2011	8015M
B29K67 (1012097-04) Soil								
Surrogate: p-Terphenyl	*100 %*	*39-129*			*L012172*	*12/13/2010*	*01/06/2011*	*8015M*
Diesel Range Organics	57900	3480	ug/kg dry	1	L012172	12/13/2010	01/06/2011	8015M
Motor Oil	132000	10400	ug/kg dry	1	L012172	12/13/2010	01/06/2011	8015M
Kerosene	10400 U	10400	ug/kg dry	1	L012172	12/13/2010	01/06/2011	8015M

LIONVILLE LABORATORY
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Fax: 610-280-3041

WC-Hanford, Inc. 2620 Fermi Avenue Richland WA, 99354	Project: RC-195 Project Number: K2755 Project Manager: Joan Kessner	**Reported:** 01/20/2011 20:35

Extractable Petroleum Hydrocarbons by SW846 8015 - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L012172 - SW 3540C									
Blank (L012172-BLK1)			Prepared: 12/13/2010 Analyzed: 12/17/2010						
Diesel Range Organics	3330 U	3330	ug/kg wet						
Motor Oil	10000 U	10000	ug/kg wet						
Surrogate: p-Terphenyl	*5930*		*ug/kg wet*	*6666.7*		*89*	*39-129*		
Blank (L012172-BLK2)			Prepared: 12/13/2010 Analyzed: 01/06/2011						
Kerosene	10000 U	10000	ug/kg wet						
LCS (L012172-BS1)			Prepared: 12/13/2010 Analyzed: 12/17/2010						
Diesel Range Organics	61300	3330	ug/kg wet	66667		92	42-133		
Surrogate: p-Terphenyl	*6590*		*ug/kg wet*	*6666.7*		*99*	*39-129*		
LCS (L012172-BS2)			Prepared: 12/13/2010 Analyzed: 01/06/2011						
Kerosene	56800	10000	ug/kg wet	66667		85	0-200		
Matrix Spike (L012172-MS4)	**Source: 1012097-02**		Prepared: 12/13/2010 Analyzed: 01/07/2011						
Diesel Range Organics	56600	3430	ug/kg dry	68580	3430 U	83	42-133		
Surrogate: p-Terphenyl	*6520*		*ug/kg dry*	*6858.0*		*95*	*39-129*		
Matrix Spike (L012172-MS5)	**Source: 1012097-02**		Prepared: 12/13/2010 Analyzed: 01/07/2011						
Kerosene	55300	9890	ug/kg dry	65910	10300 U	84	0-200		
Matrix Spike Dup (L012172-MSD4)	**Source: 1012097-02**		Prepared: 12/13/2010 Analyzed: 01/07/2011						
Diesel Range Organics	58100	3490	ug/kg dry	69788	3430 U	83	42-133	0.8	40
Surrogate: p-Terphenyl	*6280*		*ug/kg dry*	*6978.8*		*90*	*39-129*		
Matrix Spike Dup (L012172-MSD5)	**Source: 1012097-02**		Prepared: 12/13/2010 Analyzed: 01/07/2011						
Kerosene	52300	9890	ug/kg dry	65951	10300 U	79	0-200	6	200

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	01/20/2011 20:35

Extractable Petroleum Hydrocarbons by SW846 8015 - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L101154 - SW 3540C									
Blank (L101154-BLK1)			Prepared: 01/17/2011 Analyzed: 01/19/2011						
Diesel Range Organics	3330 U	3330	ug/kg wet						
Motor Oil	10000 U	10000	ug/kg wet						
Kerosene	10000 U	10000	ug/kg wet						
Surrogate: p-Terphenyl	*4990*		*ug/kg wet*	*6666.7*		*75*	*39-129*		
LCS (L101154-BS1)			Prepared: 01/17/2011 Analyzed: 01/19/2011						
Diesel Range Organics	56700	3330	ug/kg wet	66667		85	42-133		
Surrogate: p-Terphenyl	*6380*		*ug/kg wet*	*6666.7*		*96*	*39-129*		

PREPARATION BENCH SHEET

REVISION

L101154

Lionville Laboratory

Printed: 1/20/2011 9:01:05PM

Matrix: Solid **Prepared using: GC - SW 3540C** **Surrogate used: 1002047**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1012097-02RE1	8015M DRO	01/17/2011 13:00	30.23	1				1000	WC-Hanford, Inc.	From L012172 by SA on 01/17/2011
1101119-01	8015M DRO	01/17/2011 13:00	15.54	1				1000	WC-Hanford, Inc.	
1101119-02	8015M DRO	01/17/2011 13:00	15.47	1				1000	WC-Hanford, Inc.	
1101119-03	8015M DRO	01/17/2011 13:00	15.11	1				1000	WC-Hanford, Inc.	
1101119-04	8015M DRO	01/17/2011 13:00	15.98	1				1000	WC-Hanford, Inc.	
1101119-05	8015M DRO	01/17/2011 13:00	15.41	1				1000	WC-Hanford, Inc.	
1101119-06	8015M DRO	01/17/2011 13:00	15.08	1				1000	WC-Hanford, Inc.	
L101154-BLK1	QC	01/17/2011 13:00	30	1				1000		
L101154-BS1	QC	01/17/2011 13:00	30	1	1001180		1000	1000		
L101154-MS1	QC	01/17/2011 13:00	15.51	1	1001180	1101119-05	1000	1000		
L101154-MSD1	QC	01/17/2011 13:00	16.01	1	1001180	1101119-05	1000	1000		

Revision for Prep date — CAO 01/20/11

Extracts Relinquished By — Date — Extracts Received By — Date

PREPARATION BENCH SHEET

L101154

Lionville Laboratory

Printed: 1/18/2011 2:40:16PM

Matrix: Solid **Prepared using: GC - SW 3540C** **Surrogate used: 1001998**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1012097-02RE1	8015M DRO	12/13/2010 15:51	30.23	1				1000	WC-Hanford, Inc.	From L012172 by SA on 01/17/2011
1101119-01	8015M DRO	01/17/2011 13:00	15.54	1				1000	WC-Hanford, Inc.	
1101119-02	8015M DRO	01/17/2011 13:00	15.47	1				1000	WC-Hanford, Inc.	
1101119-03	8015M DRO	01/17/2011 13:00	15.11	1				1000	WC-Hanford, Inc.	
1101119-04	8015M DRO	01/17/2011 13:00	15.98	1				1000	WC-Hanford, Inc.	
1101119-05	8015M DRO	01/17/2011 13:00	15.41	1				1000	WC-Hanford, Inc.	
1101119-06	8015M DRO	01/17/2011 13:00	15.08	1				1000	WC-Hanford, Inc.	
L101154-BLK1	QC	01/17/2011 13:00	30	1				1000		
L101154-BS1	QC	01/17/2011 13:00	30	1	1001180		1000	1000		
L101154-MS1	QC	01/17/2011 13:00	15.51	1	1001180	1101119-05	1000	1000		
L101154-MSD1	QC	01/17/2011 13:00	16.01	1	1001180	1101119-05	1000	1000		

S. Ali 1/18/11 14:40
Extracts Relinquished By Date

S Zak 01/18/11 14:40
Extracts Received By Date

REVISION

PREPARATION BENCH SHEET

L012172

Lionville Laboratory

Printed: 1/13/2011 9:02:28PM

Matrix: Solid **Prepared using: GC - SW 3540C** **Surrogate used: 1002047**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1012081-01	8015M DRO	12/13/2010 15:51	30.2	1				1000	WC-Hanford, Inc.	
1012081-01	8015M KRO	12/13/2010 15:51	30.2	1				1000	WC-Hanford, Inc.	Added for BatchQC in: L012172
1012084-01	8015M DRO	12/13/2010 15:51	30.54	1				1000	WC-Hanford, Inc.	
1012084-01	8015M KRO	12/13/2010 15:51	30.54	1				1000	WC-Hanford, Inc.	
1012084-02	8015M DRO	12/13/2010 15:51	31.92	1				1000	WC-Hanford, Inc.	
1012084-02	8015M KRO	12/13/2010 15:51	31.92	1				1000	WC-Hanford, Inc.	
1012097-01	8015M DRO	12/13/2010 15:51	31.61	1				1000	WC-Hanford, Inc.	
1012097-01	8015M KRO	12/13/2010 15:51	31.61	1				1000	WC-Hanford, Inc.	
1012097-02	8015M DRO	12/13/2010 15:51	30.62	1				1000	WC-Hanford, Inc.	
1012097-02	8015M KRO	12/13/2010 15:51	30.62	1				1000	WC-Hanford, Inc.	
1012097-03	8015M DRO	12/13/2010 15:51	30.32	1				1000	WC-Hanford, Inc.	
1012097-03	8015M KRO	12/13/2010 15:51	30.32	1				1000	WC-Hanford, Inc.	
1012097-04	8015M DRO	12/13/2010 15:51	31.21	1				1000	WC-Hanford, Inc.	
1012097-04	8015M KRO	12/13/2010 15:51	31.21	1				1000	WC-Hanford, Inc.	
L012172-BLK1	QC	12/13/2010 15:51	30	1				1000		ODRO
L012172-BLK2	QC	12/13/2010 15:51	30	1				1000		KDRO
L012172-BS1	QC	12/13/2010 15:51	30	1	1002032		1000	1000		ODRO
L012172-BS2	QC	12/13/2010 15:51	30	1	1002036		500	1000		KDRO
L012172-MS1	QC	12/13/2010 15:51	30.87	1	1002032	1012081-01	1000	1000		ODRO
L012172-MS2	QC	12/13/2010 15:51	30.84	1	1002032	1012084-01	1000	1000		ODRO

Extracts Relinquished By Date

Extracts Received By Date

PREPARATION BENCH SHEET

L012172

Lionville Laboratory

Printed: 1/13/2011 9:02:28PM

Matrix: Solid **Prepared using: GC - SW 3540C** **Surrogate used: 1002047**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
L012172-MS3	QC	12/13/2010 15:51	31.31	1	1002036	1012084-02	500	1000		KDRO
L012172-MS4	QC	12/13/2010 15:51	30.61	1	1002032	1012097-02	1000	1000		ODRO
L012172-MS5	QC	12/13/2010 15:51	31.85	1	1002036	1012097-02	500	1000		KDRO
L012172-MSD1	QC	12/13/2010 15:51	30.17	1	1002032	1012081-01	1000	1000		ODRO
L012172-MSD2	QC	12/13/2010 15:51	30.52	1	1002032	1012084-01	1000	1000		ODRO
L012172-MSD3	QC	12/13/2010 15:51	30.67	1	1002036	1012084-02	500	1000		KDRO
L012172-MSD4	QC	12/13/2010 15:51	30.08	1	1002032	1012097-02	1000	1000		ODRO
L012172-MSD5	QC	12/13/2010 15:51	31.83	1	1002036	1012097-02	500	1000		KDRO

Extracts Relinquished By Date

Extracts Received By Date

PREPARATION BENCH SHEET

L012172

Lionville Laboratory

Printed: 12/14/2010 3:12:16PM

Matrix: Solid **Prepared using: GC - SW 3540C** **Surrogate used: 1002047**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1012081-01	8015M DRO	12/13/2010 15:51	30.2	1				1000	WC-Hanford, Inc.	
1012081-01	8015M KRO	12/13/2010 15:51	30.2	1				1000	WC-Hanford, Inc.	Added for BatchQC in: L012172
1012084-01	8015M DRO	12/13/2010 15:51	30.54	1				1000	WC-Hanford, Inc.	
1012084-01	8015M KRO	12/13/2010 15:51	30.54	1				1000	WC-Hanford, Inc.	
1012084-02	8015M DRO	12/13/2010 15:51	31.92	1				1000	WC-Hanford, Inc.	
1012084-02	8015M KRO	12/13/2010 15:51	31.92	1				1000	WC-Hanford, Inc.	
1012097-01	8015M DRO	12/13/2010 15:51	31.61	1				1000	WC-Hanford, Inc.	
1012097-01	8015M KRO	12/13/2010 15:51	31.61	1				1000	WC-Hanford, Inc.	
1012097-02	8015M DRO	12/13/2010 15:51	30.62	1				1000	WC-Hanford, Inc.	
1012097-02	8015M KRO	12/13/2010 15:51	30.62	1				1000	WC-Hanford, Inc.	
1012097-03	8015M DRO	12/13/2010 15:51	30.32	1				1000	WC-Hanford, Inc.	
1012097-03	8015M KRO	12/13/2010 15:51	30.32	1				1000	WC-Hanford, Inc.	
1012097-04	8015M DRO	12/13/2010 15:51	31.21	1				1000	WC-Hanford, Inc.	
1012097-04	8015M KRO	12/13/2010 15:51	31.21	1				1000	WC-Hanford, Inc.	
L012172-BLK1	QC	12/13/2010 15:51	30	1				1000		ODRO
L012172-BLK2	QC	12/13/2010 15:51	30	1				1000		KDRO
L012172-BS1	QC	12/13/2010 15:51	30	1	1002032		1000	1000		ODRO
L012172-BS2	QC	12/13/2010 15:51	30	1	1002036		1000	1000		KDRO
L012172-MS1	QC	12/13/2010 15:51	30.87	1	1002032	1012081-01	1000	1000		ODRO
L012172-MS2	QC	12/13/2010 15:51	30.84	1	1002032	1012084-01	1000	1000		ODRO

S Ann 12/14/10 15:30 — Extracts Relinquished By — Date

S Zook 12/14/10 15:35 — Extracts Received By — Date

PREPARATION BENCH SHEET

L012172

Lionville Laboratory

Printed: 12/14/2010 3:12:16PM

Matrix: Solid **Prepared using: GC - SW 3540C** **Surrogate used: 1002047**

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
L012172-MS3	QC	12/13/2010 15:51	31.31	1	1002036	1012084-02	1000	1000		KDRO
L012172-MS4	QC	12/13/2010 15:51	30.61	1	1002032	1012097-02	1000	1000		ODRO
L012172-MS5	QC	12/13/2010 15:51	31.85	1	1002036	1012097-02	1000	1000		KDRO
L012172-MSD1	QC	12/13/2010 15:51	30.17	1	1002032	1012081-01	1000	1000		ODRO
L012172-MSD2	QC	12/13/2010 15:51	30.52	1	1002032	1012084-01	1000	1000		ODRO
L012172-MSD3	QC	12/13/2010 15:51	30.67	1	1002036	1012084-02	1000	1000		KDRO
L012172-MSD4	QC	12/13/2010 15:51	30.08	1	1002032	1012097-02	1000	1000		ODRO
L012172-MSD5	QC	12/13/2010 15:51	31.83	1	1002036	1012097-02	1000	1000		KDRO

S. Ami 12/14/10 15:30
Extracts Relinquished By Date

S. Zook 12/14/10 15:35
Extracts Received By Date

Lionville Laboratory Use Only: 1012097

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: WC Hanford SAT# RC.195

Est. Final Proj. Sampling Date:

Project#:

Project Contact/Phone#:

Lionville Laboratory Project Manager: Arlitta Johnson

QC: SW Del: STD TAT: 30 days

Date Rec'd: 12.10.10 Date Due: 1-9-11

	A	B	C	D	E	F	G
Refrigerator #	1	1	1	1	1	1	1
#/Type Container (Liquid / Solid)	1 qal	1 qal	1 qal	1 qal	1 qal	1 qal	1 qal
Volume (Solid)	250	250	120	250	120	250	120
Preservatives	—	—	—	—		—	—
ANALYSES REQUESTED	ORGANIC: VOA, BNA, ~~Pest~~ PCB, Herb	8310 PAHs	8310 PAHs	INORG: (2) Metal + Hg, CN	Cr+6	F-	Anions 300.0

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	8082	8310 PAH	KRO-DRO	Met	CrVI	Ortho Phosphate	Anions	N3N2
01	B28NB0			S	12-7-10	1435	X	X	X	X	X	X	X	X
02	B28NC5				12-8-10	1440	X	X	X	X	X	X	X	X
03	B29K64				12-7-10	0950	X	X	X	X	X	X	X	X
04	B29K67					1040	X	X	X	X	X	X	X	X

Special Instructions: Run Matrix QC

Special Instructions:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Fedex	[illegible]	12.10.10	10:0

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-534	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-005	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-115	HNF-N-585-15 PG 20	17.4- 19.9 Ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR	79653516746 3	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B28N47

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None	None	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP	None	None
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P	Split Spoon Liner	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL	1000g	200g
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B28NB0	SOIL	12-7-10	1435	X	X	X	X	X	X	X	*NC	*NC

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner AT	12-7-10 1530	SSU-R1	12-7-10 1530
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R1	12-9-10 0930	CM Aguilar CM Aguilar	12-9-10 0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CM Aguilar CM Aguilar	12-9-10 1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FedEx	12-10-10 10:10	[illegible]	12-10-10 10:10
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
*NC - Low yield NOT collected

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-195-534	PAGE 2 OF 2
COLLECTOR Turner, Crow	COMPANY CONTACT RADLOFF, ANNA	TELEPHONE NO. (509) 376-4554	PROJECT COORDINATOR KESSNER, JH	PRICE CODE 8N AIR QUALITY ☐	DATA TURNAROUND 45 Days / 45 Days
SAMPLING LOCATION C8239 (118-B-8); I-005	PROJECT DESIGNATION Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		SAF NO. RC-195		
ICE CHEST NO. GWS-115	FIELD LOGBOOK NO. HNF-N-585-15 pg 20	ACTUAL SAMPLE DEPTH 17.4-19.9 ft	COA 302512ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Lionville Laboratory Incorporated	OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. SEE PTR	7965351 67463	

SPECIAL INSTRUCTIONS

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);
(4) Bulk Density - D2937 (100 Area RIFS); Particle Size (Dry Sieve) - D422 (100 Area RIFS); Saturated Hydraulic Conductivity - D2434 (100 Area RIFS) {Hydraulic Conductivity}; Saturated Hydraulic Conductivity - D5084 (100 Area RIFS) {Hydraulic Conductivity};

ORIGINAL

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-555	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-008	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-115	HNF-N-585-15 p622	32.3 - 34.8 Ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR 79653516746 3		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: ~~B28N65~~ MVM 11/29/10
B29R47

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B28NC5	SOIL	12-8-10	1440	X	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner AT	12-8-10 1550	M0413 SSU R2	12-8-10 1550
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R2	12-9-10 0930	CM Aguilar CM Aguilar	12-9-10 0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CM Aguilar CM Aguilar	12-9-10 1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FedEx	12-10-10 10:10	[illegible]	12-10-10 10:[illegible]
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-656	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-003	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-117	ANF-N-585-15 PG 20	10-12.5 Ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR	79653516746 3	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B29K53

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B29K64	SOIL	12-7-10	0950	X	X	X	X	X	X	X

1012097

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner 12-7-10	1145	MO 413 SSU R2 RI 12-7-10	1145
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R1 12-9-10	0930	CM Aguilar 12-9-10	0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CM Aguilar 12-9-10	1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FedEx 12-10-10	10:10	12-10-10	10
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-660	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-004	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-117	HNF-N-585-15 pg 20	12.4-14.9 ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR	7965351 67463	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B29K54

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B29K67	SOIL	12-7-10	1040	X	X	X	X	X	X	X

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner AT 12-7-10	1145	M0413 SSH R1 AT 12-7 R2 12-7-10	1145
SSH-R1 12-9-10	0930	CMAguilar CMAg 12-9-10	0930
CMAguilar CMAg 12-9-10	1400	FEDEX	
FEDEX 12-10-10	10:10	DSmith 12-10-10/10:10	

SPECIAL INSTRUCTIONS

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC HanfordRC.195 Date: 12-10-10

Project/SAF/SOW/Release #:

LvL Batch #: 1012097 Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7965 3516 7463
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 3.3 °C		Cooler # GWS.117
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? 12-10-10	☑ 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

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

RECEIVED
MAR 2011

WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	02/24/2011 16:23

Analytical Report for Wet Chemistry

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B28NB0	1012097-01	Soil	12/07/2010 14:35	12/10/2010 10:10
B28NC5	1012097-02	Soil	12/08/2010 14:40	12/10/2010 10:10
B29K64	1012097-03	Soil	12/07/2010 09:50	12/10/2010 10:10
B29K67	1012097-04	Soil	12/07/2010 10:40	12/10/2010 10:10

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-195 K2755
LVL#: 1012097 **Date Received:** 12-10-10

INORGANIC NARRATIVE

1. This narrative covers the analyses of 4 soil samples. Analyses were not performed for Anions by Ion Chromatography as twice the contractual holding times were exceeded.

2. The samples were prepared and analyzed in accordance with the methods indicated on the data summary report. Results for soil or solid pH are measured in water at 25°C unless otherwise specified.

   Lionville Lab (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list 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.

3. Sample holding times as required by the method and/or contract were met with the exception of Nitrate Nitrite and Hexavalent Chromium.

4. The results presented in this report are derived from samples that met LvL's sample acceptance policy with the exceptions noted on the Sample Receipt Checklist.

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits and method criteria.

7 The matrix spike recoveries were within the 75-125% control limits.

8. The replicate analyses were within the 20% Relative Percent Difference (RPD) control limit.

9. Results for soil samples are reported on a dry weight basis.

10. 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 package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

3/1/11
Date

njp\i12-097

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13 pages.

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Fax: 610-280-3041

WC-Hanford, Inc.	Project: RC-I95	
2620 Fermi Avenue	Project Number: K2755	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	02/24/2011 16:23

Notes and Definitions

U	Analyte included in the analysis, but not detected
D	Results reported from a dilution; related reporting limits are elevated due to the presence of an interference or a high target value.
*	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
LOD	Limit of Detection (LOD): the minimum estimated concentration of a target analyte that can be detected reliably. Concentrations at the LOD or between the LOD and LOQ are flagged estimated with either a 'J' qualifier or client-specific qualifier.
LOQ	Limit of Quantitation (LOQ): the minimum concentration of a target analyte that can be quantified reliably

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	Reported:
Richland WA, 99354	Project Manager: Joan Kessner	02/24/2011 16:23

Wet Chemistry
Lionville Laboratory

Analyte	Result and Qualifier	LOD	LOQ	Units	Dilution	Batch	Prepared	Analyzed	Method
B28NB0 (1012097-01) Soil									
%Solids	**92.1**	0.1	0.1	% by Weight	1	L012276	12/20/2010	12/20/2010	SM2540G
Nitrate/Nitrite as N	**3.14**	0.11	0.53	mg/kg dry	1	L102007	01/25/2011	01/25/2011	EPA 353.2
Hexavalent Chromium	0.22 U	0.22	0.54	mg/kg dry	1	L101263	01/26/2011	01/25/201	SW846 7196A
pH	**8.72**		0.10	pH Units	1	L101038	01/06/2011	01/06/201	SW846 9045D
%Moisture	**7.86**		0.01	% by Weight	1	L012279	12/20/2010	12/20/2010	D2216
B28NC5 (1012097-02) Soil									
%Solids	**95.3**	0.1	0.1	% by Weight	1	L012276	12/20/2010	12/20/2010	SM2540G
Nitrate/Nitrite as N	**1.62**	0.11	0.53	mg/kg dry	1	L102007	01/25/2011	01/25/2011	EPA 353.2
Hexavalent Chromium	0.21 U	0.21	0.52	mg/kg dry	1	L101263	01/26/2011	01/25/201	SW846 7196A
pH	**8.38**		0.10	pH Units	1	L101038	01/06/2011	01/06/201	SW846 9045D
%Moisture	**4.73**		0.01	% by Weight	1	L012279	12/20/2010	12/20/2010	D2216
B29K64 (1012097-03) Soil									
%Solids	**92.1**	0.1	0.1	% by Weight	1	L012276	12/20/2010	12/20/2010	SM2540G
Nitrate/Nitrite as N	**3.90**	0.10	0.49	mg/kg dry	1	L102007	01/25/2011	01/25/2011	EPA 353.2
Hexavalent Chromium	0.22 U	0.22	0.54	mg/kg dry	1	L101263	01/26/2011	01/25/201	SW846 7196A
pH	**8.69**		0.10	pH Units	1	L101038	01/06/2011	01/06/201	SW846 9045D
%Moisture	**7.88**		0.01	% by Weight	1	L012279	12/20/2010	12/20/2010	D2216
B29K67 (1012097-04) Soil									
%Solids	**92.0**	0.1	0.1	% by Weight	1	L012276	12/20/2010	12/20/2010	SM2540G
Nitrate/Nitrite as N	**2.37**	0.10	0.49	mg/kg dry	1	L102007	01/25/2011	01/25/2011	EPA 353.2
Hexavalent Chromium	0.22 U	0.22	0.54	mg/kg dry	1	L101263	01/26/2011	01/25/201	SW846 7196A
pH	**8.45**		0.10	pH Units	1	L101038	01/06/2011	01/06/201	SW846 9045D
%Moisture	**8.01**		0.01	% by Weight	1	L012279	12/20/2010	12/20/2010	D2216

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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	02/24/2011 16:23

Wet Chemistry - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L012276 - NO PREP										
Duplicate (L012276-DUP1)	**Source: 1012097-02**			Prepared & Analyzed: 12/20/2010						
%Solids	94.8	0.1	0.1	% by Weight		95.3			0.6	20
Batch L012279 - NO PREP										
Duplicate (L012279-DUP2)	**Source: 1012097-02**			Prepared & Analyzed: 12/20/2010						
%Moisture	5.25		0.01	% by Weight		4.73			10.5	20
Batch L101038 - Default Prep GenChem										
Duplicate (L101038-DUP4)	**Source: 1012097-01**			Prepared & Analyzed: 01/06/2011						
pH	8.81		0.10	pH Units		8.72			1.03	20
Reference (L101038-SRM1)				Prepared & Analyzed: 01/06/2011						
pH	10.02		0.10	pH Units	10.000		100	99-101		
Batch L101263 - SW 3060A										
Blank (L101263-BLK1)				Prepared & Analyzed: 01/25/2011						
Hexavalent Chromium	0.20 U	0.20	0.50	mg/kg wet						
LCS (L101263-BS1)				Prepared & Analyzed: 01/25/2011						
Hexavalent Chromium	4.03	0.20	0.50	mg/kg wet	4.0000		101	80-120		
LCS (L101263-BS2)				Prepared & Analyzed: 01/25/2011						
Hexavalent Chromium	1030 D	20.0	50.0	mg/kg wet	1024.0		101	80-120		

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Exton, PA 19341
Phone: 610-280-3000
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WC-Hanford, Inc.	Project: RC-195	
2620 Fermi Avenue	Project Number: K2755	**Reported:**
Richland WA, 99354	Project Manager: Joan Kessner	02/24/2011 16:23

Wet Chemistry - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L101263 - SW 3060A										
Duplicate (L101263-DUP4)	**Source: 1012097-01**			Prepared & Analyzed: 01/25/2011						
Hexavalent Chromium	0.22 U	0.22	0.54	mg/kg dry		0.22 U				20
Matrix Spike (L101263-MS7)	**Source: 1012097-01**			Prepared & Analyzed: 01/25/2011						
Hexavalent Chromium	4.40	0.22	0.54	mg/kg dry	4.3413	0.22 U	101	75-125		
Matrix Spike (L101263-MS8)	**Source: 1012097-01**			Prepared & Analyzed: 01/25/2011						
Hexavalent Chromium	1210 D	21.7	54.3	mg/kg dry	1209.2	0.22 U	100	75-125		
Batch L102007 - Default Prep GenChem										
Blank (L102007-BLK1)				Prepared & Analyzed: 01/25/2011						
Nitrate/Nitrite as N	0.09 U	0.09	0.47	mg/kg wet						
LCS (L102007-BS1)				Prepared & Analyzed: 01/25/2011						
Nitrate/Nitrite as N	4.20	0.09	0.44	mg/kg wet	4.3937		95.6	90-110		20
Duplicate (L102007-DUP2)	**Source: 1012097-01**			Prepared & Analyzed: 01/25/2011						
Nitrate/Nitrite as N	2.71	0.10	0.51	mg/kg dry		3.14			14.6	20
Matrix Spike (L102007-MS2)	**Source: 1012097-01**			Prepared & Analyzed: 01/25/2011						
Nitrate/Nitrite as N	8.23	0.10	0.52	mg/kg dry	5.2230	3.14	97.6	75-125		

Lionville Laboratory Use Only

1012097

Custody Transfer Record/Lab Work Request

Page 1 of 1

SRC

SEE

LVLI LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client WC Hanford SAF# RC.195

Est. Final Proj. Sampling Date

Project#

Project Contact/Phone#

Lionville Laboratory Project Manager Arlette Johnson

QC SW Del STD TAT 30days

Date Rec'd 12.10.10 Date Due 1-9-11

		A		B	C		D		E	F	G			
Refrigerator #		1		1	1		1		1	1	1			
#/Type Container	Liquid	1aq		1aq	1aq		1aq		1aq	1aq	1aq			
	Solid													
Volume	Solid	250		250	120		250		120	250	120			
Preservatives		—		—	—		—			—	—			
ANALYSES REQUESTED		ORGANIC: VOA	BNA	~~Pest~~ PCB	Herb	PAHs 8310	TPH-D (C)		INORG: (2) Metal + Hg	CN	Cr+6	Fe	(3) Hardness	2823

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	8082	8310 PAH	KRO-DRO	Met	CrVI	Fe Mn pH	Anions	N3N2
01	B28NB0			S	12-7-10	1435	X	X	X	X	X	X	X	X
02	B28NC5				12-8-10	1440	X	X	X	X	X	X	X	X
03	B29K64				12-7-10	0950	X	X	X	X	X	X	X	X
04	B29K67					1040	X	X	X	X	X	X	X	X

Special Instructions: Run Matrix QC

Special Instructions:

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

Relinquished by	Received by	Date	Time
[signature]	[signature]	12.10.10	10:0

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

Columbia Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-534	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-005	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-115	HNF-N-585-15 PG 20	17.4- 19.9 Ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR	79653516746 3	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B28N47

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None	None	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP	None	None
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P	Split Spoon Liner	Moisture Resistant Cont.
NO. OF CONTAINER(S)	1	1	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL	1000g	200g
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B28NB0	SOIL	12-7-10	1435	X	X	X	X	X	X	X	*NC	*NC	

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner AT	12-7-10 1530	SSU-R1	12-7-10 1530
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R1	12-9-10 0930	CM Aguilar CM Aguilar	12-9-10 0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CM Aguilar CM Aguilar	12-9-10 1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FEDEX	12-10-10 10:10	DSU-187	12-10-10 10:10
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
*NC - Low yield NOT collected

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-195-534	PAGE 2 OF 2
COLLECTOR Turner, Crow	COMPANY CONTACT RADLOFF, ANNA	TELEPHONE NO. (509) 376-4554	PROJECT COORDINATOR KESSNER, JH	PRICE CODE 8N AIR QUALITY ☐	DATA TURNAROUND 45 Days / 45 Days
SAMPLING LOCATION C8239 (118-B-8); I-005	PROJECT DESIGNATION Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		SAF NO. RC-195		
ICE CHEST NO. GWS-115	FIELD LOGBOOK NO. HNF-N-~~585~~-15 pg 20	ACTUAL SAMPLE DEPTH 17.4-19.9 ft	COA 302512ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO Lionville Laboratory Incorporated	OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. SEE PTR	7965351 67463	

SPECIAL INSTRUCTIONS

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);
(4) Bulk Density - D2937 (100 Area RIFS); Particle Size (Dry Sieve) - D422 (100 Area RIFS); Saturated Hydraulic Conductivity - D2434 (100 Area RIFS) {Hydraulic Conductivity}; Saturated Hydraulic Conductivity - D5084 (100 Area RIFS) {Hydraulic Conductivity};

ORIGINAL

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-195-555

COLLECTOR: Turner, Crow	COMPANY CONTACT: RADLOFF, ANNA	TELEPHONE NO.: (509) 376-4554	PROJECT COORDINATOR: KESSNER, JH
SAMPLING LOCATION: C8239 (118-B-8); I-008	PROJECT DESIGNATION: Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		SAF NO.: RC-195
ICE CHEST NO.: GW5-115	FIELD LOGBOOK NO.: HNF-N-585-15 p622	ACTUAL SAMPLE DEPTH: 32.3 - 34.8 Ft	COA: 302512ES10
SHIPPED TO: Lionville Laboratory Incorporated	OFFSITE PROPERTY NO.: SEE PTR		BILL OF LADING/AIR BILL NO.: SEE PTR 7965351 67463

PRICE CODE: 8N
AIR QUALITY: ☐
DATA TURNAROUND: 45 Days / 45 Days
METHOD OF SHIPMENT: FEDERAL EXPRESS

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: ~~B28NC5~~ MVM 11/29/10
B29K47

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B28NC5	SOIL	12-8-10	1440	X	X	X	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner	12-8-10 1550	M0413 SSU R2	12-8-10 1550
SSU-R2	12-9-10 0930	CM Aguilar	12-9-10 0930
CM Aguilar	12-9-10 1400	FEDEX	
FedEx	12-10-10 10:10	[illegible]	12-10-10 10:10

SPECIAL INSTRUCTIONS

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐
(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

Columbia Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-656	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-003	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-117	ANF-N-585-15 PG 20	10-12.5 FT	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR 79653516746 3		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B29K53

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

1012097

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B29K64	SOIL	12-7-10	0950	X	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner AT 12-7-10	1145	MO 413 SSU R1 AT 12-7 12-7-10	1145
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-R1 12-9-10	0930	CmAguilar CmAguilar 12-9-10	0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CmAguilar CmAguilar 12-9-10	1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FEDEX 12-10-10	10:10	[illegible] 12-10-10	10:10
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐

(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-195-660	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Turner, Crow	RADLOFF, ANNA	(509) 376-4554	KESSNER, JH	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8239 (118-B-8); I-004	Soil/Sediment Sampling - Integrated Remedial Investigation/Feasibility Stud		RC-195		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-117	HNF-N-585-15 PG 20	12.4-14.9 ft	302512ES10	FEDERAL EXPRESS	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Lionville Laboratory Incorporated	SEE PTR		SEE PTR	79653516746 3	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B29K54

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	28 Days/48 Hours	ASAP
TYPE OF CONTAINER	aG	G	aG	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1	1
VOLUME	250mL	120mL	250mL	250mL	120mL	120mL	250mL
SAMPLE ANALYSIS	PAHs - 8310 (100 Area RI/FS);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082 (100 Area RI/FS);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196 (100 Area RIFS);	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	pH (Soil) - 9045 (100 Area RIFS);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME							
B29K67	SOIL	12-7-10	1040	X	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
A. Turner AT 12-7-10	1145	M0413 SSH R1 AT 12-7 12-7-10	1145
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSH-R1 12-9-10	0930	CmAguilar CmAg 12-9-10	0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CmAguilar CmAg 12-9-10	1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FEDEX 12-10-10	10:10	[illegible] 12-10-10	10:10
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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

** The laboratory is to analyze pH within 24 hours of receipt.☐☐** The RCCC acknowledges that the analytical holding time for Nitrate, Nitrite, and Phosphate by EPA methods 300.0 or 9056 will not be met.☐☐** Physical Properties laboratory: Conduct the hydraulic conductivity test (ASTM 5084 or 2434) as appropriate to the sample matrix.☐☐

(1) TPH-DieselKerosene Range - WTPH-D (100 Area RIFS);
(2) ICP Metals - 6010TR (100 Area RIFS Client List); Mercury - 7471 - (CV) (100 Area RIFS);
(3) IC Anions - 300.0 (100 Area RI/FS); NO2/NO3 - 353.2 (100 Area RI/FS);

ORIGINAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618 (REV 2)

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC HanfordRC.195 Date: 12-10-10

Project/SAF/SOW/Release #:

LvL Batch #: 1012097 Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7965 3516 7463
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 3.3 °C		Cooler # GWS.117
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	NO_2 NO_3 PO_4
Short holds taken to wet lab? 12-10-10	☑ 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 * 12-25-11	☑ No	see #12
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____