0078882

SAF-RC-029
Remaining Sites Confirmation Sampling - Soil
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 9/24/08
INITIAL/DATE

COMMENTS:

SDG K1309 SAF RC-029

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: 128-H-2

RECEIVED
OCT 0 8 2008
EDMC

LIONVILLE LABORATORY INC.

23 September 2008

RECEIVED SEP 2008

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 #	0808L138
SDG #	K1309
SAF #	RC-029
Date Received	8/29/08
# Samples	7
Matrix	SOIL
Volatiles	X
Semivolatiles	X
Pest/PCB	X
Glycols	
DRO/KRO/GRO	X
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory

Orlette S. Johnson
Project Manager
r:\group\pm\orlette\hanford\data\b_ltrs.doc

208 Welsh Pool Road • Exton, PA 19341- 1313 • (610) 280-3000 • Fax (610) 280-3041

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

RECEIVED
SEP 2008

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FT5	001	S	08LVK163	08/27/08	N/A	09/08/08
J17FT5	001 MS	S	08LVK163	08/27/08	N/A	09/08/08
J17FT5	001 MSD	S	08LVK163	08/27/08	N/A	09/08/08
J17FT6	002	S	08LVK163	08/27/08	N/A	09/08/08
J17FT7	003	S	08LVK163	08/27/08	N/A	09/08/08
J17FT8	004	S	08LVK163	08/27/08	N/A	09/08/08
J17FT9	005	S	08LVK163	08/27/08	N/A	09/08/08
J17FV0	006	S	08LVK163	08/27/08	N/A	09/08/08
J17FV1	007	S	08LVK163	08/27/08	N/A	09/08/08

LAB QC:

VBLKFS	MB1	S	08LVK163	N/A	N/A	09/08/08
VBLKFS	MB1 BS	S	08LVK163	N/A	N/A	09/08/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-026
LVL #: 0808L138
SDG/SAF # K1309/RC-026

W.O. #: 60049-001-001-0001-00
Date Received: 08-29-2008

GC/MS VOLATILE

Seven (7) soil samples were collected on 08-27-2008.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for TCL Volatile target compounds on 09-08-2008.

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

1. Samples were analyzed within required holding time.
2. Non-target compounds were detected in these samples.
3. All surrogate recoveries were within acceptance criteria.
4. Six (6) of seventy (70) matrix spike recoveries were outside acceptance criteria.
5. One (1) of thirty-five (35) blank spike recoveries was outside acceptance criteria.
6. The method blank was below the reporting limit for all target compounds.

r:\group\data\2008\voa\tnu\0808-138cs2.doc

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 23 pages.

LIONVILLE LABORATORY INC.

7. All internal standard area and retention time criteria were met.

8. The CCL analyzed on 09-08-2008 on instrument 5972K did not meet the in-house %D of 40% for the compound Bromoform. There is minimal impact on data as this compound was not detected in the samples. A copy of the Sample Discrepancy Report (SDR# 08VT046) has been included in the package.

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

10. LvLI 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.

11. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this 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 Incorporated

9/10/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08VT046

Initiator: Jack Glacken
Date: 9/9/08
Client: Washington Closure Hanford

Batch: 0809L020, 0808L138
Samples: all
Method: SW846/MCAWW/CLP/

Parameter: 0624H
Matrix: encore soils
Prep Batch: 08LVK163

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)

bromoform was 44% high in the daily continuing calibration check

Bromoform was not detected in these samples. PR 9/9/08

2. Known or Probable Causes(s)

unknown

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)

report + narrate

4. Project Manager Instructions...signature/date: _____

__ 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: 9/10/08 Other Explanation:

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

0808L020 - PR 9/10/08
0808L138 - PR 9/10/08

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

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

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

QA-139-A-0208

GLOSSARY

DATA QUALIFIERS

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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

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

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

CB - **Co-elution/ Background:** Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.

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

Richville Laboratory, Inc.
Volatiles by GC/MS, HSL List
Report Date: 09/10/08 11:09

RFW Batch Number: 0808L138 Client: WC-HANFORD RC-029 K1309 Work Order: 60049001001 Page: 1a

	Cust ID:	J17FT5	J17FT5	J17FT5	J17FT6	J17FT7	J17FT8
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	0.980	0.980	0.862	0.806	1.04	0.980
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Toluene-d8	93 %	95 %	94 %	100 %	97 %	96 %
	Bromofluorobenzene	87 %	87 %	88 %	101 %	92 %	91 %
	1,2-Dichloroethane-d4	127 %	128 %	131 %	134 %	131 %	131 %
		fl	fl	fl	fl	fl	fl
Chloromethane		10 U	52 %	49 * %	8 U	11 U	10 U
Bromomethane		10 U	107 %	104 %	8 U	11 U	10 U
Vinyl Chloride		10 U	70 %	69 %	8 U	11 U	10 U
Chloroethane		10 U	83 %	78 %	8 U	11 U	10 U
Methylene Chloride		3 JB	64 %	65 %	3 JB	3 JB	4 JB
Acetone		10 U	203 %	197 %	8 U	11 U	10 U
Carbon Disulfide		5 U	97 %	97 %	4 U	6 U	5 U
1,1-Dichloroethene		5 U	112 %	113 %	4 U	6 U	5 U
1,1-Dichloroethane		5 U	97 %	96 %	4 U	6 U	5 U
1,2-Dichloroethene (total)		5 U	106 %	109 %	4 U	6 U	5 U
Chloroform		5 U	120 %	121 %	4 U	6 U	5 U
1,2-Dichloroethane		5 U	142 * %	142 * %	4 U	6 U	5 U
2-Butanone		10 U	129 %	126 %	8 U	11 U	10 U
1,1,1-Trichloroethane		5 U	127 %	129 %	4 U	6 U	5 U
Carbon Tetrachloride		5 U	131 %	136 %	4 U	6 U	5 U
Bromodichloromethane		5 U	126 %	130 %	4 U	6 U	5 U
1,2-Dichloropropane		5 U	84 %	86 %	4 U	6 U	5 U
cis-1,3-Dichloropropene		5 U	94 %	95 %	4 U	6 U	5 U
Trichloroethene		5 U	131 %	130 %	4 U	6 U	5 U
Dibromochloromethane		5 U	130 %	133 * %	4 U	6 U	5 U
1,1,2-Trichloroethane		5 U	97 %	99 %	4 U	6 U	5 U
Benzene		5 U	96 %	96 %	4 U	6 U	5 U
Trans-1,3-Dichloropropene		5 U	106 %	108 %	4 U	6 U	5 U
Bromoform		5 U	153 * %	153 * %	4 U	6 U	5 U
4-Methyl-2-pentanone		10 U	70 %	72 %	8 U	11 U	10 U
2-Hexanone		10 U	96 %	95 %	8 U	11 U	10 U
Tetrachloroethene		5 U	122 %	120 %	4 U	6 U	5 U
1,1,2,2-Tetrachloroethane		5 U	82 %	84 %	4 U	6 U	5 U
Toluene		5 U	93 %	91 %	4 U	6 U	5 U

*= Outside of EPA CLP QC limits.

000000008

Cust ID:	J17FT5		J17FT5		J17FT5		J17FT6		J17FT7		J17FT8	
RFW#:	001		001 MS		001 MSD		002		003		004	
Chlorobenzene	5	U	106	%	107	%	4	U	6	U	5	U
Ethylbenzene	5	U	101	%	104	%	4	U	6	U	5	U
Styrene	5	U	104	%	106	%	4	U	6	U	5	U
Xylenes (total)	5	U	102	%	98	%	4	U	6	U	5	U
cis-1,2-dichloroethene	5	U	107	%	111	%	4	U	6	U	5	U
trans-1,2-dichloroethene	5	U	105	%	106	%	4	U	6	U	5	U

*= Outside of EPA CLP QC limits.

Volatiles by GC/MS, HSL List

Report Date: 09/10/08 11:09

RFW Batch Number: 0808L138 Client: WC-HANFORD RC-029 K1309 Work Order: 60049001001 Page: 2a

	Cust ID:	J17FT9	J17FV0	J17FV1	VBLKFS	VBLKFS BS
Sample Information	RFW#:	005	006	007	08LVK163-MB1	08LVK163-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	0.820	0.877	0.962	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Toluene-d8	97 %	93 %	91 %	94 %	95 %
	Bromofluorobenzene	94 %	88 %	86 %	85 %	86 %
	1,2-Dichloroethane-d4	136 %	128 %	124 %	117 %	114 %
Chloromethane		8 U	9 U	10 U	10 U	59 %
Bromomethane		8 U	9 U	10 U	10 U	115 %
Vinyl Chloride		8 U	9 U	10 U	10 U	71 %
Chloroethane		8 U	9 U	10 U	10 U	79 %
Methylene Chloride		3 JB	3 JB	3 JB	3 J	57 %
Acetone		8 U	9 U	10 U	10 U	159 %
Carbon Disulfide		4 U	4 U	5 U	5 U	96 %
1,1-Dichloroethene		4 U	4 U	5 U	5 U	109 %
1,1-Dichloroethane		4 U	4 U	5 U	5 U	91 %
1,2-Dichloroethene (total)		4 U	4 U	5 U	5 U	104 %
Chloroform		4 U	4 U	5 U	5 U	109 %
1,2-Dichloroethane		4 U	4 U	5 U	5 U	118 %
2-Butanone		8 U	9 U	10 U	10 U	119 %
1,1,1-Trichloroethane		4 U	4 U	5 U	5 U	115 %
Carbon Tetrachloride		4 U	4 U	5 U	5 U	121 %
Bromodichloromethane		4 U	4 U	5 U	5 U	113 %
1,2-Dichloropropane		4 U	4 U	5 U	5 U	81 %
cis-1,3-Dichloropropene		4 U	4 U	5 U	5 U	89 %
Trichloroethene		4 U	4 U	5 U	5 U	125 %
Dibromochloromethane		4 U	4 U	5 U	5 U	115 %
1,1,2-Trichloroethane		4 U	4 U	5 U	5 U	89 %
Benzene		4 U	4 U	5 U	5 U	94 %
Trans-1,3-Dichloropropene		4 U	4 U	5 U	5 U	95 %
Bromoform		4 U	4 U	5 U	5 U	131 %
4-Methyl-2-pentanone		8 U	9 U	10 U	10 U	71 %
2-Hexanone		8 U	9 U	10 U	10 U	100 %
Tetrachloroethene		4 U	4 U	5 U	5 U	126 %
1,1,2,2-Tetrachloroethane		4 U	4 U	5 U	5 U	69 * %
Toluene		4 U	4 U	5 U	5 U	93 %

*= Outside of EPA CLP QC limits.

000000010

Cust ID:	J17FT9		J17FV0		J17FV1		VBLKFS		VBLKFS BS	
RFW#:	005		006		007		08LVK163-MB1		08LVK163-MB1	
Chlorobenzene	4	U	4	U	5	U	5	U	102	%
Ethylbenzene	4	U	4	U	5	U	5	U	101	%
Styrene	4	U	4	U	5	U	5	U	103	%
Xylenes (total)	4	U	4	U	5	U	5	U	101	%
cis-1,2-dichloroethene	4	U	4	U	5	U	5	U	104	%
trans-1,2-dichloroethene	4	U	4	U	5	U	5	U	103	%

*= Outside of EPA CLP QC limits.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17FT5

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0808L138-001

Sample wt/vol: 5.10 (g/mL) G Lab File ID: k090812

Level: (low/med) LOW Date Received: 08/29/08

% Moisture: not dec. 0 Date Analyzed: 09/08/08

Column: (pack/cap) CAP Dilution Factor: 0.980

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	16.967	8	JB
2.	UNKNOWN	23.702	5	J

FORM 1 VOA-TIC 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17FT6

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0808L138-002

Sample wt/vol: 6.20 (g/mL) G Lab File ID: k090813

Level: (low/med) LOW Date Received: 08/29/08

% Moisture: not dec. 1 Date Analyzed: 09/08/08

Column: (pack/cap) CAP Dilution Factor: 0.806

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	16.968	8	JB

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17FT7

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0808L138-003

Sample wt/vol: 4.80 (g/mL) G Lab File ID: k090814

Level: (low/med) LOW Date Received: 08/29/08

% Moisture: not dec. 2 Date Analyzed: 09/08/08

Column: (pack/cap) CAP Dilution Factor: 1.04

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	16.955	9	JB

FORM 1 VOA-TIC 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17FT8

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0808L138-004

Sample wt/vol: 5.10 (g/mL) G Lab File ID: k090817

Level: (low/med) LOW Date Received: 08/29/08

% Moisture: not dec. 2 Date Analyzed: 09/08/08

Column: (pack/cap) CAP Dilution Factor: 0.980

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	16.968	8	JB

FORM 1 VOA-TIC 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17FT9

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0808L138-005

Sample wt/vol: 6.10 (g/mL) G Lab File ID: k090818

Level: (low/med) LOW Date Received: 08/29/08

% Moisture: not dec. 1 Date Analyzed: 09/08/08

Column: (pack/cap) CAP Dilution Factor: 0.820

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	16.950	10	JB

FORM 1 VOA-TIC 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17FV0

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0808L138-006

Sample wt/vol: 5.70 (g/mL) G Lab File ID: k090819

Level: (low/med) LOW Date Received: 08/29/08

% Moisture: not dec. 1 Date Analyzed: 09/08/08

Column: (pack/cap) CAP Dilution Factor: 0.877

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	16.951	9	JB

FORM 1 VOA-TIC 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17FV1

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0808L138-007

Sample wt/vol: 5.20 (g/mL) G Lab File ID: k090820

Level: (low/med) LOW Date Received: 08/29/08

% Moisture: not dec. 2 Date Analyzed: 09/08/08

Column: (pack/cap) CAP Dilution Factor: 0.962

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	16.950	7	JB

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKFS

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 08LVK163-MB1

Sample wt/vol: 5.00 (g/mL) G Lab File ID: k090808

Level: (low/med) LOW Date Received: 09/08/08

% Moisture: not dec. 0 Date Analyzed: 09/08/08

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	16.974	10	J

FORM 1 VOA-TIC 1/87 Rev.

onville Laboratory Use Only

08081138

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

ent Washington Closure Hanford SAF# RC-029

t. Final Proj. Sampling Date

oject# ~~05471-1206-0110~~ 60049-001-001-0001 WC 8-29-08

oject Contact/Phone#

onville Laboratory Project Manager O. Johnson

: SW846 Del STD TAT 15 day

te Rec'd 8-29-08 Date Due 9-13-08

		A	B	C	D	E	F
Refrigerator #		6	2	2	2	2	2
#/Type Container	Liquid						
	Solid	1G	1G	1G	1G	1G	1G
Volume		60	250	250	1L/250	100/250	250
Preservatives		—		—	—	—	—
ANALYSES REQUESTED →	ORGANIC	VOA	BNA	Pest/PCB	Herb	INORG Metal	CN	Hg Cr/Pb	TOT TPH

TRIX DES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb	Metal	CN	Hg Cr/Pb	TOT TPH
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish		Lionville Laboratory Use Only						0624H	0625H	0608H GPCB		Met①		TCR6	9-4-08 IPHC ODRO
	001	J17FT5			Soil	8-29-08	1140	X	X			X			
	002	6					1214	X	X	X		X		X	X
	003	7					1235	X	X	X		X		X	X
	004	8					1240	X	X	X		X		X	X
	005	9					1250	X	X	X		X		X	X
	006	10					1300	X	X	X		X		X	X
	007	11					1340	X	X	X					

Special Instructions:

Met ① = HSL + B, Mo, Si
NO ~~Hg~~ WC 8-29-08
TL

Special Instructions:

9-4-08 1. Lab report Diesel and motor Oil, cancel IPHC add ODRO per client

2.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
		8/29/08	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000020

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-029-050 | Page 1 of 2

ector WELCH-KOELLING	Company Contact Matt Perrott	Telephone No. 372-9088	Project Coordinator KESSNER, JH
Price Code 8C	Data Turnaround 15 Days		
iect Designation emaining Sites Confirmation Sampling - Soil	Sampling Location ~~128 H-3~~ BH 8/27/08 128-H-2		SAF No. RC-029
Chest No. ERC-96-069	Field Logbook No. EL-1601-2	COA ~~C128HS1000~~ ~~C100H4A000~~ BH 8/27/08	Method of Shipment FedEx
opped To EBERLINE SERVICES / ~~LIONVILLE~~	Offsite Property No. A080320		Bill of Lading/Air Bill No. SCCOSPC

000000021

SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

Preservation	None	None	D None	E Cool 4C	C Cool 4C	B Cool 4C	A Cool 4C	F Cool 4C		
Type of Container	P	G/P	G/P	G/P	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	1000mL	250mL	250mL	120mL	250mL	250mL	60mL	250mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1		

Sample No.	Matrix *	Sample Date	Sample Time										
7FT5 ✓	SOIL	8/27/08	1140			X			X	X			
7FT6 ✓	SOIL	8/27/08	1214			X	X	X	X	X	X		
7FT7	SOIL	8/27/08	1235			X	X	X	X	X	X		
7FT8	SOIL	8/27/08	1240			X	X	X	X	X	X		
7FT9	SOIL	8/27/08	1250			X	X	X	X	X	X		

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	8/27/08 1352	BHudson BHudson	8/27/08 1352
BHUDSON BHudson	8/27/08 1810	1060 #3C	8/27/08 1810
1060/3C J.E. Bernhard	8-28-08 0900	Fed Ex	
[illegible]	8/29/08 0945	[illegible]	8-29-08 0945

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Gross Alpha & Gross Beta
(2) Americium-241; Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Total Uranium
(3) ICP Metals - 6010TR (Client List {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-029-050 | Page 2 of 2

lector WELCH-KOELLING	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 8C	Data Turnaround: 15 Days		
ject Designation: Remaining Sites Confirmation Sampling - Soil	Sampling Location: ~~128-H-3~~ 128-H-2 C128H21W00		SAF No.: RC-029
Chest No.: ERC-96-069	Field Logbook No.: EL-1601-2 BH 8/27/08	COA ~~C128H310000~~ ~~C100H4A000~~ BH 8/27/08	Method of Shipment: FedEx
nped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A080320		Bill of Lading/Air Bill No.: SEE OSPC

)SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

Preservation	None	None	D None	E Cool 4C	C Cool 4C	B Cool 4C	A Cool 4C	F Cool 4C		
Type of Container	P	G/P	G/P	G/P	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	1000mL	60mL	250mL	120mL	250mL	250mL	60mL	250mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1		

Sample No.	Matrix *	Sample Date	Sample Time										
7FV0 ✓	SOIL	8/27/08	1300			X	X	X	X	X	X		
7FV1 ✓	SOIL	8/27/08	1340			X	X	X	X	X	X		
7FV2	SOIL												
7FV3	SOIL												
7FV4	SOIL												

CHAIN OF POSSESSION	Sign/Print Names	
nquished By/Removed From	Date/Time 8/27/08 1352	Received By/Stored In: BILL HUDSON Bill Hudson	Date/Time 8/27/08 1352
nquished By/Removed From: HUDSON Bhudson	Date/Time 8/27/08 1810	Received By/Stored In: 1060 #3C	Date/Time 8/27/08 1810
nquished By/Removed From: 1060 13C J.E. Bernhard	Date/Time 0900 8-28-08	Received By/Stored In: Fed Ex	Date/Time
nquished By/Removed From: 8/29/08	Date/Time 0945	Received By/Stored In: 8-29-08	Date/Time 0945
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Gross Alpha & Gross Beta
(2) Americium-241; Nickel-63; Isotopic Plutonium (Plutonium-238, Plutonium-239/240); Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Total Uranium
(3) ICP Metals - 6010TR (Client List (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

LABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

:H-EE-011

000000022

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: Washington Closure Hanford Date: 8/29/08

Project/SAF/SOW/Release #: RC-029

LvLI Batch #: 08081138 Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier [illegible]		Airbill # 7785 0271 1126
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.1° 2-3	°C	Cooler # ERC-96069 AFS-04-121
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 & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI 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 _____

LVLI LIONVILLE LABORATORY INC.

SR-002-B.doc

RECEIVED
SEP 2008

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FT5	001	S	08LE0408	08/27/08	09/02/08	09/09/08
J17FT6	002	S	08LE0408	08/27/08	09/02/08	09/09/08
J17FT6	002 MS	S	08LE0408	08/27/08	09/02/08	09/10/08
J17FT6	002 MSD	S	08LE0408	08/27/08	09/02/08	09/10/08
J17FT7	003	S	08LE0408	08/27/08	09/02/08	09/09/08
J17FT8	004	S	08LE0408	08/27/08	09/02/08	09/09/08
J17FT9	005	S	08LE0408	08/27/08	09/02/08	09/09/08
J17FV0	006	S	08LE0408	08/27/08	09/02/08	09/09/08
J17FV1	007	S	08LE0408	08/27/08	09/02/08	09/10/08
LAB QC:						
SBLKXK	MB1	S	08LE0408	N/A	09/02/08	09/09/08
SBLKXK	MB1 BS	S	08LE0408	N/A	09/02/08	09/09/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-029
LVL #: 0808L138
SDG/SAF # K1309 / RC-029

W.O. #: 60049-001-001-0001-00
Date Received: 08-29-2008

SEMIVOLATILE

Seven (7) soil samples were collected on 08-27-2008.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 09-02-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for client specified target compounds on 09-09,10-2008.

All soil samples are reported on a wet weight basis due to matrix (client indicates matrix as other liquid). The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.

2. Samples were extracted and analyzed within holding time.

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

4. Four (4) of sixty-six (66) surrogate recoveries were outside acceptance criteria. However, surrogate recovery acceptance criteria were met for samples J17FT7 and J17FV1 (i.e., no more than one outlier per fraction {acid and base neutral} and no recoveries less than 10%). The surrogate recovery criteria were not met for the following samples: J17FV0 and 08LE0408-MB1. The loss of the surrogate 2,4,6-Tribromophenol in the samples J17FT7, J17FV0, J17FV1, and 08LE0408-MB1 appears to be due to a chemical reaction rather than to a problem with the extraction process. Peaks on the chromatogram indicate this reaction. The conversion compound has been reported as a non-target compound in sample J17FT7 at a retention time of 21.687 minutes, sample J17FV0 at a retention time of 21.678 minutes, sample J17FV1 at a retention time of 21.677 minutes, and sample 08LE0408-MB1 at a retention time of 21.686 minutes. This surrogate loss has been associated with the use of soxhlet extractions. A copy of the Sample Discrepancy Report (SDR# 08MS201) has been enclosed.

r:\group\data\2008\bna\tnu\0808-138cs2.doc

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 pages.

208 Welsh Pool Road • Exton, PA 19341- 1313 • (610) 280-3000 • Fax (610) 280-3041

LIONVILLE LABORATORY INC.

5. Three (3) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS201) has been enclosed.

6. Four (4) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS201) has been enclosed.

7. The method blank contained the common laboratory contaminants Di-n-butylphthalate and Bis (2-Ethlyhexy) phthalate at a level less than the 1x the CRQL.

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.

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

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

12. LvLI 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.

13. 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 Incorporated

9/16/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08MS201

Initiator: Sharm Saylor
Date: 9-12-08
Client: WC Hanford RC09 K1309

Batch: 08FOFL13F
Samples: msd BS
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: SOLID
Prep Batch: ~~08FOFC13F~~ JESS 9-12-08 08FLE04OF

1. Reason for SDR

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

b. General Discrepancy

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

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

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

① low spike recoveries in the msd + BS but MS is OK

② <10% recovery of 2,4,6-tribromophenol in samples J17FV0, + ~~J17FU~~ RW9/15/08 B1K

2. Known or Probable Causes(s) ① Acidic phenols are subject to erratic chromatographic behavior especially if the GC system is contaminated with high boiling material. Others spotchecks All other spike recs/surro recs within acceptance criteria. ② low recoveries appear to be due to a chemical reaction rather than to a problem with the extraction. Conversion cmpd has been reported as TIC in the samples RW9/15/08 This surrogate loss has been associated with the use of soxhlet extraction.

3. Discussion and Proposed Action Other Description: narrate

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

9/12/08

4. Project Manager Instructions...signature/date: _____

✓ 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: CJ Kelley 9/15/08 Other Explanation:

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

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

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

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

GLOSSARY

DATA QUALIFIERS

U	=	Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
J	=	Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a 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. This flag is also used for a TIC as well as for a positively identified TCL compound.
E	=	Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
D	=	Identifies all compounds identified in an analysis at a secondary dilution factor.
I	=	Interference.
NQ	=	Result qualitatively confirmed but not able to quantify.
A	=	Indicates that a TIC is a suspected aldol-condensation product.
N	=	Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
X	=	This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
Y	=	Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Semivolatiles by GC/MS, HSL List Report Date: 09/12/08 14:10

RFW Batch Number: 0808L138 Client: WC-HANFORD RC-029 K1309 Work Order: 60049001001 Page: 1a

	Cust ID:	J17FT5	J17FT6	J17FT6	J17FT6	J17FT7	J17FT8
Sample Information	RFW#:	001	002	002 MS	002 MSD	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	69 %	52 %	65 %	60 %	58 %	59 %
	2-Fluorobiphenyl	64 %	54 %	76 %	65 %	56 %	57 %
	Terphenyl-d14	75 %	69 %	88 %	75 %	76 %	79 %
	Phenol-d5	71 %	52 %	63 %	61 %	62 %	63 %
	2-Fluorophenol	68 %	50 %	67 %	64 %	59 %	62 %
	2,4,6-Tribromophenol	37 %	34 %	65 %	69 %	10 * %	31 %
Phenol		330 U	340 U	64 %	62 %	340 U	340 U
bis(2-Chloroethyl)ether		330 U	340 U	55 %	54 %	340 U	340 U
2-Chlorophenol		330 U	340 U	62 %	59 %	340 U	340 U
1,3-Dichlorobenzene		330 U	340 U	57 %	54 %	340 U	340 U
1,4-Dichlorobenzene		330 U	340 U	56 %	53 %	340 U	340 U
1,2-Dichlorobenzene		330 U	340 U	59 %	54 %	340 U	340 U
2-Methylphenol		330 U	340 U	62 %	57 * %	340 U	340 U
2,2'-oxybis(1-Chloropropane)		330 U	340 U	54 %	52 %	340 U	340 U
3/4 Methylphenol		330 U	340 U	65 %	63 %	340 U	340 U
N-Nitroso-di-n-propylamine		330 U	340 U	64 %	61 %	340 U	340 U
Hexachloroethane		330 U	340 U	56 %	54 %	340 U	340 U
Nitrobenzene		330 U	340 U	60 %	58 %	340 U	340 U
Isophorone		330 U	340 U	64 %	57 * %	340 U	340 U
2-Nitrophenol		330 U	340 U	64 %	60 %	340 U	340 U
2,4-Dimethylphenol		330 U	340 U	68 %	61 %	340 U	340 U
bis(2-Chloroethoxy)methane		330 U	340 U	66 %	59 %	340 U	340 U
2,4-Dichlorophenol		330 U	340 U	70 %	62 %	340 U	340 U
1,2,4-Trichlorobenzene		330 U	340 U	62 %	57 * %	340 U	340 U
Naphthalene		330 U	340 U	63 %	57 %	340 U	340 U
4-Chloroaniline		330 U	340 U	60 %	47 %	340 U	340 U
Hexachlorobutadiene		330 U	340 U	65 %	63 %	340 U	340 U
4-Chloro-3-methylphenol		330 U	340 U	78 %	67 %	340 U	340 U
2-Methylnaphthalene		330 U	340 U	68 %	60 %	340 U	340 U
Hexachlorocyclopentadiene		330 U	340 U	48 %	58 %	340 U	340 U
2,4,6-Trichlorophenol		330 U	340 U	70 %	65 %	340 U	340 U
2,4,5-Trichlorophenol		830 U	840 U	79 %	66 %	850 U	850 U

*= Outside of EPA CLP QC limits.

000000008

Cust ID:	J17FT5		J17FT6		J17FT6		J17FT6		J17FT7		J17FT8	
RFW#:	001		002		002 MS		002 MSD		003		004	
2-Chloronaphthalene	330	U	340	U	73	%	63	%	340	U	340	U
2-Nitroaniline	830	U	840	U	81	%	67	%	850	U	850	U
Dimethylphthalate	330	U	340	U	79	%	64	%	340	U	340	U
Acenaphthylene	330	U	340	U	77	%	64	%	340	U	340	U
2,6-Dinitrotoluene	330	U	340	U	79	%	65	%	340	U	340	U
3-Nitroaniline	830	U	840	U	77	%	57	%	850	U	850	U
Acenaphthene	330	U	340	U	75	%	62	%	340	U	340	U
2,4-Dinitrophenol	830	U	840	U	42	%	33	%	850	U	850	U
4-Nitrophenol	830	U	840	U	78	%	63	%	850	U	850	U
Dibenzofuran	330	U	340	U	75	%	62	%	340	U	340	U
2,4-Dinitrotoluene	330	U	340	U	81	%	63	%	340	U	340	U
Diethylphthalate	330	U	340	U	81	%	62	%	340	U	340	U
4-Chlorophenyl-phenylether	330	U	340	U	78	%	62	%	340	U	340	U
Fluorene	330	U	340	U	81	%	64	%	340	U	340	U
4-Nitroaniline	830	U	840	U	78	%	58	%	850	U	850	U
4,6-Dinitro-2-methylphenol	830	U	840	U	59	%	48	%	850	U	850	U
N-Nitrosodiphenylamine (1)	330	U	340	U	68	%	60	%	340	U	340	U
4-Bromophenyl-phenylether	330	U	340	U	74	%	65	%	340	U	340	U
Hexachlorobenzene	330	U	340	U	87	%	76	%	340	U	340	U
Pentachlorophenol	830	U	840	U	60	%	52	%	850	U	850	U
Phenanthrene	330	U	340	U	81	%	67	%	340	U	340	U
Anthracene	330	U	340	U	80	%	65	%	340	U	340	U
Carbazole	330	U	340	U	83	%	66	%	340	U	340	U
Di-n-butylphthalate	35	JB	24	JB	81	%	63	%	36	JB	20	JB
Fluoranthene	330	U	340	U	84	%	64	%	340	U	340	U
Pyrene	330	U	340	U	78	%	68	%	340	U	340	U
Butylbenzylphthalate	330	U	340	U	83	%	67	%	340	U	22	J
3,3'-Dichlorobenzidine	330	U	340	U	81	%	63	%	340	U	340	U
Benzo(a)anthracene	330	U	340	U	82	%	68	%	340	U	340	U
Chrysene	330	U	340	U	83	%	69	%	340	U	340	U
bis(2-Ethylhexyl)phthalate	75	JB	48	JB	81	%	64	%	58	JB	77	JB
Di-n-octyl phthalate	330	U	340	U	73	%	56	%	340	U	340	U
Benzo(b)fluoranthene	330	U	340	U	78	%	66	%	340	U	340	U
Benzo(k)fluoranthene	330	U	340	U	81	%	66	%	340	U	340	U
Benzo(a)pyrene	330	U	340	U	79	%	66	%	340	U	340	U
Indeno(1,2,3-cd)pyrene	330	U	340	U	85	%	73	%	340	U	340	U
Dibenz(a,h)anthracene	330	U	340	U	88	%	75	%	340	U	340	U
Benzo(g,h,i)perylene	330	U	340	U	86	%	75	%	340	U	340	U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

000000009

	Cust ID:	J17FT9	J17FV0	J17FV1	SBLKXK	SBLKXK BS
Sample Information	RFW#:	005	006	007	08LE0408-MB1	08LE0408-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	59 %	46 %	44 %	48 %	71 %
	2-Fluorobiphenyl	60 %	46 %	47 %	47 %	65 %
	Terphenyl-d14	77 %	71 %	65 %	61 %	85 %
	Phenol-d5	60 %	47 %	45 %	47 %	74 %
	2-Fluorophenol	58 %	43 %	43 %	43 %	67 %
	2,4,6-Tribromophenol	43 %	8 * %	16 * %	8 * %	23 %
Phenol		340 U	340 U	340 U	330 U	71 %
bis(2-Chloroethyl)ether		340 U	340 U	340 U	330 U	69 %
2-Chlorophenol		340 U	340 U	340 U	330 U	61 %
1,3-Dichlorobenzene		340 U	340 U	340 U	330 U	59 %
1,4-Dichlorobenzene		340 U	340 U	340 U	330 U	57 %
1,2-Dichlorobenzene		340 U	340 U	340 U	330 U	60 %
2-Methylphenol		340 U	340 U	340 U	330 U	66 %
2,2'-oxybis(1-Chloropropane)		340 U	340 U	340 U	330 U	73 %
3/4 Methylphenol		340 U	340 U	340 U	330 U	69 %
N-Nitroso-di-n-propylamine		340 U	340 U	340 U	330 U	71 %
Hexachloroethane		340 U	340 U	340 U	330 U	61 %
Nitrobenzene		340 U	340 U	340 U	330 U	70 %
Isophorone		340 U	340 U	340 U	330 U	65 %
2-Nitrophenol		340 U	340 U	340 U	330 U	62 %
2,4-Dimethylphenol		340 U	340 U	340 U	330 U	63 %
bis(2-Chloroethoxy)methane		340 U	340 U	340 U	330 U	66 %
2,4-Dichlorophenol		340 U	340 U	340 U	330 U	63 %
1,2,4-Trichlorobenzene		340 U	340 U	340 U	330 U	59 * %
Naphthalene		340 U	340 U	340 U	330 U	59 %
4-Chloroaniline		340 U	340 U	340 U	330 U	44 %
Hexachlorobutadiene		340 U	340 U	340 U	330 U	61 %
4-Chloro-3-methylphenol		340 U	340 U	340 U	330 U	71 %
2-Methylnaphthalene		340 U	340 U	340 U	330 U	63 %
Hexachlorocyclopentadiene		340 U	340 U	340 U	330 U	53 %
2,4,6-Trichlorophenol		340 U	340 U	340 U	330 U	32 %
2,4,5-Trichlorophenol		840 U	840 U	850 U	830 U	62 %

*= Outside of EPA CLP QC limits.

000000010

Cust ID:	J17FT9		J17FV0		J17FV1		SBLKXK		SBLKXK BS	
RFW#:	005		006		007		08LE0408-MB1		08LE0408-MB1	
2-Chloronaphthalene	340	U	340	U	340	U	330	U	62	%
2-Nitroaniline	840	U	840	U	850	U	830	U	79	%
Dimethylphthalate	340	U	340	U	340	U	330	U	66	%
Acenaphthylene	340	U	340	U	340	U	330	U	63	%
2,6-Dinitrotoluene	340	U	340	U	340	U	330	U	67	%
3-Nitroaniline	840	U	840	U	850	U	830	U	60	%
Acenaphthene	340	U	340	U	340	U	330	U	63	%
2,4-Dinitrophenol	840	U	840	U	850	U	830	U	13 *	%
4-Nitrophenol	840	U	840	U	850	U	830	U	59	%
Dibenzofuran	340	U	340	U	340	U	330	U	65	%
2,4-Dinitrotoluene	340	U	340	U	340	U	330	U	71	%
Diethylphthalate	340	U	340	U	340	U	330	U	68	%
4-Chlorophenyl-phenylether	340	U	340	U	340	U	330	U	66	%
Fluorene	340	U	340	U	340	U	330	U	66	%
4-Nitroaniline	840	U	840	U	850	U	830	U	61	%
4,6-Dinitro-2-methylphenol	840	U	840	U	850	U	830	U	34 *	%
N-Nitrosodiphenylamine (1)	340	U	340	U	340	U	330	U	55	%
4-Bromophenyl-phenylether	340	U	340	U	340	U	330	U	56	%
Hexachlorobenzene	340	U	340	U	340	U	330	U	65	%
Pentachlorophenol	840	U	840	U	850	U	830	U	30	%
Phenanthrene	340	U	340	U	340	U	330	U	66	%
Anthracene	340	U	340	U	340	U	330	U	64	%
Carbazole	340	U	340	U	340	U	330	U	60	%
Di-n-butylphthalate	340	U	19	JB	21	JB	41	J	65	%
Fluoranthene	340	U	340	U	340	U	330	U	65	%
Pyrene	340	U	340	U	340	U	330	U	77	%
Butylbenzylphthalate	340	U	340	U	340	U	330	U	71	%
3,3'-Dichlorobenzidine	340	U	340	U	340	U	330	U	45	%
Benzo(a)anthracene	340	U	340	U	340	U	330	U	67	%
Chrysene	340	U	340	U	340	U	330	U	65	%
bis(2-Ethylhexyl)phthalate	130	JB	54	JB	22	JB	23	J	73	%
Di-n-octyl phthalate	340	U	340	U	340	U	330	U	73	%
Benzo(b)fluoranthene	340	U	340	U	340	U	330	U	66	%
Benzo(k)fluoranthene	340	U	340	U	340	U	330	U	67	%
Benzo(a)pyrene	340	U	340	U	340	U	330	U	66	%
Indeno(1,2,3-cd)pyrene	340	U	340	U	340	U	330	U	57 *	%
Dibenz(a,h)anthracene	340	U	340	U	340	U	330	U	60	%
Benzo(g,h,i)perylene	340	U	340	U	340	U	330	U	58	%

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17FT5

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-029 K1309

Matrix: (soil/water) SOIL

Lab Sample ID: 0808L138-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C090908

Level: (low/med) LOW

Date Received: 08/29/08

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 09/02/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/09/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.974	200	J
2.	ALDOL CONDENSATE	6.457	2000	JAB
3.	UNKNOWN	7.172	90000	JB
4.	ALDOL CONDENSATE	8.610	500	JAB
5.	UNKNOWN	21.686	200	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17FT6

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-029 K1309

Matrix: (soil/water) SOIL

Lab Sample ID: 0808L138-002

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C090909

Level: (low/med) LOW

Date Received: 08/29/08

% Moisture: 1 decanted: (Y/N)

Date Extracted: 09/02/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/09/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH:

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.984	400	J
2.	ALDOL CONDENSATE	6.449	2000	JAB
3.	UNKNOWN	7.129	60000	JB
4.	ALDOL CONDENSATE	8.602	500	JAB
5.	UNKNOWN	37.768	100	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17FT7

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-029 K1309

Matrix: (soil/water) SOIL

Lab Sample ID: 0808L138-003

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C090910

Level: (low/med) LOW

Date Received: 08/29/08

% Moisture: 2 decanted: (Y/N)__

Date Extracted: 09/02/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/09/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.441	2000	JAB
2.	UNKNOWN	7.104	60000	JB
3.	ALDOL CONDENSATE	8.603	400	JAB
4.	UNKNOWN	21.687	500	JB
5.	ALKANE	29.921	400	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17FT8

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-029 K1309

Matrix: (soil/water) SOIL

Lab Sample ID: 0808L138-004

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C090911

Level: (low/med) LOW

Date Received: 08/29/08

% Moisture: 2 decanted: (Y/N)__

Date Extracted: 09/02/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/09/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.984	400	J
2.	ALDOL CONDENSATE	6.449	3000	JAB
3.	UNKNOWN	7.138	80000	JB
4.	ALDOL CONDENSATE	8.602	700	JAB
5.	UNKNOWN	21.686	200	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17FT9

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-029 K1309

Matrix: (soil/water) SOIL

Lab Sample ID: 0808L138-005

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C090912

Level: (low/med) LOW

Date Received: 08/29/08

% Moisture: 1 decanted: (Y/N)__

Date Extracted: 09/02/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/09/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.441	2000	JAB
2.	UNKNOWN	7.105	60000	JB
3.	UNKNOWN	19.835	400	J
4.	UNKNOWN	19.853	400	J
5.	UNKNOWN	24.263	1000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17FV0

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-029 K1309

Matrix: (soil/water) SOIL

Lab Sample ID: 0808L138-006

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C090913

Level: (low/med) LOW

Date Received: 08/29/08

% Moisture: 1 decanted: (Y/N)__

Date Extracted: 09/02/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/09/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.432	1000	JAB
2.	UNKNOWN	7.078	40000	JB
3.	UNKNOWN	21.678	400	JB
4.	UNKNOWN	27.337	300	J
5.	UNKNOWN	37.251	600	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17FV1

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-029 K1309

Matrix: (soil/water) SOIL

Lab Sample ID: 0808L138-007

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C090914

Level: (low/med) LOW

Date Received: 08/29/08

% Moisture: 2 decanted: (Y/N)__

Date Extracted: 09/02/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/10/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.984	80	J
2.	ALDOL CONDENSATE	6.431	900	JAB
3.	UNKNOWN	7.060	40000	JB
4.	ALDOL CONDENSATE	8.611	100	JAB
5.	UNKNOWN	21.677	300	JB

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKXK

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-029 K1309

Matrix: (soil/water) SOIL

Lab Sample ID: 08LE0408-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C090907

Level: (low/med) LOW

Date Received: 09/02/08

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 09/02/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/09/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	3.753	300	JA
2.	ALDOL CONDENSATE	6.440	1000	JA
3.	UNKNOWN	7.095	50000	J
4.	ALDOL CONDENSATE	8.611	300	JA
5.	UNKNOWN	21.686	400	J

Lionville Laboratory Use Only

08081138

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: Washington Group Hyford SAFA RC029

Est. Final Proj. Sampling Date

Project#: 05471-606-0110 60049-001-001-0001 WC 8-29-08

Project Contact/Phone#

Lionville Laboratory Project Manager: O. Johnson

Sub: SW846 Del: STO TAT: 15 day

Date Rec'd: 8-29-08 Date Due: 9-13-08

	A	B	C	D	E	F
Refrigerator #	6	2	2	2	2	2
#/Type Container (Liquid / Solid)	1G	1G	1G	1G	1G	1G
Volume	60	250	250	1L/250	100/250	250
Preservatives	—	—	—	—	—	—
ANALYSES REQUESTED	ORGANIC: VOA	ORGANIC: BNA	ORGANIC: ~~Pest~~/PCB	ORGANIC: Herb	INORG: Metal	INORG: CN
					Hex Chrom	TOT TPH
Lionville Laboratory Use Only	0624H	0625H 0608H PCB		Met①	TCR6	WC 9-4-08 ~~IPHC~~ ODRO

MATRIX CODES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	A	B	C	D	E	F
001	J17FT5			Soil	8-27-08	1140	X	X		X		
002	6					1214	X	X	X	X	X	X
003	7					1235	X	X	X	X	X	X
004	8					1240	X	X	X	X	X	X
005	9					1250	X	X	X	X	X	X
006	10					1300	X	X	X	X	X	X
007	11					1340	X	X	X			

Special Instructions:

Met① = HSL + B, Mo, Si
NO ~~Hg~~ WC 8-29-08
TL

Special Instructions:

9-4-08 1. Lab report Diesel and motor Oil, cancel IPHC add ODRO per client
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	8/29/08	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

0000000020

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-050	Page 1 of 2

lector WELCH-KOELLING	Company Contact Matt Perrott / Telephone No. 372-9088	Project Coordinator KESSNER, JH	Price Code 8C / Data Turnaround 15 Days
ject Designation Remaining Sites Confirmation Sampling - Soil	Sampling Location ~~128-H-3~~ BH 8/27/08 128-H-2	SAF No. RC-029	
Chest No. ERC-96-069	Field Logbook No. EL-1601-2 / COA ~~C100H4A000~~ BH 8/27/08	Method of Shipment FedEx	
pped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080320	Bill of Lading/Air Bill No. SCCOSPC	

000000021

SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

Preservation	None	None	D None	E Cool 4C	C Cool 4C	B Cool 4C	A Cool 4C	F Cool 4C		
Type of Container	P	G/P	G/P	G/P	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	1000mL	250mL	250mL	120mL	250mL	250mL	60mL	250mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1		
Sample No.	Matrix *	Sample Date	Sample Time								
7FT5	SOIL	8/27/08	1140			X			X	X	
7FT6	SOIL	8/27/08	1214			X	X	X	X	X	X
7FT7	SOIL	8/27/08	1235			X	X	X	X	X	X
7FT8	SOIL	8/27/08	1240			X	X	X	X	X	X
7FT9	SOIL	8/27/08	1250			X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
nquished By/Removed From		8/27/08 1352	BHudson BHudson	8/27/08 1352
nquished By/Removed From	SHUDSON BHudson	8/27/08 1810	1060 #3C	8/27/08 1810
nquished By/Removed From	1G0/3C J.E. Bernhard	8-28-08 0900	Fed Ex	
nquished By/Removed From	FedEx	8/29/08 0945		8-29-08 0945
nquished By/Removed From			Received By/Stored In	
nquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Gross Alpha & Gross Beta
(2) Americium-241; Nickel-63; Isotopic Plutonium (Plutonium-238, Plutonium-239/240); Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Total Uranium
(3) ICP Metals - 6010TR (Client List (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-029-050 | Page 2 of 2

lector WELCH-KOELLING	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 8C	Data Turnaround: 15 Days		
ject Designation: Remaining Sites Confirmation Sampling - Soil	Sampling Location: ~~128-H-3~~ 128-H-2 C128H21W00		SAF No.: RC-029
Chest No.: ERC-96-069	Field Logbook No.: EL-1601-2 BH 8/27/08	COA ~~C128H31W00~~ ~~C100H4A000~~ BH 8/27/08	Method of Shipment: FedEx
pped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A080320		Bill of Lading/Air Bill No.: SEE OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	D None	E Cool 4C	C Cool 4C	B Cool 4C	A Cool 4C	F Cool 4C		
Type of Container	P	G/P	G/P	G/P	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	1000mL	60mL	250mL	120mL	250mL	250mL	60mL	250mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1		

Sample No.	Matrix *	Sample Date	Sample Time										
7FV0 ✓	SOIL	8/27/08	1300			X	X	X	X	X	X		
7FV1 ✓	SOIL	8/27/08	1340			X	X	X	X	X	X		
7FV2	SOIL												
7FV3	SOIL												
7FV4	SOIL												

CHAIN OF POSSESSION	Sign/Print Names		
quished By/Removed From	Date/Time 8/27/08 1352	Received By/Stored In BILL HUDSON Bill Hudson	Date/Time 1352 8/27/08
quished By/Removed From HUDSON Bhudson	Date/Time 8/27/08 1810	Received By/Stored In 1060 #3C	Date/Time 8/27/08 1810
quished By/Removed From GG 13C J.E. Bernhard	Date/Time 0900 8-28-08	Received By/Stored In Fed Ex	Date/Time
quished By/Removed From	Date/Time 8/29/08 0945	Received By/Stored In	Date/Time 8-29-08 0945
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Gross Alpha & Gross Beta
(2) Americium-241; Nickel-63; Isotopic Plutonium (Plutonium-238, Plutonium-239/240); Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Total Uranium
(3) ICP Metals - 6010TR (Client List (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
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DS=Drum Solids
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T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

BORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

H-EE-011

000000022

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: Washington Closure Hanford Date: 8/29/08

Project/SAF/SOW/Release #: RC-029

LvLI Batch #: 08081138 Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier [illegible]		Airbill # 7785 0271 1126
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.1°	°C	Cooler # ERC-96069 AFS-04-121
How was the temperature taken?	☑ IR 2-3	☐ 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 & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI 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 _____

LvLI LIONVILLE LABORATORY INC.

SR-002-B.doc

RECEIVED
SEP 2008

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FT6	002	S	08LE0409	08/27/08	09/02/08	09/15/08
J17FT6	002 MS	S	08LE0409	08/27/08	09/02/08	09/15/08
J17FT6	002 MSD	S	08LE0409	08/27/08	09/02/08	09/15/08
J17FT7	003	S	08LE0409	08/27/08	09/02/08	09/15/08
J17FT8	004	S	08LE0409	08/27/08	09/02/08	09/15/08
J17FT9	005	S	08LE0409	08/27/08	09/02/08	09/15/08
J17FV0	006	S	08LE0409	08/27/08	09/02/08	09/15/08
J17FV1	007	S	08LE0409	08/27/08	09/02/08	09/15/08

LAB QC:

PBLKUG	MB1	S	08LE0409	N/A	09/02/08	09/15/08
PBLKUG	MB1 BS	S	08LE0409	N/A	09/02/08	09/15/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-029
LVL #: 0808L138
SDG/SAF # K1309 / RC-029

W.O. #: 60049-001-001-0001-00
Date Received: 08-29-2008

CHLORINATED PESTICIDES

Seven (7) soil samples were collected on 08-27-2008.

The samples and their associated QC samples were extracted on 09-02-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 09-15-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of the QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. All required holding times for extraction and analysis have been met.
2. The method blank was below the reporting limits for all target compounds.
3. All surrogate recoveries were within acceptance criteria.
4. Two (2) of twenty (20) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08GC116) has been enclosed.
5. Nine (9) of forty (40) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08GC116) has been enclosed.
6. All samples required a 4-fold instrument dilution due to the matrix. Reporting limits have been adjusted to reflect the necessary dilutions.
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.

r:\group\data\2008\pest\tnu\0808-138cs2.pest.doc

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.

LIONVILLE LABORATORY INC.

9. LvLI 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.

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
Laboratory Manager
Lionville Laboratory Incorporated

9/19/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08GC116

Initiator: CAC
Date: 9/16/08
Client: WC-Hanford RC029

Batch: 0808L138
Samples: 002MS/MSD BS
Method: SW846/MCAWW/CLP/

Parameter: Pest
Matrix: SOIL
Prep Batch: 08LE0409

1. Reason for SDR

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

b. General Discrepancy

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

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

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

Several spike recoveries are low

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:
~~Reco~~ ID Recoveries are outside normal limits but still > 70%
Narrate
ID

4. Project Manager Instructions...signature/date: 9/18/08

✓ 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: 9/17/08 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.

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.
P	=	This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I 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.

N = pattern match for multi-component target analytes.

Lionville Laboratory Use Only

08081138

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI Lionville Laboratory Inc.

Client: Washington Closure Hanford SAFA RC-029

Est. Final Proj. Sampling Date

Project#: 05471-606-0116 - 60049-001-001-0001 WE 8-29-08

Project Contact/Phone#

Lionville Laboratory Project Manager: O. Johnson

PO: SW846 Del: STD TAT: 15 day

Date Rec'd: 8-29-08 Date Due: 9-13-08

	A	B	C	D	E	F
Refrigerator #	6	2	2	2	2	2
#/Type Container (Liquid / Solid)	1G	1G	1G	1G	1G	1G
Volume	60	250	250	250	100	250
Preservatives	—	—	—	—	—	—
ANALYSES REQUESTED	ORGANIC: VOA	ORGANIC: BNA	ORGANIC: Pest/PCB	ORGANIC: Herb	INORG: Metal	INORG: CN
						H4 Chrom
						TOT TPH

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624H	0625H 0608H PCB					Met①		ICR6		9-4-08 TPHC	ODRO
001	J17FT5			Soil	8-27-08	1140	X	X					X					
002	6					1214	X	X	X				X		X		X	
003	7					1235	X	X	X				X		X		X	
004	8					1240	X	X	X				X		X		X	
005	9					1250	X	X	X				X		X		X	
006	10					1300	X	X	X				X		X		X	
007	11					1340	X	X	X									

Special Instructions:

Met① = HSL + B, Mo, Si
NO ~~HG~~ TL WE 8-29-08

Special Instructions:

9-4-08 1. Lab report Diesel and motor Oil, cancel IPHC add ODRO per client
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	8/29/08	0945

Relinquished by	Received by	Date	Time

Relinquished	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000006

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: WELCH-KOELLING	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 8C	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Soil	Sampling Location: ~~128-H-3~~ BH 8/27/08 128-H-2		SAF No.: RC-029
Ice Chest No.: ERC-96-069	Field Logbook No.: EL-1601-2	COA: ~~C100H4A000~~ C128H5000 BH 8/27/08	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES/LIONVILLE	Offsite Property No.: A080320		Bill of Lading/Air Bill No.: SCCOSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	P	G/P	G/P	G/P	aG	aG	G	G			
No. of Container(s)	1	1	1	1	1	1	1	1			
Volume	1000mL	60mL	250mL	120mL	250mL	250mL	60mL	250mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			

Sample No.	Matrix *	Sample Date	Sample Time										
J17FT5	SOIL	8/27/08	1140			X			X	X			
J17FT6	SOIL	8/27/08	1214			X	X	X	X	X	X		
J17FT7	SOIL	8/27/08	1235			X	X	X	X	X	X		
J17FT8	SOIL	8/27/08	1240			X	X	X	X	X	X		
J17FT9	SOIL	8/27/08	1250			X	X	X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Tom Welch-Koelling	8/27/08 1352	BHudson BHudson	8/27/08 1352
BHUDSON BHudson	8/27/08 1810	1060 #3C	8/27/08 1810
1060/3C J.E. Bernhard	8-28-08 0900	Fed Ex	
Fed Ex	8/29/08 0945		8-29-08 0945

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Gross Alpha & Gross Beta
(2) Americium-241; Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Stronium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Total Uranium
(3) ICP Metals - 6010TR (Client List {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

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V=Vegetation
X=Other

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

WCH-EE-011

000000007

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

lector: WELCH-KOELLING	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 8C	Data Turnaround: 15 Days		
ject Designation: Remaining Sites Confirmation Sampling - Soil	Sampling Location: ~~128-H-2~~ 128-H-2 C128H21W00		SAF No.: RC-029
Chest No.: 13 RC-96-069	Field Logbook No.: BH 8/27/08 EL-1601-2	COA: ~~C128H31W00~~ ~~C100H4A000~~ BH 8/27/08	Method of Shipment: FedEx
ipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A080320		Bill of Lading/Air Bill No.: SEE OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	D None	E Cool 4C	C Cool 4C	B Cool 4C	A Cool 4C	F Cool 4C		
Type of Container	P	G/P	G/P	G/P	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	1000mL	60mL	250mL	120mL	250mL	250mL	60mL	250mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1		

Sample No.	Matrix *	Sample Date	Sample Time										
17FV0	SOIL	8/27/08	1300			X	X	X	X	X	X		
17FV1	SOIL	8/27/08	1340			X	X	X	X	X	X		
17FV2	SOIL												
17FV3	SOIL												
17FV4	SOIL												

CHAIN OF POSSESSION	Sign/Print Names	
linquished By/Removed From: Date/Time 8/27/08 1352	Received By/Stored In: B/LL HUDSON Bill Hudson	Date/Time 1352 8/27/08
linquished By/Removed From: B/HUDSON Bill Hudson	Received By/Stored In: 1060 #3C	Date/Time 8/27/08 1810
linquished By/Removed From: 1060 13C	Received By/Stored In: Fed Ex	Date/Time 0900 8-28-08
linquished By/Removed From: Fed Ex	Received By/Stored In:	Date/Time 8/29/08 0945
linquished By/Removed From:	Received By/Stored In:	Date/Time 8-29-08 0945
linquished By/Removed From:	Received By/Stored In:	Date/Time
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DS=Drum Solids
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T=Tissue
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L=Liquid
V=Vegetation
X=Other

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

/CH-EE-011

000000008

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: Washington Closure Hanford Date: 8/29/08

Project/SAF/SOW/Release #: RC-029

LvLI Batch #: 08081138 Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7985 0271 1126
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.1°	°C	Cooler # ERC-96069 AFS-04-121
How was the temperature taken?	☑ IR 2-3	☐ 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 & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI 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 _____

LvLI LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 09/16/08 12:55

RFW Batch Number: **0808L138** Client: **WC-HANFORD RC-029 K1309** Work Order: 60049001001 Page: 1

000000010

	Cust ID:	J17FT6	J17FT6	J17FT6	J17FT7	J17FT8	J17FT9
Sample Information	RFW#:	002	002 MS	002 MSD	003	004	005
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	4.00	4.00	4.00	4.00	4.00	4.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	83 %	82 %	81 %	81 %	76 %	80 %
	Decachlorobiphenyl	99 %	102 %	103 %	101 %	97 %	101 %
		fl	fl	fl	fl	fl	fl
Alpha-BHC		1.3 U	80 %	77 %	1.4 U	1.4 U	1.3 U
gamma-BHC (Lindane)		1.3 U	83 %	80 %	1.4 U	1.4 U	1.3 U
Beta-BHC		1.3 U	87 %	84 %	1.4 U	1.4 U	1.3 U
Heptachlor		1.3 U	85 %	83 %	1.4 U	1.4 U	1.3 U
Delta-BHC		1.3 U	57 %	55 %	1.4 U	1.4 U	1.3 U
Aldrin		1.3 U	81 %	79 %	1.4 U	1.4 U	1.3 U
Heptachlor epoxide		1.3 U	81 %	79 %	1.4 U	1.4 U	1.3 U
gamma-Chlordane		1.3 U	83 %	80 %	1.4 U	1.4 U	1.3 U
Endosulfan I		1.3 U	87 %	84 %	1.4 U	1.4 U	1.3 U
alpha-Chlordane		1.3 U	84 %	83 %	1.4 U	1.4 U	1.3 U
4,4'-DDE		1.3 U	82 %	79 * %	1.4 U	1.4 U	1.3 U
Dieldrin		1.3 U	80 %	78 * %	1.4 U	1.4 U	1.3 U
Endrin		1.3 U	87 %	85 %	1.4 U	1.4 U	1.3 U
4,4'-DDD		1.3 U	78 %	76 * %	1.4 U	1.4 U	1.3 U
Endosulfan II		1.3 U	81 %	79 * %	1.4 U	1.4 U	1.3 U
4,4'-DDT		1.3 U	84 %	81 * %	1.4 U	1.4 U	1.3 U
Endrin aldehyde		1.3 U	77 %	76 %	1.4 U	1.4 U	1.3 U
Endosulfan sulfate		1.3 U	73 * %	71 * %	1.4 U	1.4 U	1.3 U
Methoxychlor		1.3 U	97 %	97 %	1.4 U	1.4 U	1.3 U
Endrin ketone		1.3 U	84 * %	82 * %	1.4 U	1.4 U	1.3 U
Toxaphene		13 U	13 U	13 U	14 U	14 U	13 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 09/16/08 12:55

RFW Batch Number: 0808L138 Client: WC-HANFORD RC-029 K1309 Work Order: 60049001001 Page: 2

	Cust ID:	J17FV0	J17FV1	PBLKUG	PBLKUG BS
Sample Information	RFW#:	006	007	08LE0409-MB1	08LE0409-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	4.00	4.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG

Surrogate:	Tetrachloro-m-xylene	72	%	73	%	73	%	72	%								
	Decachlorobiphenyl	95	%	97	%	82	%	92	%								
==========		==========	fl	==========	fl	==========	fl	==========	fl	==========	fl	==========	fl	==========	fl	==========	fl
Alpha-BHC		1.3	U	1.4	U	0.33	U	86	%								
gamma-BHC (Lindane)		1.3	U	1.4	U	0.33	U	86	%								
Beta-BHC		1.3	U	1.4	U	0.33	U	81	%								
Heptachlor		1.3	U	1.4	U	0.33	U	82	%								
Delta-BHC		1.3	U	1.4	U	0.33	U	65	%								
Aldrin		1.3	U	1.4	U	0.33	U	84	%								
Heptachlor epoxide		1.3	U	1.4	U	0.33	U	81	%								
gamma-Chlordane		1.3	U	1.4	U	0.33	U	83	%								
Endosulfan I		1.3	U	1.4	U	0.33	U	90	%								
alpha-Chlordane		1.3	U	1.4	U	0.33	U	82	%								
4,4'-DDE		1.3	U	1.4	U	0.33	U	82	%								
Dieldrin		1.3	U	1.4	U	0.33	U	85	%								
Endrin		1.3	U	1.4	U	0.33	U	90	%								
4,4'-DDD		1.3	U	1.4	U	0.33	U	87	%								
Endosulfan II		1.3	U	1.4	U	0.33	U	81	%								
4,4'-DDT		1.3	U	1.4	U	0.33	U	87	%								
Endrin aldehyde		1.3	U	1.4	U	0.33	U	69	%								
Endosulfan sulfate		1.3	U	1.4	U	0.33	U	73 *	%								
Methoxychlor		1.3	U	1.4	U	0.33	U	89	%								
Endrin ketone		1.3	U	1.4	U	0.33	U	83 *	%								
Toxaphene		13	U	14	U	3.3	U	3.3	U								

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

110000011

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 09/02/08 Extraction Batch No: 08LE0409 Analyst: MF Method: ****

Test: O608 Cleanup Date: Analyst: Client: WC-HANFORD RC-029 K1309

LIMS Report Date: 09/16/08 Solvent: DCM/ACETONE,HEXANE Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solid	Vis H2O	C/D FACTOR	Sulfur Clean?
0808L138-	WC-HANFORD RC-029 K1309												
002 H	J17FT6		30.0	1.0		10		1.0	N	99.17		336.1	
002 HS	J17FT6		30.0	1.0	1.0	10		1.0	N	99.17		336.1	
002 HT	J17FT6		30.0	1.0	1.0	10		1.0	N	99.17		336.1	
003 H	J17FT7		30.0	1.0		10		1.0	N	97.66		341.3	
004 H	J17FT8		30.0	1.0		10		1.0	N	97.92		340.4	
005 H	J17FT9		30.0	1.0		10		1.0	N	98.84		337.2	
006 H	J17FV0		30.0	1.0		10		1.0	N	98.91		337.0	
007 H	J17FV1		30.0	1.0		10		1.0	N	98.13		339.7	
08LE0409-MB1 H			30.0	1.0		10		1.0	N	100.00		333.3	
08LE0409-MB1 HS			30.0	1.0	1.0	10		1.0	N	100.00		333.3	

Comments:
Surrogate: 250 UL OLM PSURR 89916407
Spike: 250 UL FULL LIST PEST 89915509

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
			CAL	9/16/08	Revision

0000000012

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 09/02/08 Extraction Batch No: 08LE0409 Analyst: MF Method: **** SOX3540

Test: O608 Cleanup Date: Analyst: Client: WC-HANFORD RC-029

LIMS Report Date: 09/03/08 Solvent: DCM/ACETONE,HEXANE Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0808L138-	WC-HANFORD RC-029										
002 H	J17FT6		30.0	1.0		10		1.0	N	~~0.0~~ 97.18	333.3
002 HS	J17FT6		30.0	1.0	1.0	10		1.0	N	0.0 97.17	333.3
002 HT	J17FT6		30.0	1.0	1.0	10		1.0	N	0.0 97.17	333.3
003 H	J17FT7		30.0	1.0		10		1.0	N	0.0 97.66	333.3
004 H	J17FT8		30.0	1.0		10		1.0	N	0.0 97.92	333.3
005 H	J17FT9		30.0	1.0		10		1.0	N	0.0 98.84	333.3
006 H	J17FV0		30.0	1.0		10		1.0	N	0.0 98.91	333.3
007 H	J17FV1		30.0	1.0		10		1.0	N	0.0 98.13	333.3
08LE0409-MB1 H	PBLKUG		30.0	1.0		10		1.0	N	100.00	333.3
08LE0409-MB1 HS	PBLKUG		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 250 UL OLM PSURR 89916407
Spike: 250 UL FULL LIST PEST 89915509

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
		9/15/08 1630	SZ	9/15/08 16:35	GC

000000013

RECEIVED
SEP 2008

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FT6	002	S	08LE0409	08/27/08	09/02/08	09/17/08
J17FT6	002 MS	S	08LE0409	08/27/08	09/02/08	09/17/08
J17FT6	002 MSD	S	08LE0409	08/27/08	09/02/08	09/17/08
J17FT7	003	S	08LE0409	08/27/08	09/02/08	09/17/08
J17FT8	004	S	08LE0409	08/27/08	09/02/08	09/17/08
J17FT9	005	S	08LE0409	08/27/08	09/02/08	09/17/08
J17FV0	006	S	08LE0409	08/27/08	09/02/08	09/17/08
J17FV1	007	S	08LE0409	08/27/08	09/02/08	09/17/08

LAB QC:

PBLKUG	MB1	S	08LE0409	N/A	09/02/08	09/17/08
PBLKUG	MB1 BS	S	08LE0409	N/A	09/02/08	09/17/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-029
LVL #: 0808L138
SDG/SAF # K1309 / RC-029

W.O. #: 60049-001-001-0001-00
Date Received: 08-29-2008

PCB

Seven (7) soil samples were collected on 08-27-2008.

The samples and their associated QC samples were extracted on 09-02-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 09-17-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of the QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. Samples were extracted and analyzed within required holding time.
2. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
3. The method blank was below the reporting limits for all target compounds.
4. All obtainable surrogate recoveries were within acceptance criteria.
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.

r:\group\data\2008\pest\tmu\0808-138cs2.pcb.doc

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 11 pages.

LIONVILLE LABORATORY INC.

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

9. LvLI 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.

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.

Judy Stm

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

9/18/08
Date

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.

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.
P	=	This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I 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.
NPM	=	No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 09/18/08 09:36

RFW Batch Number: 0808L138 Client: WC-HANFORD RC-029 K1309 Work Order: 60049001001 Page: 1

000000005

	Cust ID:	J17FT6	J17FT6	J17FT6	J17FT7	J17FT8	J17FT9
Sample Information	RFW#:	002	002 MS	002 MSD	003	004	005
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	107 %	102 %	112 %	108 %	102 %	112 %
	Decachlorobiphenyl	119 %	113 %	116 %	114 %	102 %	100 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		13 U	92 %	106 %	14 U	14 U	13 U
Aroclor-1221		13 U	13 U	13 U	14 U	14 U	13 U
Aroclor-1232		13 U	13 U	13 U	14 U	14 U	13 U
Aroclor-1242		13 U	13 U	13 U	14 U	14 U	13 U
Aroclor-1248		13 U	13 U	13 U	14 U	14 U	13 U
Aroclor-1254		13 U	13 U	13 U	14 U	14 U	13 U
Aroclor-1260		13 U	101 %	114 %	14 U	14 U	13 U

	Cust ID:	J17FV0	J17FV1	PBLKUG	PBLKUG BS
Sample Information	RFW#:	006	007	08LE0409-MB1	08LE0409-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	99 %	104 %	99 %	104 %
	Decachlorobiphenyl	103 %	111 %	110 %	109 %
		fl	fl	fl	fl
Aroclor-1016		13 U	14 U	13 U	96 %
Aroclor-1221		13 U	14 U	13 U	13 U
Aroclor-1232		13 U	14 U	13 U	13 U
Aroclor-1242		13 U	14 U	13 U	13 U
Aroclor-1248		13 U	14 U	13 U	13 U
Aroclor-1254		13 U	14 U	13 U	13 U
Aroclor-1260		13 U	14 U	13 U	104 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 09/02/08 Extraction Batch No: 08LE0409 Analyst: MF Method: ****

Test: OPCB Cleanup Date: 09/03/08 Analyst: MF Client: WC-HANFORD RC-029 K1309

LIMS Report Date: 09/18/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: H2SO4

000000006

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solid	Vis H2O	C/D FACTOR	Sulfur Clean?
0808L138-	WC-HANFORD RC-029 K1309												
002	J17FT6		30.0	1.0		10		1.0	N	99.17		336.1	
002 -S	J17FT6		30.0	1.0	1.0	10		1.0	N	99.17		336.1	
002 -T	J17FT6		30.0	1.0	1.0	10		1.0	N	99.17		336.1	
003	J17FT7		30.0	1.0		10		1.0	N	97.66		341.3	
004	J17FT8		30.0	1.0		10		1.0	N	97.92		340.4	
005	J17FT9		30.0	1.0		10		1.0	N	98.84		337.2	
006	J17FV0		30.0	1.0		10		1.0	N	98.91		337.0	
007	J17FV1		30.0	1.0		10		1.0	N	98.13		339.7	
08LE0409-MB1			30.0	1.0		10		1.0	N	100.00		333.3	
08LE0409-MB1 -S			30.0	1.0	1.0	10		1.0	N	100.00		333.3	

Comments:
Surrogate: 250 UL OLM PSURR 89916407
Spike: 250 UL AR1660 89916603

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
			CAC	9/18/08	% Solids added

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 09/02/08 Extraction Batch No: 08LE0409 Analyst: MF Method: **** SOX3540

Test: OPCB Cleanup Date: 09/03/08 Analyst: MF Client: WC-HANFORD RC-029

LIMS Report Date: 09/03/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: H2SO4

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0808L138-	WC-HANFORD RC-029										
002	J17FT6		30.0	1.0		10		1.0	N	0.0 99.17	333.3
002 -S	J17FT6		30.0	1.0	1.0	10		1.0	N	0.0	333.3
002 -T	J17FT6		30.0	1.0	1.0	10		1.0	N	0.0	333.3
003	J17FT7		30.0	1.0		10		1.0	N	0.0 97.66	333.3
004	J17FT8		30.0	1.0		10		1.0	N	0.0 97.92	333.3
005	J17FT9		30.0	1.0		10		1.0	N	0.0 98.04	333.3
006	J17FV0		30.0	1.0		10		1.0	N	0.0 98.91	333.3
007	J17FV1		30.0	1.0		10		1.0	N	0.0 98.13	333.3
08LE0409-MB1	PBLKUG		30.0	1.0		10		1.0	N	100.00	333.3
08LE0409-MB1 -S	PBLKUG		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 250 UL OLM PSURR 89916407
Spike: 250 UL AR1660 89916603

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	9/15/08 1630	SZ	9/15/08 16:35	GC

000000007

Lionville Laboratory Use Only

08081138

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

Client: Washington Closure Hanford SAM RC-029

Est. Final Proj. Sampling Date

Project#: ~~05471.606-0116~~ 60049.601.001.0001 WC 8-29-08

Project Contact/Phone#

Lionville Laboratory Project Manager: O. Johnson

Sub: SW846 Del: STD TAT: 15 day

Date Rec'd: 8-29-08 Date Due: 9-13-08

	A	B	C	D	E	F
Refrigerator #	6	2	2	2	2	2
#/Type Container (Liquid / Solid)	1G	1G	1G	1G	1G	1G
Volume	60	250	250	1/250	1/250	250
Preservatives	—	—	—	—	—	—
ANALYSES REQUESTED	ORGANIC			INORG		
	VOA	BNA	~~Pest/~~ PCB	Herb	Metal	CN	HG Silica	TOT TPH

Lionville Laboratory Use Only

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	06274	06254	06084 OPCB				Met (1)		ICR6		9-4-08 IPHC	ODRO		
001	J17FT5			Soil	8-27-08	1140	X	X					X							
002	6					1214	X	X	X				X		X		X			
003	7					1235	X	X	X				X		X		X			
004	8					1240	X	X	X				X		X		X			
005	9					1250	X	X	X				X		X		X			
006	10					1300	X	X	X				X		X		X			
007	11					1340	X	X	X											

MATRIX CODES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish

Special Instructions:

Met (1) = HSL + B, Mo, Si
NO Hg WC 8-29-08
TL

Special Instructions:

9-4-08 1. Lab report Diesel and motor Oil, cancel IPHC add ODRO per client
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
		8/29/08	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

00000000

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-050	Page 1 of 2
lector WELCH-KOELLING	Company Contact: Matt Perrott; Telephone No.: 372-9088	Project Coordinator: KESSNER, JH	Price Code: 8C; Data Turnaround: 15 Days
ject Designation: Remaining Sites Confirmation Sampling - Soil	Sampling Location: ~~128-H-3~~ BH 8/27/08 128-H-2	SAF No.: RC-029	
Chest No.: ERC-96-069	Field Logbook No.: EL-1601-2; COA ~~C100H4A000~~ BH 8/27/08	Method of Shipment: FedEx	
pped To: EBERLINE SERVICES/LIONVILLE	Offsite Property No.: A080320	Bill of Lading/Air Bill No.: SCCOSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	D None	E Cool 4C	C Cool 4C	B Cool 4C	A Cool 4C	F Cool 4C		
Type of Container	P	G/P	G/P	G/P	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	1000mL	60mL	250mL	120mL	250mL	250mL	60mL	250mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1		

Sample No.	Matrix *	Sample Date	Sample Time										
7FT5	SOIL	8/27/08	1140			X			X	X			
7FT6	SOIL	8/27/08	1214			X	X	X	X	X	X		
7FT7	SOIL	8/27/08	1235			X	X	X	X	X	X		
7FT8	SOIL	8/27/08	1240			X	X	X	X	X	X		
7FT9	SOIL	8/27/08	1250			X	X	X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	8/27/08 1352	BHudson BHudson	8/27/08 1352
BHUDSON BHudson	8/27/08 1810	1060 #3C	8/27/08 1810
GO/JC J.E. Bernhard	8-28-08 0900	Fed Ex	
[illegible]	8/29/08 0945	[illegible]	8-29-08 0945

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Gross Alpha & Gross Beta
(2) Americium-241; Nickel-63; Isotopic Plutonium (Plutonium-238, Plutonium-239/240); Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Total Uranium
(3) ICP Metals - 6010TR (Client List (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

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

CH-EE-011

000000009

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-050	Page 2 of 2

ector WELCH-KOELLING	Company Contact: Matt Perrott; Telephone No.: 372-9088	Project Coordinator: KESSNER, JH	Price Code: 8C; Data Turnaround: 15 Days
ject Designation: emaining Sites Confirmation Sampling - Soil	Sampling Location: ~~128-H-3~~ 128-H-2 C128H21W00	SAF No.: RC-029	
Chest No.: 13 RC-96-069	Field Logbook No.: BH 8/27/08 EL-1601-2; COA ~~C128H31W000~~ ~~C100H4A000~~ BH 8/27/08	Method of Shipment: FedEx	
pped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A080320	Bill of Lading/Air Bill No.: SEE OSPC	

ssible Sample Hazards/Remarks

ecial Handling and/or Storage

Preservation	None	None	D None	E Cool 4C	C Cool 4C	B Cool 4C	A Cool 4C	F Cool 4C			
Type of Container	P	G/P	G/P	G/P	aG	aG	G	G			
No. of Container(s)	1	1	1	1	1	1	1	1			
Volume	1000mL	60mL	250mL	120mL	250mL	250mL	60mL	250mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			

Sample No.	Matrix *	Sample Date	Sample Time										
FV0 ✓	SOIL	8/27/08	1300			X	X	X	X	X	X		
FV1 ✓	SOIL	8/27/08	1340			X	X	X	X	X	X		
FV2	SOIL												
FV3	SOIL												
FV4	SOIL												

CHAIN OF POSSESSION	Sign/Print Names		
quished By/Removed From	Date/Time 8/27/08 1352	Received By/Stored In: BILL HUDSON Bill Hudson	Date/Time 1352 8/27/08
quished By/Removed From: HUDSON Bill Hudson	Date/Time 8/27/08 1810	Received By/Stored In: 1060 #3C	Date/Time 8/27/08 1810
quished By/Removed From: GO 13C S.E. Bernhard	Date/Time 0900 8-28-08	Received By/Stored In: Fed Ex	Date/Time
quished By/Removed From:	Date/Time 8/29/08 0945	Received By/Stored In:	Date/Time 8-29-08 0945
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Gross Alpha & Gross Beta
(2) Americium-241; Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Total Uranium
(3) ICP Metals - 6010TR (Client List {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

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

H-EE-011

000000010

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: Washington Closure Hanford Date: 8/29/08

Project/SAF/SOW/Release #: RC-029

LvLI Batch #: 08081138 Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier [illegible]		Airbill # 7985 0271 1126
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.1°	°C	Cooler # ERC-96069 AFS-04-121
How was the temperature taken?	☑ IR 2-3	☐ 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 & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI 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 _____

LVLI LIONVILLE LABORATORY INC.

SR-002-B.doc

RECEIVED
SEP 2008

Lionville Laboratory, Inc.
DRO ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FT5	001	S	08LE0420	08/27/08	09/05/08	09/09/08
J17FT6	002	S	08LE0420	08/27/08	09/05/08	09/09/08
J17FT6	002 MS	S	08LE0420	08/27/08	09/05/08	09/10/08
J17FT6	002 MSD	S	08LE0420	08/27/08	09/05/08	09/10/08
J17FT7	003	S	08LE0420	08/27/08	09/05/08	09/10/08
J17FT8	004	S	08LE0420	08/27/08	09/05/08	09/10/08
J17FT9	005	S	08LE0420	08/27/08	09/05/08	09/10/08
J17FV0	006	S	08LE0420	08/27/08	09/05/08	09/10/08
J17FV1	007	S	08LE0420	08/27/08	09/05/08	09/10/08
LAB QC:						
BLK	MB1	S	08LE0420	N/A	09/05/08	09/09/08
BLK	MB1 BS	S	08LE0420	N/A	09/05/08	09/09/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-029
LVL #: 0808L138
SDG/SAF # K1309 /RC-029

W.O. #: 60049-001-001-0001-00
Date Received: 08-29-2008

DIESEL RANGE ORGANICS

Seven (7) soil samples were collected on 08-27-2008.

The samples and their associated QC samples were extracted on 09-05-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 09-09,10-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8015B.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. All required holding times for extraction and analysis have been met.
2. The method blank was below the reporting limits for all target compounds.
3. All obtainable surrogate recoveries were within acceptance criteria.
4. All blank spike recoveries were within acceptance criteria.
5. All matrix spike recoveries were within acceptance criteria.
6. All initial calibrations associated with this data set were within acceptance criteria.
7. 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 13 pages.
r:\group\data\2008\dro\tnu\0808-138cs2.doc

LvLI
LIONVILLE LABORATORY INC.

8. LvLI 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.

9. 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 Incorporated

9/15/08
Date

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.

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.
P	=	This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I 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.
NPM	=	No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

DIESEL RANGE ORGANICS BY GC

Report Date: 09/11/08 14:30

RFW Batch Number: **0808L138** Client: **WC-HANFORD RC-029 K1309** Work Order: 60049001001 Page: 1

	Cust ID:	J17FT5	J17FT6	J17FT6	J17FT6	J17FT7	J17FT8
Sample Information	RFW#:	001	002	002 MS	002 MSD	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	p-Terphenyl	98 %	86 %	82 %	77 %	92 %	104 %
Diesel Range Organics		880 J	3360 U	74 %	71 %	3410 U	3400 U
Motor Oil Range Organics		10000 U	10100 U	NS	NS	3800 J	4100 J

	Cust ID:	J17FT9	J17FV0	J17FV1	BLK	BLK BS
Sample Information	RFW#:	005	006	007	08LE0420-MB1	08LE0420-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	p-Terphenyl	96 %	108 %	99 %	97 %	70 %
Diesel Range Organics		3370 U	3370 U	3400 U	3330 U	66 %
Motor Oil Range Organics		10100 U	1400 J	10200 U	10000 U	NS

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

500000005

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 09/05/08 Extraction Batch No: 08LE0420 Analyst: MF Method: ****

Test: ODRO Cleanup Date: Analyst: Client: WC-HANFORD RC-029 K1309

LIMS Report Date: 09/11/08 Solvent: DCM Adsorbent:

000000006

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solid	C/D FACTOR
0808L138-	WC-HANFORD RC-029 K1309										
001	J17FT5		30	1.0		1.0		1.0	N	99.98	33.34
002	J17FT6		30	1.0		1.0		1.0	N	99.17	33.61
002 -S	J17FT6		30	1.0	1.0	1.0		1.0	N	99.17	33.61
002 -T	J17FT6		30	1.0	1.0	1.0		1.0	N	99.17	33.61
003	J17FT7		30	1.0		1.0		1.0	N	97.66	34.13
004	J17FT8		30	1.0		1.0		1.0	N	97.92	34.04
005	J17FT9		30	1.0		1.0		1.0	N	98.84	33.72
006	J17FV0		30	1.0		1.0		1.0	N	98.91	33.70
007	J17FV1		30	1.0		1.0		1.0	N	98.13	33.97
0808L145-	WC-HANFORD RC-029 K1310										
001	J178T0		30	1.0		1.0		1.0	N	98.90	33.70
001 -S	J178T0		30	1.0	1.0	1.0		1.0	N	98.90	33.70
001 -T	J178T0		30	1.0	1.0	1.0		1.0	N	98.90	33.70
002	J178T1		30	1.0		1.0		1.0	N	99.20	33.60
003	J178T2		30	1.0		1.0		1.0	N	99.46	33.51
004	J178T3		30	1.0		1.0		1.0	N	99.11	33.63
005	J178T4		30	1.0		1.0		1.0	N	97.	34.27
006	J178T5		30	1.0		1.0		1.0	N	88.	37.81
0809L021-	WC-HANFORD RC-029										
002	J17FV6		30	1.0		1.0		1.0	N	96.	34.37
002 -S	J17FV6		30	1.0	1.0	1.0		1.0	N	96.	34.37
002 -T	J17FV6		30	1.0	1.0	1.0		1.0	N	96.	34.37
003	J17FV7		30	1.0		1.0		1.0	N	96.	34.37

Comments:
Surrogate: 1.0 ML ODRO SURR 86971906
Spike: 1.0 ML DIESEL SPIKE 86971905

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
			CAC	9/11/08	Revision

SAMPLE EXTRACTION RECORD

Sheet no.: 2

Extract. Date: 09/05/08 Extraction Batch No: 08LE0420 Analyst: MF Method: ****

Test: ODRO Cleanup Date: Analyst: Client: WC-HANFORD RC-029 K1309

LIMS Report Date: 09/11/08 Solvent: DCM Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solid	C/D FACTOR
0809L021-	WC-HANFORD RC-029										
004	J17FV8		30	1.0		10.0		1.0	N	92.	361.0
08LE0420-MB1			30	1.0		1.0		1.0	N	100	33.33
08LE0420-MB1 -S			30	1.0	1.0	1.0		1.0	N	100	33.33

Comments:
Surrogate: 1.0 ML ODRO SURR 86971906
Spike: 1.0 ML DIESEL SPIKE 86971905

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer

000000007

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 08/05/09 Extraction Batch No: 08LE0420 Analyst: MF Method: ****SOX3540

Test: ODRO Cleanup Date: Analyst: Client: WC-HANFORD RC-029 K1309

LIMS Report Date: 09/08/08 Solvent: DCM Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0808L138-	WC-HANFORD RC-029 K1309										
001	J17FT5		30	1.0		1.0		1.0	N	99.98	33.34
002	J17FT6		30	1.0		1.0		1.0	N	99.17	33.61
002 -S	J17FT6		30	1.0	1.0	1.0		1.0	N	99.17	33.61
002 -T	J17FT6		30	1.0	1.0	1.0		1.0	N	99.17	33.61
003	J17FT7		30	1.0		1.0		1.0	N	97.66	34.13
004	J17FT8		30	1.0		1.0		1.0	N	97.92	34.04
005	J17FT9		30	1.0		1.0		1.0	N	98.84	33.72
006	J17FV0		30	1.0		1.0		1.0	N	98.91	33.70
007	J17FV1		30	1.0		1.0		1.0	N	98.13	33.97
0808L145-	WC-HANFORD RC-029 K1310										
001	J178T0		30	1.0		1.0		1.0	N	98.90	33.70
001 -S	J178T0		30	1.0	1.0	1.0		1.0	N	98.90	33.70
001 -T	J178T0		30	1.0	1.0	1.0		1.0	N	98.90	33.70
002	J178T1		30	1.0		1.0		1.0	N	99.20	33.60
003	J178T2		30	1.0		1.0		1.0	N	99.46	33.51
004	J178T3		30	1.0		1.0		1.0	N	99.11	33.63
005	J178T4		30	1.0		1.0		1.0	N	97.28	34.27
006	J178T5		30	1.0		1.0		1.0	N	88.15	37.81
0809L021-	WC-HANFORD RC-029										
002	J17FV6		30	1.0		1.0		1.0	N	96.97	34.37
002 -S	J17FV6		30	1.0	1.0	1.0		1.0	N	96.97	34.37
002 -T	J17FV6		30	1.0	1.0	1.0		1.0	N	96.97	34.37
003	J17FV7		30	1.0		1.0		1.0	N	96.99	34.37

Comments:
Surrogate: 1.0 ML ODRO SURR 86971906
Spike: 1.0 ML DIESEL SPIKE 86971905

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[illegible]	9/8/08 1130	SZ	9/9/08 12:00	GC

000000008

Richville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 2

Extract. Date: 08/05/09 Extraction Batch No: 08LE0420 Analyst: MF Method: **** SOX 3540

Test: ODRO Cleanup Date: Analyst: Client: WC-HANFORD RC-029 K1309

LIMS Report Date: 09/08/08 Solvent: DCM Adsorbent:

Sample No:	Client Name Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0809L021-	WC-HANFORD RC-029										
004	J17FV8		30	1.0		10.0		1.0	N	92.34	361.0
08LE0420-MB1	BLK		30	1.0		1.0		1.0	N	100.00	33.33
08LE0420-MB1 -S	BLK		30	1.0	1.0	1.0		1.0	N	100.00	33.33

Comments:
Surrogate: 1.0 ML ODRO SURR 86971906
Spike: 1.0 ML DIESEL SPIKE 86971905

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	9/9/08 1130	SZ	9/9/08 12:00	

000000009

Lionville Laboratory Use Only

0808L138

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: Washington Closure Hanford SAM RC-029

Est. Final Proj. Sampling Date:

Project#: ~~05471/606-016~~ 60049-601-001-0001 WC 8-29-08

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. Johnson

QC: SW846 Del: STD TAT: 15 day

Date Rec'd: 8-29-08 Date Due: 9-13-08

		A	B	C					D		E		F				
Refrigerator #		6	2	2					2		2		2				
#/Type Container	Liquid	1G	1G	1G					1G		1G		1G				
#/Type Container	Solid																
Volume		60	250	250					250		100		250				
Preservatives		—		—					—		—		—				
ANALYSES REQUESTED		ORGANIC							INORG								
		VOA	BNA	~~Pest/~~ PCB	Herb				Metal	CN	Hg Cr6		TOT TPH				
Lionville Laboratory Use Only		0624H	0625H	0608H 8PCB					Met①		ICR6		WC 9-4-08 ~~IPHC~~	ODRO			

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624H	0625H	0608H 8PCB					Met①		ICR6		WC 9-4-08 ~~IPHC~~	ODRO			
S- Soil	001	J17FT5			Soil	8-27-08	1140	X	X						X								
SE- Sediment	002	6					1214	X	X	X					X		X		X				
SO- Solid	003	7					1235	X	X	X					X		X		X				
SL- Sludge	004	8					1240	X	X	X					X		X		X				
W- Water	005	9					1250	X	X	X					X		X		X				
O- Oil	006	V0					1300	X	X	X					X		X		X				
A- Air	007	11					1340	X	X	X													
DS- Drum Solids																							
DL- Drum Liquids																							
L- EP/TCLP Leachate																							
WI- Wipe																							
X- Other																							
F- Fish																							

Special Instructions:

Met① = HSL + B, Mo, Si
NO ~~Hg~~ WC 8-29-08
TL

Special Instructions:

9-4-08 1. Lab report Diesel and motor Oil, cancel IPHC add ODRO per client
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	8/29/08	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000010

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-050	Page 1 of 2

Collector: WELCH-KOELLING	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 8C	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Soil	Sampling Location: ~~128-H-3~~ BH 8/27/08 128-H-2		SAF No.: RC-029
Ice Chest No.: ERC-96-069	Field Logbook No.: EL-1601-2	COA: ~~C128H5000~~ ~~C100H4A000~~ BH 8/27/08	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES ~~LIONVILLE~~	Offsite Property No.: A080320		Bill of Lading/Air Bill No.: SCCOSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	P	G/P	G/P	G/P	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	1000mL	250mL	250mL	120mL	250mL	250mL	60mL	250mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1		

Sample No.	Matrix *	Sample Date	Sample Time										
J17FT5	SOIL	8/27/08	1140			X			X	X			
J17FT6	SOIL	8/27/08	1214			X	X	X	X	X	X		
J17FT7	SOIL	8/27/08	1235			X	X	X	X	X	X		
J17FT8	SOIL	8/27/08	1240			X	X	X	X	X	X		
J17FT9	SOIL	8/27/08	1250			X	X	X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Tom Wettkoehler	8/27/08 1352	BHudson BHudson	8/27/08 1352
BHUDSON BHudson	8/27/08 1810	1060 #3C	8/27/08 1810
1060/3C J.E. Bernhard	8-28-08 0900	Fed Ex	
Fed Ex	8/29/08 0945	Fed Ex	8-29-08 0945

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Gross Alpha & Gross Beta
(2) Americium-241; Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Total Uranium
(3) ICP Metals - 6010TR (Client List {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

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

WCH-EE-011

000000011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-050	Page 2 of 2

Collector: WELCH-KOELLING	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 8C	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Soil	Sampling Location: ~~128-H-3~~ 128-H-2 C128H21W00		SAF No.: RC-029
Ice Chest No.: 13 RC-96-069	Field Logbook No.: BH 8/27/08 EL-1601-2	COA ~~C128H310000~~ ~~C100H4A000~~ BH 8/27/08	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080320		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

	D	E	C	B	A	F		
Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1		
Volume	250mL	120mL	250mL	250mL	60mL	250mL		
SAMPLE ANALYSIS	See item (3) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1		

Sample No.	Matrix *	Sample Date	Sample Time										
J17FV0 ✓	SOIL	8/27/08	1300			X	X	X	X	X	X		
J17FV1 ✓	SOIL	8/27/08	1340			X	X	X	X	X	X		
J17FV2	SOIL												
J17FV3	SOIL												
J17FV4	SOIL												

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 8/27/08 1352	Received By/Stored In	Date/Time 1352
		BILL HUDSON Bill Hudson	8/27/08
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
BHUDSON Bhudson	8/27/08 1810	1060 #3C	8/27/08 1810
Relinquished By/Removed From	Date/Time 0900	Received By/Stored In	Date/Time
1060 13C S.E. Bernhard	8-28-08	Fed Ex	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	8/29/08 0945		8-29-08 0945
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

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Gross Alpha & Gross Beta
(2) Americium-241; Nickel-63; Isotopic Plutonium (Plutonium-238, Plutonium-239/240); Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Total Uranium
(3) ICP Metals - 6010TR (Client List (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

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

WCH-EE-011

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Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: Washington Closure Hanford Date: 8/29/08

Project/SAF/SOW/Release #: RC-029

LvLI Batch #: 08081138 Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier [illegible]		Airbill # 7785 0271 1126
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.1°	°C	Cooler # ERC-96069 AFS-04-121
How was the temperature taken?	☑ IR 2-3	☐ 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 & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI 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 _____

LVLI LIONVILLE LABORATORY INC.

RECEIVED
SEP 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FT5						
SILVER, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
ALUMINUM, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
ARSENIC, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
BORON, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
BARIUM, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
BERYLLIUM, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
CALCIUM, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
CADMIUM, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
COBALT, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
CHROMIUM, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
COPPER, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
IRON, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
MERCURY, TOTAL	001	S	08C0151	08/27/08	09/02/08	09/03/08
POTASSIUM, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
MAGNESIUM, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
MANGANESE, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
MOLYBDENUM, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
SODIUM, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
NICKEL, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
LEAD, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
ANTIMONY, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
SELENIUM, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
SILICON, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
VANADIUM, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
ZINC, TOTAL	001	S	08L0330	08/27/08	09/10/08	09/11/08
J17FT6						
SILVER, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
SILVER, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
SILVER, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
ALUMINUM, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
ALUMINUM, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
ALUMINUM, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
ARSENIC, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ARSENIC, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
ARSENIC, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
BORON, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
BORON, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
BORON, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
BARIUM, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
BARIUM, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
BARIUM, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
BERYLLIUM, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
BERYLLIUM, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
BERYLLIUM, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
CALCIUM, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
CALCIUM, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
CALCIUM, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
CADMIUM, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
CADMIUM, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
CADMIUM, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
COBALT, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
COBALT, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
COBALT, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
CHROMIUM, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
CHROMIUM, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
CHROMIUM, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
COPPER, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
COPPER, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
COPPER, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
IRON, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
IRON, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
IRON, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
MERCURY, TOTAL	002	S	08C0151	08/27/08	09/02/08	09/03/08
MERCURY, TOTAL	002 REP	S	08C0151	08/27/08	09/02/08	09/03/08
MERCURY, TOTAL	002 MS	S	08C0151	08/27/08	09/02/08	09/03/08
POTASSIUM, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
POTASSIUM, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
POTASSIUM, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
MAGNESIUM, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
MAGNESIUM, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
MAGNESIUM, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
MANGANESE, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
MANGANESE, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
MOLYBDENUM, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
MOLYBDENUM, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
MOLYBDENUM, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
SODIUM, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
SODIUM, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
SODIUM, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
NICKEL, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
NICKEL, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
NICKEL, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
LEAD, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
LEAD, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
LEAD, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
ANTIMONY, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
ANTIMONY, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
ANTIMONY, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
SELENIUM, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
SELENIUM, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
SELENIUM, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
SILICON, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
SILICON, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
SILICON, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
VANADIUM, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
VANADIUM, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
VANADIUM, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
ZINC, TOTAL	002	S	08L0330	08/27/08	09/10/08	09/11/08
ZINC, TOTAL	002 REP	S	08L0330	08/27/08	09/10/08	09/11/08
ZINC, TOTAL	002 MS	S	08L0330	08/27/08	09/10/08	09/11/08
J17FT7						
SILVER, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
ALUMINUM, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
ARSENIC, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
BORON, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
BARIUM, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BERYLLIUM, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
CALCIUM, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
CADMIUM, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
COBALT, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
CHROMIUM, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
COPPER, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
IRON, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
MERCURY, TOTAL	003	S	08C0151	08/27/08	09/02/08	09/03/08
POTASSIUM, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
MAGNESIUM, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
MANGANESE, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
MOLYBDENUM, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
SODIUM, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
NICKEL, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
LEAD, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
ANTIMONY, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
SELENIUM, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
SILICON, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
VANADIUM, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
ZINC, TOTAL	003	S	08L0330	08/27/08	09/10/08	09/11/08
J17FT8						
SILVER, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
ALUMINUM, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
ARSENIC, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
BORON, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
BARIUM, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
BERYLLIUM, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
CALCIUM, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
CADMIUM, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
COBALT, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
CHROMIUM, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
COPPER, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
IRON, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
MERCURY, TOTAL	004	S	08C0151	08/27/08	09/02/08	09/03/08
POTASSIUM, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
MAGNESIUM, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
MOLYBDENUM, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
SODIUM, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
NICKEL, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
LEAD, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
ANTIMONY, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
SELENIUM, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
SILICON, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
VANADIUM, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
ZINC, TOTAL	004	S	08L0330	08/27/08	09/10/08	09/11/08
J17FT9						
SILVER, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
ALUMINUM, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
ARSENIC, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
BORON, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
BARIUM, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
BERYLLIUM, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
CALCIUM, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
CADMIUM, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
COBALT, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
CHROMIUM, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
COPPER, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
IRON, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
MERCURY, TOTAL	005	S	08C0151	08/27/08	09/02/08	09/03/08
POTASSIUM, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
MAGNESIUM, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
MANGANESE, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
MOLYBDENUM, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
SODIUM, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
NICKEL, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
LEAD, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
ANTIMONY, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
SELENIUM, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
SILICON, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
VANADIUM, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08
ZINC, TOTAL	005	S	08L0330	08/27/08	09/10/08	09/11/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FV0						
SILVER, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
ALUMINUM, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
ARSENIC, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
BORON, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
BARIUM, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
BERYLLIUM, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
CALCIUM, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
CADMIUM, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
COBALT, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
CHROMIUM, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
COPPER, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
IRON, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
MERCURY, TOTAL	006	S	08C0151	08/27/08	09/02/08	09/03/08
POTASSIUM, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
MAGNESIUM, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
MANGANESE, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
MOLYBDENUM, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
SODIUM, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
NICKEL, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
LEAD, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
ANTIMONY, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
SELENIUM, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
SILICON, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
VANADIUM, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
ZINC, TOTAL	006	S	08L0330	08/27/08	09/10/08	09/11/08
J17FV1						
SILVER, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
ALUMINUM, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
ARSENIC, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
BORON, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
BARIUM, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
BERYLLIUM, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
CALCIUM, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CADMIUM, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
COBALT, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
CHROMIUM, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
COPPER, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
IRON, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
MERCURY, TOTAL	007	S	08C0151	08/27/08	09/02/08	09/03/08
POTASSIUM, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
MAGNESIUM, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
MANGANESE, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
MOLYBDENUM, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
SODIUM, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
NICKEL, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
LEAD, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
ANTIMONY, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
SELENIUM, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
SILICON, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
VANADIUM, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08
ZINC, TOTAL	007	S	08L0330	08/27/08	09/10/08	09/11/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
SILVER, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
ALUMINUM LABORTORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
ALUMINUM, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
ARSENIC LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
ARSENIC, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
BORON LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
BORON, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
BARIUM LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
BARIUM, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
BERYLLIUM, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
CALCIUM LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
CALCIUM, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
CADMIUM LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
CADMIUM, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
COBALT LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COBALT, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
CHROMIUM LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
CHROMIUM, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
COPPER LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
COPPER, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
IRON LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
IRON, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
MERCURY LABORATORY	LC1 BS	S	08C0151	N/A	09/02/08	09/03/08
MERCURY, TOTAL	MB1	S	08C0151	N/A	09/02/08	09/03/08
POTASSIUM LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
POTASSIUM, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
MAGNESIUM, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
MANGANESE LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
MANGANESE, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
MOLYBDENUM LABORATOR	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
MOLYBDENUM, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
SODIUM LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
SODIUM, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
NICKEL LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
NICKEL, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
LEAD LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
LEAD, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
ANTIMONY LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
ANTIMONY, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
SELENIUM LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
SELENIUM, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
SILICON LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
SILICON, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
VANADIUM LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
VANADIUM, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08
ZINC LABORATORY	LC1 BS	S	08L0330	N/A	09/10/08	09/11/08
ZINC, TOTAL	MB1	S	08L0330	N/A	09/10/08	09/11/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-029
LVL#: 0808L138
SDG/SAF#: K1309/RC-029

W.O.#: 60049-001-001-0001-00
Date Received: 08-29-08

METALS CASE NARRATIVE

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvLI) 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 7 soil samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.

   All samples were run with 3-fold dilutions with the exception of sample J17FT5 for ICP metals due to sample matrix.

   All samples were run on a different instrument for Potassium and Sodium with no dilution.

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

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of Sodium and Potassium in file TA0911B. The samples were rerun for Sodium and Potassium in file PS0911C.

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

6. The preparation/method blank for 1 analyte was outside method criteria. {less than the Limit of Quantitation (3-10X the LOD), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

   a). The MB result for Sodium was greater than the Limit of Quantitation (LOQ) {3-10x the (LOD) Limit of Detection} and all samples read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.

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 30 pages.

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

8. All laboratory control samples (LCS) were within the 80-120% control limits with the exception of Silicon (32.6%). Sample results may be biased low. Refer to the Inorganics Laboratory Control Standards Report.

9. The matrix spike (MS) recoveries for 5 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J17FT6	Aluminum	60,000	97.3
	Calcium	60,000	100.7
	Iron	60,000	102.3
	Antimony	300	102.6
	Silicon	300	67.0

11. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

12. For the purposes of this report, the data has 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.

13. LvLI 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.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this 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 Incorporated

9/15/08
Date

LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within th

Lot#: 08081138

Leaching Procedure: __1310 __1311 __1312 __Other:_____

CLP Metals __ Digestion and __ Analysis Methods: __ILM03.0 __ILM04.0

Metals Digestion Methods: __3005A __3010A __3015 __3020A ✓3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	✓6010B		__200.7				__99
Antimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	✓6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	✓6010B		__200.7				__99
Cadmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	✓6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	✓6010B		__200.7				__99
Copper	✓6010B	__7211 [5]	__200.7	__220.2			__99
Iron	✓6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	✓6010B		__200.7				__99
Manganese	✓6010B		__200.7				__99
Mercury	__7470A [3]	✓__7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	✓6010B		__200.7				__99
Nickel	✓6010B		__200.7				__99
Potassium	✓6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	✓6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	✓6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	✓6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	✓6010B		__200.7				__99
Zinc	✓6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Method:

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LCS = Laboratory Control Sample.
NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/12/08

CLIENT: WC-HANFORD RC-029 K1309 LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J17FT5	Silver, Total	0.83	u	MG/KG	0.83	1.0
		Aluminum, Total	55.3		MG/KG	16.7	1.0
		Arsenic, Total	0.83	u	MG/KG	0.83	1.0
		Boron, Total	8.3	u	MG/KG	8.3	1.0
		Barium, Total	16.7	u	MG/KG	16.7	1.0
		Beryllium, Total	0.42	u	MG/KG	0.42	1.0
		Calcium, Total	416	u	MG/KG	416	1.0
		Cadmium, Total	0.42	u	MG/KG	0.42	1.0
		Cobalt, Total	4.2	u	MG/KG	4.2	1.0
		Chromium, Total	0.83	u	MG/KG	0.83	1.0
		Copper, Total	2.1	u	MG/KG	2.1	1.0
		Iron, Total	124		MG/KG	8.3	1.0
		Mercury, Total	0.03	u	MG/KG	0.03	1.0
		Potassium, Total	416	u	MG/KG	416	1.0
		Magnesium, Total	416	u	MG/KG	416	1.0
		Manganese, Total	3.6		MG/KG	1.2	1.0
		Molybdenum, Total	8.3	u	MG/KG	8.3	1.0
		Sodium, Total	25.1		MG/KG	1.7	1.0
		Nickel, Total	3.3	u	MG/KG	3.3	1.0
		Lead, Total	0.25	u	MG/KG	0.25	1.0
		Antimony, Total	0.83	u	MG/KG	0.83	1.0
		Selenium, Total	0.42	u	MG/KG	0.42	1.0
		Silicon, Total	53.1		MG/KG	8.3	1.0
		Vanadium, Total	4.2	u	MG/KG	4.2	1.0
		Zinc, Total	1.7	u	MG/KG	1.7	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/12/08

CLIENT: WC-HANFORD RC-029 K1309 LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J17FT6	Silver, Total	2.5	u	MG/KG	2.5	3.0
		Aluminum, Total	6410		MG/KG	49.6	3.0
		Arsenic, Total	2.5		MG/KG	2.5	3.0
		Boron, Total	24.8	u	MG/KG	24.8	3.0
		Barium, Total	58.1		MG/KG	49.6	3.0
		Beryllium, Total	1.2	u	MG/KG	1.2	3.0
		Calcium, Total	7920		MG/KG	1240	3.0
		Cadmium, Total	1.2	u	MG/KG	1.2	3.0
		Cobalt, Total	12.4	u	MG/KG	12.4	3.0
		Chromium, Total	11.1		MG/KG	2.5	3.0
		Copper, Total	16.3		MG/KG	6.2	3.0
		Iron, Total	18400		MG/KG	24.8	3.0
		Mercury, Total	0.03	u	MG/KG	0.03	1.0
		Potassium, Total	967		MG/KG	413	1.0
		Magnesium, Total	4450		MG/KG	1240	3.0
		Manganese, Total	280		MG/KG	3.7	3.0
		Molybdenum, Total	24.8	u	MG/KG	24.8	3.0
		Sodium, Total	196		MG/KG	1.7	1.0
		Nickel, Total	10.8		MG/KG	9.9	3.0
		Lead, Total	4.3		MG/KG	0.74	3.0
		Antimony, Total	2.5	u	MG/KG	2.5	3.0
		Selenium, Total	1.2		MG/KG	1.2	3.0
		Silicon, Total	172		MG/KG	24.8	3.0
		Vanadium, Total	42.8		MG/KG	12.4	3.0
		Zinc, Total	37.4		MG/KG	5.0	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/12/08

CLIENT: WC-HANFORD RC-029 K1309

LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J17FT7	Silver, Total	2.5	u	MG/KG	2.5	3.0
		Aluminum, Total	9050		MG/KG	49.9	3.0
		Arsenic, Total	3.1		MG/KG	2.5	3.0
		Boron, Total	25.0	u	MG/KG	25.0	3.0
		Barium, Total	80.7		MG/KG	49.9	3.0
		Beryllium, Total	1.2	u	MG/KG	1.2	3.0
		Calcium, Total	8590		MG/KG	1250	3.0
		Cadmium, Total	1.2	u	MG/KG	1.2	3.0
		Cobalt, Total	12.5	u	MG/KG	12.5	3.0
		Chromium, Total	13.3		MG/KG	2.5	3.0
		Copper, Total	14.1		MG/KG	6.2	3.0
		Iron, Total	21000		MG/KG	25.0	3.0
		Mercury, Total	0.03	u	MG/KG	0.03	1.0
		Potassium, Total	1520		MG/KG	416	1.0
		Magnesium, Total	4930		MG/KG	1250	3.0
		Manganese, Total	323		MG/KG	3.7	3.0
		Molybdenum, Total	25.0	u	MG/KG	25.0	3.0
		Sodium, Total	218		MG/KG	1.7	1.0
		Nickel, Total	13.0		MG/KG	10.0	3.0
		Lead, Total	4.9		MG/KG	0.75	3.0
		Antimony, Total	2.5	u	MG/KG	2.5	3.0
		Selenium, Total	1.2	u	MG/KG	1.2	3.0
		Silicon, Total	184		MG/KG	25.0	3.0
		Vanadium, Total	44.7		MG/KG	12.5	3.0
		Zinc, Total	41.7		MG/KG	5.0	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/12/08

CLIENT: WC-HANFORD RC-029 K1309 LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J17FT8	Silver, Total	2.5	u	MG/KG	2.5	3.0
		Aluminum, Total	8920		MG/KG	50.6	3.0
		Arsenic, Total	3.5		MG/KG	2.5	3.0
		Boron, Total	25.3	u	MG/KG	25.3	3.0
		Barium, Total	82.6		MG/KG	50.6	3.0
		Beryllium, Total	1.3	u	MG/KG	1.3	3.0
		Calcium, Total	8480		MG/KG	1270	3.0
		Cadmium, Total	1.3	u	MG/KG	1.3	3.0
		Cobalt, Total	12.7	u	MG/KG	12.7	3.0
		Chromium, Total	13.8		MG/KG	2.5	3.0
		Copper, Total	14.0		MG/KG	6.3	3.0
		Iron, Total	21000		MG/KG	25.3	3.0
		Mercury, Total	0.03	u	MG/KG	0.03	1.0
		Potassium, Total	1530		MG/KG	422	1.0
		Magnesium, Total	5040		MG/KG	1270	3.0
		Manganese, Total	329		MG/KG	3.8	3.0
		Molybdenum, Total	25.3	u	MG/KG	25.3	3.0
		Sodium, Total	230		MG/KG	1.7	1.0
		Nickel, Total	13.1		MG/KG	10.1	3.0
		Lead, Total	4.3		MG/KG	0.76	3.0
		Antimony, Total	2.5	u	MG/KG	2.5	3.0
		Selenium, Total	1.3	u	MG/KG	1.3	3.0
		Silicon, Total	181		MG/KG	25.3	3.0
		Vanadium, Total	44.0		MG/KG	12.7	3.0
		Zinc, Total	42.0		MG/KG	5.1	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/12/08

CLIENT: WC-HANFORD RC-029 K1309 LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J17FT9	Silver, Total	2.4	u	MG/KG	2.4	3.0
		Aluminum, Total	5360		MG/KG	48.2	3.0
		Arsenic, Total	2.4	u	MG/KG	2.4	3.0
		Boron, Total	24.1	u	MG/KG	24.1	3.0
		Barium, Total	48.2	u	MG/KG	48.2	3.0
		Beryllium, Total	1.2	u	MG/KG	1.2	3.0
		Calcium, Total	5910		MG/KG	1200	3.0
		Cadmium, Total	1.2	u	MG/KG	1.2	3.0
		Cobalt, Total	12.0	u	MG/KG	12.0	3.0
		Chromium, Total	9.4		MG/KG	2.4	3.0
		Copper, Total	14.2		MG/KG	6.0	3.0
		Iron, Total	21800		MG/KG	24.1	3.0
		Mercury, Total	0.03	u	MG/KG	0.03	1.0
		Potassium, Total	805		MG/KG	402	1.0
		Magnesium, Total	4040		MG/KG	1200	3.0
		Manganese, Total	287		MG/KG	3.6	3.0
		Molybdenum, Total	24.1	u	MG/KG	24.1	3.0
		Sodium, Total	173		MG/KG	1.6	1.0
		Nickel, Total	9.7		MG/KG	9.6	3.0
		Lead, Total	2.7		MG/KG	0.72	3.0
		Antimony, Total	2.4	u	MG/KG	2.4	3.0
		Selenium, Total	1.2	u	MG/KG	1.2	3.0
		Silicon, Total	190		MG/KG	24.1	3.0
		Vanadium, Total	58.5		MG/KG	12.0	3.0
		Zinc, Total	40.5		MG/KG	4.8	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/12/08

CLIENT: WC-HANFORD RC-029 K1309 LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J17FV0	Silver, Total	2.4	u	MG/KG	2.4	3.0
		Aluminum, Total	4440		MG/KG	48.5	3.0
		Arsenic, Total	2.4		MG/KG	2.4	3.0
		Boron, Total	24.3	u	MG/KG	24.3	3.0
		Barium, Total	48.5	u	MG/KG	48.5	3.0
		Beryllium, Total	1.2	u	MG/KG	1.2	3.0
		Calcium, Total	5180		MG/KG	1210	3.0
		Cadmium, Total	1.2	u	MG/KG	1.2	3.0
		Cobalt, Total	12.1	u	MG/KG	12.1	3.0
		Chromium, Total	8.5		MG/KG	2.4	3.0
		Copper, Total	13.6		MG/KG	6.1	3.0
		Iron, Total	20300		MG/KG	24.3	3.0
		Mercury, Total	0.03	u	MG/KG	0.03	1.0
		Potassium, Total	636		MG/KG	404	1.0
		Magnesium, Total	3880		MG/KG	1210	3.0
		Manganese, Total	265		MG/KG	3.6	3.0
		Molybdenum, Total	24.3	u	MG/KG	24.3	3.0
		Sodium, Total	164		MG/KG	1.6	1.0
		Nickel, Total	9.7	u	MG/KG	9.7	3.0
		Lead, Total	2.2		MG/KG	0.73	3.0
		Antimony, Total	2.4	u	MG/KG	2.4	3.0
		Selenium, Total	1.2	u	MG/KG	1.2	3.0
		Silicon, Total	219		MG/KG	24.3	3.0
		Vanadium, Total	49.9		MG/KG	12.1	3.0
		Zinc, Total	36.7		MG/KG	4.9	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/12/08

CLIENT: WC-HANFORD RC-029 K1309 LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J17FV1	Silver, Total	2.4	u	MG/KG	2.4	3.0
		Aluminum, Total	4880		MG/KG	47.0	3.0
		Arsenic, Total	2.4	u	MG/KG	2.4	3.0
		Boron, Total	23.5	u	MG/KG	23.5	3.0
		Barium, Total	47.0	u	MG/KG	47.0	3.0
		Beryllium, Total	1.2	u	MG/KG	1.2	3.0
		Calcium, Total	7260		MG/KG	1180	3.0
		Cadmium, Total	1.2	u	MG/KG	1.2	3.0
		Cobalt, Total	11.8	u	MG/KG	11.8	3.0
		Chromium, Total	7.9		MG/KG	2.4	3.0
		Copper, Total	12.4		MG/KG	5.9	3.0
		Iron, Total	17000		MG/KG	23.5	3.0
		Mercury, Total	0.03	u	MG/KG	0.03	1.0
		Potassium, Total	716		MG/KG	392	1.0
		Magnesium, Total	3850		MG/KG	1180	3.0
		Manganese, Total	250		MG/KG	3.5	3.0
		Molybdenum, Total	23.5	u	MG/KG	23.5	3.0
		Sodium, Total	168		MG/KG	1.6	1.0
		Nickel, Total	9.4	u	MG/KG	9.4	3.0
		Lead, Total	2.8		MG/KG	0.71	3.0
		Antimony, Total	2.4	u	MG/KG	2.4	3.0
		Selenium, Total	1.2	u	MG/KG	1.2	3.0
		Silicon, Total	178		MG/KG	23.5	3.0
		Vanadium, Total	40.1		MG/KG	11.8	3.0
		Zinc, Total	32.5		MG/KG	4.7	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/12/08

CLIENT: WC-HANFORD RC-029 K1309 LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0330-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	4.0 u	MG/KG	4.0	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Boron, Total	0.50 u	MG/KG	0.50	1.0
		Barium, Total	0.10 u	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	4.0 u	MG/KG	4.0	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.20 u	MG/KG	0.20	1.0
		Chromium, Total	0.20 u	MG/KG	0.20	1.0
		Copper, Total	0.20 u	MG/KG	0.20	1.0
		Iron, Total	4.5 u	MG/KG	4.5	1.0
		Potassium, Total	49.3 u	MG/KG	49.3	1.0
		Magnesium, Total	2.5 u	MG/KG	2.5	1.0
		Manganese, Total	0.04 u	MG/KG	0.04	1.0
		Molybdenum, Total	0.30 u	MG/KG	0.30	1.0
		Sodium, Total	24.3	MG/KG	2.0	1.0
		Nickel, Total	0.20 u	MG/KG	0.20	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.30 u	MG/KG	0.30	1.0
		Selenium, Total	0.60 u	MG/KG	0.60	1.0
		Silicon, Total	4.0 u	MG/KG	4.0	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	0.60 u	MG/KG	0.60	1.0
BLANK1	08C0151-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 09/12/08

CLIENT: WC-HANFORD RC-029 K1309

LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	J17PT6	Silver, Total	3.7	2.5 u	4.1	90.2	3.0
		Aluminum, Total	7420	6410	164	619.2*	3.0
		Arsenic, Total	155	2.5	164	93.1	3.0
		Boron, Total	74.9	24.8 u	82.0	91.3	3.0
		Barium, Total	205	58.1	164	89.6	3.0
		Beryllium, Total	4.0	1.2 u	4.1	97.6	3.0
		Calcium, Total	10500	7920	2050	125.9	3.0
		Cadmium, Total	3.9	1.2 u	4.1	95.1	3.0
		Cobalt, Total	45.3	12.4 u	41.0	110.5	3.0
		Chromium, Total	28.3	11.1	16.4	104.9	3.0
		Copper, Total	34.6	16.3	20.5	89.3	3.0
		Iron, Total	19100	18400	82.0	930.5*	3.0
		Mercury, Total	0.17	0.03u	0.16	108.2	1.0
		Potassium, Total	2830	967	2050	91.0	1.0
		Magnesium, Total	6740	4450	2050	111.5	3.0
		Manganese, Total	314	280	41.0	82.0*	3.0
		Molybdenum, Total	75.2	24.8 u	82.0	91.7	3.0
		Sodium, Total	2120	196	2050	94.0	1.0
		Nickel, Total	52.0	10.8	41.0	100.5	3.0
		Lead, Total	42.2	4.3	41.0	92.4	3.0
		Antimony, Total	19.3	2.5 u	41.0	47.1	3.0
		Selenium, Total	133	1.2	164	80.3	3.0
		Silicon, Total	230	172	82.0	70.9	3.0
		Vanadium, Total	83.4	42.8	41.0	99.0	3.0
		Zinc, Total	77.2	37.4	41.0	97.1	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 09/12/08

CLIENT: WC-HANFORD RC-029 K1309 LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	J17FT6	Silver, Total	2.5 u	2.4 u	NC	3.0
		Aluminum, Total	6410	6620	3.2	3.0
		Arsenic, Total	2.5	2.9	14.8	3.0
		Boron, Total	24.8 u	24.4 u	NC	3.0
		Barium, Total	58.1	49.7	15.6	3.0
		Beryllium, Total	1.2 u	1.2 u	NC	3.0
		Calcium, Total	7920	8360	5.5	3.0
		Cadmium, Total	1.2 u	1.2 u	NC	3.0
		Cobalt, Total	12.4 u	12.2 u	NC	3.0
		Chromium, Total	11.1	11.5	3.5	3.0
		Copper, Total	16.3	14.8	9.6	3.0
		Iron, Total	18400	18100	1.5	3.0
		Mercury, Total	0.03u	0.03u	NC	1.0
		Potassium, Total	967	988	2.1	1.0
		Magnesium, Total	4450	4650	4.3	3.0
		Manganese, Total	280	267	4.8	3.0
		Molybdenum, Total	24.8 u	24.4 u	NC	3.0
		Sodium, Total	196	178	10.0	1.0
		Nickel, Total	10.8	10.9	0.92	3.0
		Lead, Total	4.3	4.0	7.2	3.0
		Antimony, Total	2.5 u	2.4 u	NC	3.0
		Selenium, Total	1.2	1.4	15.4	3.0
		Silicon, Total	172	157	8.6	3.0
		Vanadium, Total	42.8	42.5	0.70	3.0
		Zinc, Total	37.4	36.1	3.5	3.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 09/12/08

CLIENT: WC-HANFORD RC-029 K1309 LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0330-LC1	Silver, LCS	48.3	50.0	MG/KG	96.6
		Aluminum, LCS	478	500	MG/KG	95.6
		Arsenic, LCS	926	1000	MG/KG	92.6
		Boron, LCS	454	500	MG/KG	90.8
		Barium, LCS	475	500	MG/KG	94.9
		Beryllium, LCS	24.2	25.0	MG/KG	96.8
		Calcium, LCS	2430	2500	MG/KG	97.2
		Cadmium, LCS	23.7	25.0	MG/KG	94.8
		Cobalt, LCS	240	250	MG/KG	96.1
		Chromium, LCS	48.9	50.0	MG/KG	97.8
		Copper, LCS	121	125	MG/KG	96.6
		Iron, LCS	485	500	MG/KG	97.0
		Potassium, LCS	2280	2500	MG/KG	91.2
		Magnesium, LCS	2360	2500	MG/KG	94.2
		Manganese, LCS	73.0	75.0	MG/KG	97.3
		Molybdenum, LCS	474	500	MG/KG	94.9
		Sodium, LCS	2330	2500	MG/KG	93.1
		Nickel, LCS	193	200	MG/KG	96.4
		Lead, LCS	239	250	MG/KG	95.6
		Antimony, LCS	274	300	MG/KG	91.4
		Selenium, LCS	882	1000	MG/KG	88.2
		Silicon, LCS	163	500	MG/KG	32.6
		Vanadium, LCS	241	250	MG/KG	96.2
		Zinc, LCS	96.2	100	MG/KG	96.2
LCS1	08C0151-LC1	Mercury, LCS	4.9	4.7	MG/KG	103.5

Lionville Laboratory Incorporated

Logbook #: 482

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0330
Date/Time Initiated: 9/10/08 1295
Date/Time Completed: 9/10/08 2030
Analyst(s): MWH
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: See backlog

(Digested) / Undigested (circle one)
Balance #: B20
Balance Cal Verif: (Y) NA
Hot Plate Temp: 92°

TMW

Method: SW (circle)
3005A
3010A
3015
3020A
7060A (As/Se)
7760A (Ag)
(3050B)
3051
CLP ILMO3.0
ILMO4.0

DW 200.7 (1994)
200.9
3113B
MCAWW 200.7 (1982)
200 (AA)
206.2 (As/Se)
SM 3030C (NC)
Other Tyler

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
0808L133-001		1.21gm	100ml	<2	TO	coarse	Ottawa sand	N/A	
002		1.28gm				fine	brown dirt	rocks	
002R		1.26gm							
002S	1.0ml	1.26gm							
003		1.30gm						rocks + veget.	
004		1.23gm							
005		1.26gm							
006		1.27gm							
007		1.26gm						rocks	
008		1.25gm						rocks + veget.	
009		1.23gm							
010		1.24gm							
0808L138-001		1.20gm				coarse	Ottawa sand	N/A	
002		1.22gm				fine	brown dirt	rock + veget.	
002R		1.24gm							
002S	1.0ml	1.23gm							
003		1.23gm						rocks	
004		1.21gm							
005		1.26gm				coarse			
006		1.25gm							
007		1.30gm							
0820330-MB1		1.0gm					boiling chips	N/A	
LCS	1.0ml	1.0gm							

MW 9/10/08

Spiking IDs:
MS #: 8100-04-01
02
03
6072-78-07
LCS #: 08
09
10
11

Reagent IDs:
HNO_3 G07057
HCL G15040
H_2O_2 G15A18
1:1 HNO_3 9789-083-08
1:1 HCL

File ID#: IC033001
IC033002

LIMS Transfer: (Y) N

UPLOADED

Data Review By/Date:
RMP, 09/11/08

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 498

Analyst: TM
Date 9/2/08
Start Time/Temp: 1610 | 93°
End Time/Temp: 1640 | 97°

Instrument ID H63.1
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0151
Worksheet: HG-090301109
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes N/A No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	E			10mL	50mL	
0.2 µg/L	JC	0.100				
1.0	L53	0.500				
2.0	KX	1.000				
5.0	4901	2.500				
10.0	1721	5.000				
ICV	6J	0.125	2.5			
CCV	205	0.250	5.0			
ICB/CCB	X0					90.50
MB1	8			0.30		PBS151 100.0
LC1	H3	*	*	0.37		LCSS151
0808L132-001	676			0.40		98.38
001R	3VG			0.39		
001S	F8	0.500	1.0	0.40		
002	P5			0.35		99.6
003	2V			0.33		99.51
004	LV			0.35		99.6
005	AN			0.30		99.31
006	3C			0.31		99.6
007	871			0.38		99.77
008	2B			0.35		99.99
009	857			0.33		99.68
010	2I			0.40	R	99.63
011	4T			0.34		98.61
012	BG			0.36		99.34
013	PC			0.38		99.69
0808L138-001	511			0.31		99.9

Standard:	ID	Prep Date/Time
ICAL/MS	R1 6072-78-14B	9/2/08 1030
ICV/CCV/LCS	US 6072-78-15A	

Reviewed By/Date: [signature] 9/5/08

see book # 9368 for std traceability information

Soil LCS =US Metals in soil No.3; True Value = 4.70 mg/Kg
Catalogue #1RM-021, Lot # E021

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

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 498

Analyst: TLB
Date 9/2/08
Start Time/Temp: 8:45
End Time/Temp: See page 007

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

Prep Batch: 08L0151
Worksheet: HG-090301|09
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes NA No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
0808L138-002	B14			0.32	50mL	99.1
002R	500			0.38		99.1
002S	Z	0.500	1.0	0.32		99.1
003	303			0.34		97.6
004	SE			0.35		97.9
005	CT			0.38		98.8
006	3H			0.36		98.9
007	B32			0.38		98.1

an 9/2/08

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	See page 007	

Reviewed By/Date: [signature] 9/5/08

see book # 936 for std traceability information

Soil LCS =US Metals in soil No.3; True Value = 4.70 mg/Kg
Catalogue #1RM-021, Lot # E021

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

ionville Laboratory Use Only

08081138

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI Lionville Laboratory Inc.

000000027

lient Washington Closure Hanford SAFA RC-029

t. Final Proj. Sampling Date

roject# ~~05471-1206-0116~~ 60049-001-001-0001 WE 8-29-08

roject Contact/Phone#

onville Laboratory Project Manager O. Johnson

: SW846 Del STD TAT 15 day

ate Rec'd 8-29-08 Date Due 9-13-08

	A	B	C	D	E	F
Refrigerator #	6	2	2	2	2	2
#/Type Container (Liquid / Solid)	1G	1G	1G	1G	1G	1G
Volume	60	250	250	250	1000	250
Preservatives	—	—	—	—	—	—
ANALYSES REQUESTED (ORGANIC) VOA						
BNA						
~~Pest/~~ PCB						
Herb						
(INORG) Metal						
CN						
Hex Chrom						
TOT TPH						
Lionville Laboratory Use Only	06244	06254 06084 UPCB				
				Met ①	ICP6	WE 9-4-08 ~~IPHC~~ ODRO

ATRIX ODES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	06244	06254 06084 UPCB					Met ①		ICP6		WE 9-4-08 ~~IPHC~~ ODRO		
001	J17FT5			Soil	8-29-08	1140	X	X					X						
002	6					1214	X	X	X				X		X		X		
003	7					1235	X	X	X				X		X		X		
004	8					1240	X	X	X				X		X		X		
005	9					1250	X	X	X				X		X		X		
006	10					1300	X	X	X				X		X		X		
007	11					1340	X	X	X										

pecial Instructions:

Met ① = HSL + B, Mo, Si
NO ~~Hg~~ WE 8-29-08
TL

Special Instructions:

9-4-08 1. Lab report Diesel and motor Oil, cancel IPHC add ODRO per client

2.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
		8/29/08	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-029-050 | Page 1 of 2

lector: WELCH-KOELLING	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 8C	Data Turnaround: 15 Days		
ject Designation: Remaining Sites Confirmation Sampling - Soil	Sampling Location: ~~128-H-3~~ BH 8/27/08 128-H-2		SAF No.: RC-029
Chest No.: ERC-96-069	Field Logbook No.: EL-1601-2	COA: ~~C100H4A000~~ BH 8/27/08	Method of Shipment: FedEx
ipped To: EBERLINE SERVICES ~~LIONVILLE~~	Offsite Property No.: A080320		Bill of Lading/Air Bill No.: SCCOSPC

000000028

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	D None	E Cool 4C	C Cool 4C	B Cool 4C	A Cool 4C	F Cool 4C		
Type of Container	P	G/P	G/P	G/P	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	1000mL	60mL	250mL	120mL	250mL	250mL	60mL	250mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1		

Sample No.	Matrix *	Sample Date	Sample Time										
7FT5 ✓	SOIL	8/27/08	1140			X			X	X			
7FT6 ✓	SOIL	8/27/08	1214			X	X	X	X	X	X		
7FT7	SOIL	8/27/08	1235			X	X	X	X	X	X		
7FT8	SOIL	8/27/08	1240			X	X	X	X	X	X		
7FT9	SOIL	8/27/08	1250			X	X	X	X	X	X		

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	8/27/08 1352	BHudson BHudson	8/27/08 1352
BHUDSON BHudson	8/27/08 1810	1060 43C	8/27/08 1810
060/3C J.E. Bernhard	8-28-08 0900	Fed Ex	
[signature]	8/29/08 0945	[signature]	8-29-08 0945

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Gross Alpha & Gross Beta
(2) Americium-241; Nickel-63; Isotopic Plutonium (Plutonium-238, Plutonium-239/240); Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Total Uranium
(3) ICP Metals - 6010TR (Client List (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-029-030

lector: WELCH-KOELLING	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 8C	Data Turnaround: 15 Days		
ject Designation: Remaining Sites Confirmation Sampling - Soil	Sampling Location: ~~128-H-2~~ 128-H-2 C128H21W00		SAF No.: RC-029
Chest No.: RC-96-069	Field Logbook No.: EL-1601-2 BH 8/27/08	COA ~~C128H31W00~~ ~~C100H4A000~~ BH 8/27/08	Method of Shipment: FedEx
pped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A080320		Bill of Lading/Air Bill No.: SEE OSPC

000000029

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	P	G/P	G/P	G/P	aG	aG	G	G			
No. of Container(s)	1	1	1	1	1	1	1	1			
Volume	1000mL	60mL	250mL	120mL	250mL	250mL	60mL	250mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1			
Sample No.	Matrix *	Sample Date	Sample Time								
7FV0	SOIL	8/27/08	1300			X	X	X	X	X	X
7FV1	SOIL	8/27/08	1340			X	X	X	X	X	X
7FV2	SOIL										
7FV3	SOIL										
7FV4	SOIL										

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
nquished By/Removed From: [illegible]	8/27/08 1352	Received By/Stored In: BILL HUDSON Bill Hudson	8/27/08 1352
nquished By/Removed From: HUDSON Bill Hudson	8/27/08 1810	Received By/Stored In: 1060 #3C	8/27/08 1810
nquished By/Removed From: 1060 13C J.E. Bernhard	8-28-08 0900	Received By/Stored In: Fed Ex	
nquished By/Removed From: [illegible]	8/29/08 0945	Received By/Stored In: [illegible]	8-29-08 0945
nquished By/Removed From		Received By/Stored In	
nquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Gross Alpha & Gross Beta
(2) Americium-241; Nickel-63; Isotopic Plutonium (Plutonium-238, Plutonium-239/240); Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Total Uranium
(3) ICP Metals - 6010TR (Client List (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

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

CH-EE-011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: Washington Closure Hanford

Project/SAF/SOW/Release #: RC-029

Date: 8/29/08

LvLI Batch #: 08081138

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7785 0271 1126
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.1°	°C	Cooler # ERC-96069 AFS-04-121
How was the temperature taken?	☑ IR 2-3	☐ 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 & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI 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 _____

LVLI LIONVILLE LABORATORY INC.

SR-002-B.doc

RECEIVED
SEP 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FT5						
% SOLIDS	001	S	08L%S071	08/27/08	09/03/08	09/03/08
% SOLIDS	001 REP	S	08L%S071	08/27/08	09/03/08	09/03/08
J17FT6						
% SOLIDS	002	S	08L%S071	08/27/08	09/03/08	09/03/08
CHROMIUM VI	002	S	08LVI061	08/27/08	09/04/08	09/04/08
J17FT7						
% SOLIDS	003	S	08L%S071	08/27/08	09/03/08	09/03/08
CHROMIUM VI	003	S	08LVI061	08/27/08	09/04/08	09/04/08
J17FT8						
% SOLIDS	004	S	08L%S071	08/27/08	09/03/08	09/03/08
CHROMIUM VI	004	S	08LVI061	08/27/08	09/04/08	09/04/08
J17FT9						
% SOLIDS	005	S	08L%S071	08/27/08	09/03/08	09/03/08
CHROMIUM VI	005	S	08LVI061	08/27/08	09/04/08	09/04/08
CHROMIUM VI	005 REP	S	08LVI061	08/27/08	09/04/08	09/04/08
CHROMIUM VI	005 MS	S	08LVI061	08/27/08	09/04/08	09/04/08
CHROMIUM VI	005 MSD	S	08LVI061	08/27/08	09/04/08	09/04/08
J17FV0						
% SOLIDS	006	S	08L%S071	08/27/08	09/03/08	09/03/08
CHROMIUM VI	006	S	08LVI061	08/27/08	09/04/08	09/04/08
J17FV1						
% SOLIDS	007	S	08L%S071	08/27/08	09/03/08	09/03/08
CHROMIUM VI	007	S	08LVI061	08/27/08	09/04/08	09/04/08

LAB QC:

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1309

DATE RECEIVED: 08/29/08 LVL LOT # :0808L138

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM VI	MB1	S	08LVI061	N/A	09/04/08	09/04/08
CHROMIUM VI	MB1 BS	S	08LVI061	N/A	09/04/08	09/04/08
CHROMIUM VI	MB1 BSD	S	08LVI061	N/A	09/04/08	09/04/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-029 K1309
LVL#: 0808L138

W.O.#: 60049-001-001-0001-00
Date Received: 08-29-08

INORGANIC NARRATIVE

1. This narrative covers the analyses of 7 soil samples.

2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary.

   LvLI 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. LvLI 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.

4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy.

5. The method blank for Chromium VI was within the method criteria.

6. The Laboratory Control Samples (LCS) for Chromium VI were within the laboratory control limits.

7. The matrix spike recoveries for Chromium VI 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 Incorporated

9/15/08
Date

njp\i08-138

The results presented in this report relate to the analytical testing and conditions of the samples upon 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.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	__ D2216-80		
% Moisture	__ D2216-80		__ ILMO4.0 (e)
% Solids	✓ D2216-80		__ ILMO4.0 (e)
% Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Chromium VI		✓ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		__ 1110(mod) __ 9045C	
Cyanide, Total		__ 9010B	__ ILMO4.0 (e)
Cyanide, Reactive		__ Section 7.3/9014	
Halides, Extractable Organic		__ 9020B	__ EPA 600/4/84-008
Halides, Total		__ 9020B	__ EPA 600/4/84-008
EP Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		__ 1010	
Oil & Grease		__ 9071A	
Carbon, Total Organic		__ 9060	__ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	__ D240-87(mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		__ 9071	__ EPA 418.1
pH, Soil		__ 9045C	
Sulfide, Reactive		__ Section 7.3/9030B	
Sulfide		__ 9030B(mod)	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Preparation Leach		__ 1312	
Paint Filter		__ 9095A	

Other: **Method:**

Other: **Method**

L-WI-034/B-01/01

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).

b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/10/08

CLIENT: WC-HANFORD RC-029 K1309 LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J17FT5	% Solids	100	%	0.01	1.0
-002	J17FT6	% Solids	99.2	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
-003	J17FT7	% Solids	97.7	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
-004	J17FT8	% Solids	97.9	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
-005	J17FT9	% Solids	98.8	%	0.01	1.0
		Chromium VI	0.20	MG/KG	0.20	1.0
-006	J17FV0	% Solids	98.9	%	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
-007	J17FV1	% Solids	98.1	%	0.01	1.0
		Chromium VI	0.22	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/10/08

CLIENT: WC-HANFORD RC-029 K1309

LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LVI061-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 09/10/08

CLIENT: WC-HANFORD RC-029 K1309

LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-005	J17FT9	Soluble Chromium VI	4.0	0.20	4.0	92.9	1.0
		Insoluble Chromium VI	1460	0.20	1240	117.3	100
BLANK10	08LVI061-MB1	Soluble Chromium VI	3.8	0.20u	4.0	96.2	1.0
		Insoluble Chromium VI	1450	0.20u	1260	115.1	100

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 09/10/08

CLIENT: WC-HANFORD RC-029 K1309

LVL LOT #: 0808L138

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J17FT5	% Solids	100	99.9	0.040	1.0
-005REP	J17FT9	Chromium VI	0.20	0.20u	5.1	1.0

ionville Laboratory Use Only

08081138

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

lient Washington Closure Hyford SAFM BC-029

t. Final Proj. Sampling Date

oject# ~~05471-606-0116~~ 60049-601-001-0001 WC 8-29-08

oject Contact/Phone#

onville Laboratory Project Manager O. Johnson

c SW846 Del STD TAT 15 day

ate Rec'd 8-29-08 Date Due 9-13-08

		A	B	C					D		E		F			
Refrigerator #		6	2	2					2		2		2			
#/Type Container	Liquid	1G	1G	1G					1G		1G		1G			
#/Type Container	Solid															
Volume		60	250	250					250		1000		250			
Preservatives		—	—	—					—		—		—			
ANALYSES REQUESTED	ORGANIC	VOA	BNA	~~Pest~~/PCB	Herb				INORG Metal	CN	HEM SGT-HEM		TOT TPH			

ATRIX ODES: Soil; E- Sediment; D- Solid; - Sludge; - Water; - Oil; - Air; S- Drum Solids; L- Drum Liquids; EP/TCLP Leachate; I- Wipe; - Other; Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624H	0625H	0608H PCB				Met①		TCR6		WC 9-4-08 IPHC	ODRO		
001	J17FT5			Soil	8-27-08	1140	X	X					X							
002	6					1214	X	X	X				X		X		X			
003	7					1235	X	X	X				X		X		X			
004	8					1240	X	X	X				X		X		X			
005	9					1250	X	X	X				X		X		X			
006	10					1300	X	X	X				X		X		X			
007	11					1340	X	X	X											

Special Instructions:

Met① = HSL + B, Mo, Si
NO ~~HG~~ WC 8-29-08
TL

Special Instructions:

9-4-08 1. Lab report Diesel and motor Oil, cancel IPHC add ODRO per client
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
		8/29/08	0945

Relinquished by	Received by	Date	Time

Relinquished	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000010

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-050	Page 1 of 4
Collector: WELCH-KOELLING	Company Contact: Matt Perrott; Telephone No.: 372-9088	Project Coordinator: KESSNER, JH	Price Code: 8C; Data Turnaround: 15 Days
Project Designation: Remaining Sites Confirmation Sampling - Soil	Sampling Location: ~~128-H-3~~ BH 8/27/08 128-H-2	SAF No.: RC-029	
Chest No.: ERC-96-069	Field Logbook No.: EL-1601-2; COA: ~~C100H4A000~~ C128H5000 BH 8/27/08	Method of Shipment: FedEx	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080320	Bill of Lading/Air Bill No.: SCCOSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	D None	E Cool 4C	C Cool 4C	B Cool 4C	A Cool 4C	F Cool 4C		
Type of Container	P	G/P	G/P	G/P	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	1000mL	250mL	250mL	120mL	250mL	250mL	60mL	250mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1		

Sample No.	Matrix *	Sample Date	Sample Time										
17FT5	SOIL	8/27/08	1140			X			X	X			
17FT6	SOIL	8/27/08	1214			X	X	X	X	X	X		
17FT7	SOIL	8/27/08	1235			X	X	X	X	X	X		
17FT8	SOIL	8/27/08	1240			X	X	X	X	X	X		
17FT9	SOIL	8/27/08	1250			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	D. W. Welch-Koelling	8/27/08 1352	BHudson BHudson	8/27/08 1352
Relinquished By/Removed From	BHudson BHudson	8/27/08 1810	1060 #3C	8/27/08 1810
Relinquished By/Removed From	1060/3C J.E. Bernhard	8-28-08 0900	Fed Ex	
Relinquished By/Removed From		8/29/08 0945		8-29-08 0945
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

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Gross Alpha & Gross Beta
(2) Americium-241; Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Total Uranium
(3) ICP Metals - 6010TR (Client List {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

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

/CH-EE-011

000000011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-029-050 | Page 2 of 2

lector WELCH-KOELLING	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 8C	Data Turnaround: 15 Days		
ject Designation: Remaining Sites Confirmation Sampling - Soil	Sampling Location: ~~128-H-3~~ 128-H-2 C128H21W00		SAF No.: RC-029
Chest No.: 13 RC-96-069	Field Logbook No.: EL-1601-2 BH 8/27/08	COA ~~C128H31W00~~ ~~C100H4A000~~ BH 8/27/08	Method of Shipment: FedEx
ipped To: EBERLINE SERVICES, JONVILLE	Offsite Property No.: A080320		Bill of Lading/Air Bill No.: SEE OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

Preservation	None	None	D None	E Cool 4C	C Cool 4C	B Cool 4C	A Cool 4C	F Cool 4C		
Type of Container	P	G/P	G/P	G/P	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	1000mL	60mL	250mL	120mL	250mL	250mL	60mL	250mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	Chromium Hex - 7196	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1		
Sample No.	Matrix *	Sample Date	Sample Time								
7FV0	SOIL	8/27/08	1300			X	X	X	X	X	X
7FV1	SOIL	8/27/08	1340			X	X	X	X	X	X
7FV2	SOIL										
7FV3	SOIL										
7FV4	SOIL										

CHAIN OF POSSESSION	Sign/Print Names		
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	8/27/08 1352	BILL HUDSON Bill Hudson	8/27/08 1352
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
HUDSON Bill Hudson	8/27/08 1810	1060 #3C	8/27/08 1810
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
1060 13C S.E. Bernard	8-28-08 0900	Fed Ex	
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	8/29/08 0945	[illegible]	8-29-08 0945
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Gross Alpha & Gross Beta
(2) Americium-241; Nickel-63; Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Total Uranium
(3) ICP Metals - 6010TR (Client List {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000012

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: Washington Closure Hanford Date: 8/29/08

Project/SAF/SOW/Release #: RC-029

LvLI Batch #: 08081138 Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7785 0271 1126
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.1°	°C	Cooler # ERC-96069 AFS-04-121
How was the temperature taken?	☑ IR 2-3	☐ 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 & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI 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 _____

LVLI LIONVILLE LABORATORY INC.