0078871

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

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 10/1/08
INITIAL/DATE

COMMENTS:

SDG K1316 SAF RC-029

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: 100-H-3

RECEIVED
OCT 08 2008
EDMC

LIONVILLE LABORATORY INC.

30 September 2008

RECEIVED OCT 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 #	0809L021
SDG #	K1316
SAF #	RC-029
Date Received	9/04/08
# Samples	4
Matrix	SOIL
Volatiles	X
Semivolatiles	X
Pest/PCB	X
Glycols	
DRO/KRO/GRO	X
GC Alcohols	
Herbicides	
Metals	X
Inorganics	

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 Incorporated

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.
PCB ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1316

RECEIVED
OCT 2008

DATE RECEIVED: 09/04/08 LVL LOT # :0809L021

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FV6	002	S	08LE0423	09/02/08	09/09/08	09/12/08
J17FV7	003	S	08LE0423	09/02/08	09/09/08	09/12/08
J17FV7	003 MS	S	08LE0423	09/02/08	09/09/08	09/15/08
J17FV7	003 MSD	S	08LE0423	09/02/08	09/09/08	09/15/08
J17FV8	004	S	08LE0423	09/02/08	09/09/08	09/15/08
LAB QC:						
PBLKUL	MB1	S	08LE0423	N/A	09/09/08	09/12/08
PBLKUL	MB1 BS	S	08LE0423	N/A	09/09/08	09/12/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-029
LVL #: 0809L021
SDG/SAF # K1316 / RC-029

W.O. #: 60049-001-001-0001-00
Date Received: 09-04-2008

PCB

Three (3) soil samples were collected on 09-02-2008.

The samples and their associated QC samples were extracted on 09-09-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 09-12,15-2008. 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. One (1) of four (4) matrix spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08GC115) has been enclosed.
7. All initial calibrations associated with this data set were within acceptance criteria.

r:\group\data\2008\pest\tnu\0809-021cs2.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.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

9/19/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08GC115

Initiator: CAC
Date: 09/16/08
Client: WC Hanford RG029

Batch: 08DQL021
Samples: 003MSD
Method: SW846/MCAWW/CLP/

Parameter: OPCB
Matrix: SOIL
Prep Batch: 08LE0423

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)

recovery of Aroclor 1260 is high in MSD

okay in MS + BS

2. Known or Probable Causes(s)

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)

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

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 09/16/08 12:22

RFW Batch Number: 0809L021 Client: WC-HANFORD RC-029 K1316 Work Order: 60049001001 Page: 1

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	Cust ID:	J17FV6	J17FV7	J17FV7	J17FV7	J17FV8	PBLKUL
Sample Information	RFW#:	002	003	003 MS	003 MSD	004	08LE0423-MB1
	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	67 %	64 %	76 %	84 %	88 %	69 %
	Decachlorobiphenyl	101 %	83 %	74 %	83 %	97 %	72 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		14 U	14 U	78 %	87 %	14 U	13 U
Aroclor-1221		14 U	14 U	14 U	14 U	14 U	13 U
Aroclor-1232		14 U	14 U	14 U	14 U	14 U	13 U
Aroclor-1242		14 U	14 U	14 U	14 U	14 U	13 U
Aroclor-1248		14 U	14 U	14 U	14 U	14 U	13 U
Aroclor-1254		14 U	14 U	14 U	14 U	54	13 U
Aroclor-1260		14 U	14 U	135 %	153 * %	54	13 U

	Cust ID:	PBLKUL BS
Sample Information	RFW#:	08LE0423-MB1
	Matrix:	SOIL
	D.F.:	1.00
	Units:	UG/KG
Surrogate:	Tetrachloro-m-xylene	86 %
	Decachlorobiphenyl	90 %
		fl
Aroclor-1016		80 %
Aroclor-1221		13 U
Aroclor-1232		13 U
Aroclor-1242		13 U
Aroclor-1248		13 U
Aroclor-1254		13 U
Aroclor-1260		102 %

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: 09/09/08 Extraction Batch No: 08LE0423 Analyst: MF Method: ****

Test: OPCB Cleanup Date: 09/11/08 Analyst: MF Client: WC-HANFORD RC-029 K1316

LIMS Report Date: 09/16/08 Solvent: DCM/SCETONE,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	% Solid	Vis H2O	C/D FACTOR	Sulfur Clean?
0809L021-	WC-HANFORD RC-029 K1316												
002	J17FV6		30.0	1.0		10		1.0	N	96.97		343.7	
003	J17FV7		30.0	1.0		10		1.0	N	96.99		343.7	
003 -S	J17FV7		30.0	1.0	1.0	10		1.0	N	96.99		343.7	
003 -T	J17FV7		30.0	1.0	1.0	10		1.0	N	96.99		343.7	
004	J17FV8		30.0	1.0		10		1.0	N	92.34		361.0	
0809L035-	WC-HANFORD RC-030 K1320												
001	J17H00		30.0	1.0		10		1.0	N	78.28		425.8	
001 -S	J17H00		30.0	1.0	1.0	10		1.0	N	78.28		425.8	
001 -T	J17H00		30.0	1.0	1.0	10		1.0	N	78.28		425.8	
002	J17H01		30.0	1.0		10		1.0	N	82.56		403.7	
0809L036-	WC-HANFORD RC-029 K1319												
001	J17FY5		30.0	1.0		10		1.0	N	98.31		339.1	
002	J17FY6		30.0	1.0		10		1.0	N	97.75		341.0	
002 -S	J17FY6		30.0	1.0	1.0	10		1.0	N	97.75		341.0	
002 -T	J17FY6		30.0	1.0	1.0	10		1.0	N	97.75		341.0	
08LE0423-MB1			30.0	1.0		10		1.0	N	100.00		333.3	
08LE0423-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 89916604

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

000000007

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 09/09/09 Extraction Batch No: 08LE0423 Analyst: MF Method: **** SOX 3540

Test: OPCB Cleanup Date: 09/11/08 Analyst: MF Client: WC-HANFORD RC-029 K1316

LIMS Report Date: 09/12/08 Solvent: DCM/SCETONE,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
0809L021-	WC-HANFORD RC-029 K1316										
002	J17FV6		30.0	1.0		10		1.0	N	96.97	343.7
003	J17FV7		30.0	1.0		10		1.0	N	96.99	343.7
003 -S	J17FV7		30.0	1.0	1.0	10		1.0	N	96.99	343.7
003 -T	J17FV7		30.0	1.0	1.0	10		1.0	N	96.99	343.7
004	J17FV8		30.0	1.0		10		1.0	N	92.34	361.0
0809L035-	WC-HANFORD RC-030 K1320										
001	J17H00		30.0	1.0		10		1.0	N	78.28	425.8
002	J17H01		30.0	1.0		10		1.0	N	82.56	403.7
002 -S	J17H01		30.0	1.0	1.0	10		1.0	N	82.56	403.7
002 -T	J17H01		30.0	1.0	1.0	10		1.0	N	82.56	403.7
0809L036-	WC-HANFORD RC-029 K1319										
001	J17FY5		30.0	1.0		10		1.0	N	98.31	339.1
002	J17FY6		30.0	1.0		10		1.0	N	97.75	341.0
002 -S	J17FY6		30.0	1.0	1.0	10		1.0	N	97.75	341.0
002 -T	J17FY6		30.0	1.0	1.0	10		1.0	N	97.75	341.0
08LE0423-MB1	PBLKUL		30.0	1.0		10		1.0	N	100.00	333.3
08LE0423-MB1 -S	PBLKUL		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 89916604

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
GC	[illegible]	9/12/08 0900	CZ	9/12/08 9:10	GC

000000008

Lionville Laboratory Use Only

0809L021

Custody Transfer Record/Lab Work Request

Page ____ of ____

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: Washington Closure Hanford AC 029

Est. Final Proj. Sampling Date: ____

Project#: 60049-001-001-0001-00

Project Contact/Phone#: ____

Lionville Laboratory Project Manager: Arlotta Johnson

PO: 5W846 Del: STD TAT: 15 days

Date Rec'd: 9-4-08 Date Due: 9-19-08

		A	B	C	D	E
Refrigerator #		6	3	3	3	3
#/Type Container	Liquid					
	Solid	1g	1g	1g	1g	1g
Volume	Solid	60	250	250	250	250
Preservatives		—	—	—	—	—
ANALYSES REQUESTED	ORGANIC: VOA					
	ORGANIC: BNA					
	ORGANIC: Pest/PCB					
	ORGANIC: Herb					
	INORG: Metal + Hg					
	INORG: CN					
	TPH					

Lionville Laboratory Use Only

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624H	0625H	PCB 0608H				Met①		ODRO				
001	J17FV5			S	9-2-08	0730	X	X	~~X~~	9/11/08			X						
002	J17FV6					0735	X	X	X				X		X				
003	J17FV7					0738	X	X	X				X		X				
004	J17FV8 *					0745	X	X	X				X		X				

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

Special Instructions: Run matrix QC

Met① = HSL + B, Mo, S; NOTL

Special Instructions:

* → 1. per client / Do Not analyze pieces of debris. "Focus of Soil".

9/4/08 3. lab report Diesel + Motor Oil

4.

5.

6.

Relinquished by	Received by	Date	Time
Ex	[signature]	9-4-08	0955

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000009

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-029-031

Collector: WEGATH - 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: 100-H-3		SAF No.: RC-029
Ice Chest No.: AFS-06-004	Field Logbook No.: EL-1601-2	COA: C100H3A000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A080344		Bill of Lading/Air Bill No.: see ospc

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	G/P	aG	aG	G	G						
No. of Container(s)	1	1	1	1	1						
Volume	250mL	250mL	250mL	60mL	250mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1						
Sample No. / Matrix * / Sample Date / Sample Time											
J17FV5 / SOIL / 9/2/08 / 0730	X		X	X							
J17FV6 / SOIL / 9/2/08 / 0735	X	X	X	X	X						
J17FV7 * / SOIL / 9/2/08 / 0738	X	X	X	X	X						
J17FV8 / SOIL / 9/2/08 / 0745	X	X	X	X	X						
~~J17FV9~~ BJH 9/2/08 / SOIL											

CHAIN OF POSSESSION 9/2/08

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
TOWLE/KOELLING	9/2/08 0810	BHUDSON	9/2/08 0810
BHUDSON	9/2/08 1610	1060 of 3C	9/2/08 1610
1060/3C	9/3/08 0925	MSTANKOVICH	9/3/08 0925
MSTANKOVICH	9/3/08 0925	FED EX	
FED EX	9.4.08 0955		9.4.08 0955

Sign/Print Names

SPECIAL INSTRUCTIONS

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

*J17FV8 - Do not analyze pieces of debris, focus on "soil". Thanx

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

BU

Matrix *: S=Soil, SB=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

WCH-EE-011

0100000000

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford Date: 9.4.08

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

LvLI Batch #: 0809L021 Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Yellow Ex		Airbill # 7980 0495 3(
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.7	°C	Cooler # AFS-06-004
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.

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1316

DATE RECEIVED: 09/04/08 LVL LOT # :0809L021

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FV5	001	S	08LVK169	09/02/08	N/A	09/11/08
J17FV5	001 MS	S	08LVK169	09/02/08	N/A	09/11/08
J17FV5	001 MSD	S	08LVK169	09/02/08	N/A	09/11/08
J17FV6	002	S	08LVK169	09/02/08	N/A	09/11/08
J17FV7	003	S	08LVK169	09/02/08	N/A	09/11/08
J17FV8	004	S	08LVK169	09/02/08	N/A	09/11/08
J17FV8	004 R1	S	08LVK169	09/02/08	N/A	09/11/08

LAB QC:

VBLKGI	MB1	S	08LVK169	N/A	N/A	09/11/08
VBLKGI	MB1 BS	S	08LVK169	N/A	N/A	09/11/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-029
LVL #: 0809L021
SDG/SAF # K1316/RC-029

W.O. #: 60049-001-001-0001-00
Date Received: 09-04-2008

GC/MS VOLATILE

Four (4) solid samples were collected on 09-02-2008.

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 09-11-2008.

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. Three (3) of twenty seven (27) surrogate recoveries were outside acceptance criteria. However, all reanalysis requirements were met with the analysis of the matrix spike and the reanalysis of sample J17FV8 on 09-11-2008.

4. Two (2) of seventy (70) matrix spike recoveries were outside acceptance criteria.

5. All blank spike recoveries were within acceptance criteria.

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

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

r:\group\data\2008\voa\tnu\0809-021cs2.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 19 pages.

LIONVILLE LABORATORY INC.

8. 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").

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

9/18/08
Date

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.

Volatiles by GC/MS, HSL List

Report Date: 09/16/08 11:05

RFW Batch Number: 0809L021 Client: WC-HANFORD RC-029 K1316 Work Order: 60049001001 Page: 1a

	Cust ID:	J17FV5	J17FV5	J17FV5	J17FV6	J17FV7	J17FV8
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	0.893	0.893	1.00	1.00	0.909	0.980
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Toluene-d8	112 %	109 %	112 %	110 %	110 %	118 %
	Bromofluorobenzene	121 %	122 %	124 * %	120 %	122 %	139 * %
	1,2-Dichloroethane-d4	90 %	93 %	89 %	84 %	89 %	90 %
		fl	fl	fl	fl	fl	fl
Chloromethane		9 U	84 %	88 %	10 U	9 U	11 U
Bromomethane		9 U	92 %	95 %	10 U	9 U	11 U
Vinyl Chloride		9 U	82 %	81 %	10 U	9 U	11 U
Chloroethane		9 U	98 %	95 %	10 U	9 U	11 U
Methylene Chloride		7 B	60 %	64 %	8 B	5 B	6 B
Acetone		9 U	186 %	169 %	10 U	9 U	11 U
Carbon Disulfide		4 U	99 %	100 %	5 U	5 U	6 U
1,1-Dichloroethene		4 U	102 %	103 %	5 U	5 U	6 U
1,1-Dichloroethane		4 U	96 %	97 %	5 U	5 U	6 U
1,2-Dichloroethene (total)		4 U	96 %	97 %	5 U	5 U	6 U
Chloroform		4 U	92 %	92 %	5 U	5 U	6 U
1,2-Dichloroethane		4 U	88 %	88 %	5 U	5 U	6 U
2-Butanone		9 U	172 %	151 %	10 U	9 U	11 U
1,1,1-Trichloroethane		4 U	84 %	85 %	5 U	5 U	6 U
Carbon Tetrachloride		4 U	82 %	82 %	5 U	5 U	6 U
Bromodichloromethane		4 U	97 %	96 %	5 U	5 U	6 U
1,2-Dichloropropane		4 U	102 %	102 %	5 U	5 U	6 U
cis-1,3-Dichloropropene		4 U	109 %	110 %	5 U	5 U	6 U
Trichloroethene		4 U	85 %	86 %	5 U	5 U	6 U
Dibromochloromethane		4 U	101 %	102 %	5 U	5 U	6 U
1,1,2-Trichloroethane		4 U	110 %	110 %	5 U	5 U	6 U
Benzene		4 U	100 %	100 %	5 U	5 U	6 U
Trans-1,3-Dichloropropene		4 U	106 %	106 %	5 U	5 U	6 U
Bromoform		4 U	99 %	100 %	5 U	5 U	6 U
4-Methyl-2-pentanone		9 U	122 %	124 %	10 U	9 U	11 U
2-Hexanone		9 U	155 %	147 %	10 U	9 U	11 U
Tetrachloroethene		4 U	84 %	85 %	5 U	5 U	6 U
1,1,2,2-Tetrachloroethane		4 U	151 * %	150 * %	5 U	5 U	6 U
Toluene		4 U	106 %	110 %	5 U	5 U	6 U

*= Outside of EPA CLP QC limits.

000000007

Cust ID:	J17FV5		J17FV5		J17FV5		J17FV6		J17FV7		J17FV8	
RFW#:	001		001 MS		001 MSD		002		003		004	
Chlorobenzene	4	U	105	%	108	%	5	U	5	U	6	U
Ethylbenzene	4	U	106	%	108	%	5	U	5	U	6	U
Styrene	4	U	111	%	113	%	5	U	5	U	6	U
Xylenes (total)	4	U	106	%	109	%	5	U	5	U	6	U
cis-1,2-dichloroethene	4	U	97	%	98	%	5	U	5	U	6	U
trans-1,2-dichloroethene	4	U	94	%	96	%	5	U	5	U	6	U

*= Outside of EPA CLP QC limits.

	Cust ID:	J17FV8	VBLKGI	VBLKGI BS
Sample Information	RFW#:	004	08LVK169-MB1	08LVK169-MB1
	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.04	1.00	1.00
	Units:	ug/Kg REPREP	ug/Kg	ug/Kg
Surrogate Recovery	Toluene-d8	124 %	99 %	101 %
	Bromofluorobenzene	163 * %	112 %	113 %
	1,2-Dichloroethane-d4	93 %	66 %	77 %
Chloromethane		11 U	10 U	64 %
Bromomethane		11 U	10 U	101 %
Vinyl Chloride		11 U	10 U	83 %
Chloroethane		11 U	10 U	95 %
Methylene Chloride		19 B	2 J	61 %
Acetone		11 U	10 U	69 %
Carbon Disulfide		6 U	5 U	101 %
1,1-Dichloroethene		6 U	5 U	105 %
1,1-Dichloroethane		6 U	5 U	93 %
1,2-Dichloroethene (total)		6 U	5 U	97 %
Chloroform		6 U	5 U	92 %
1,2-Dichloroethane		6 U	5 U	81 %
2-Butanone		11 U	10 U	86 %
1,1,1-Trichloroethane		6 U	5 U	84 %
Carbon Tetrachloride		6 U	5 U	84 %
Bromodichloromethane		6 U	5 U	95 %
1,2-Dichloropropane		6 U	5 U	96 %
cis-1,3-Dichloropropene		6 U	5 U	103 %
Trichloroethene		6 U	5 U	89 %
Dibromochloromethane		6 U	5 U	96 %
1,1,2-Trichloroethane		6 U	5 U	100 %
Benzene		6 U	5 U	98 %
Trans-1,3-Dichloropropene		6 U	5 U	97 %
Bromoform		6 U	5 U	90 %
4-Methyl-2-pentanone		11 U	10 U	90 %
2-Hexanone		11 U	10 U	88 %
Tetrachloroethene		6 U	5 U	90 %
1,1,2,2-Tetrachloroethane		6 U	5 U	117 %
Toluene		6 U	5 U	106 %

*= Outside of EPA CLP QC limits.

000000009

Cust ID:	J17FV8	VBLKGI	VBLKGI BS
RFW#:	004 REPREP	08LVK169-MB1	08LVK169-MB1

Chlorobenzene	6	U	5	U	105	%
Ethylbenzene	6	U	5	U	105	%
Styrene	6	U	5	U	110	%
Xylenes (total)	6	U	5	U	107	%
cis-1,2-dichloroethene	6	U	5	U	96	%
trans-1,2-dichloroethene	6	U	5	U	97	%

*= Outside of EPA CLP QC limits.

000000010

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17FV5

Lab Name: Lionville Labs, Inc. Contract: 60049001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 0809L021-001

Sample wt/vol: 5.60 (g/mL) G Lab File ID: k091109

Level: (low/med) LOW Date Received: 09/04/08

% Moisture: not dec. 0 Date Analyzed: 09/11/08

Column: (pack/cap) CAP Dilution Factor: 0.893

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	22.176	5	J

FORM 1 VOA-TIC 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17FV6

Lab Name: Lionville Labs, Inc. Contract: 60049001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 0809L021-002

Sample wt/vol: 5.00 (g/mL) G Lab File ID: k091108

Level: (low/med) LOW Date Received: 09/04/08

% Moisture: not dec. 3 Date Analyzed: 09/11/08

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	16.951	5	JB

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17FV7

Lab Name: Lionville Labs, Inc. Contract: 60049001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 0809L021-003

Sample wt/vol: 5.50 (g/mL) G Lab File ID: k091107

Level: (low/med) LOW Date Received: 09/04/08

% Moisture: not dec. 3 Date Analyzed: 09/11/08

Column: (pack/cap) CAP Dilution Factor: 0.909

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17FV8

Lab Name: Lionville Labs, Inc. Contract: 60049001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 0809L021-004

Sample wt/vol: 5.10 (g/mL) G Lab File ID: k091106

Level: (low/med) LOW Date Received: 09/04/08

% Moisture: not dec. 8 Date Analyzed: 09/11/08

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17FV8RE

Lab Name: Lionville Labs, Inc. Contract: 60049001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 0809L021-004

Sample wt/vol: 4.80 (g/mL) G Lab File ID: k091115

Level: (low/med) LOW Date Received: 09/04/08

% Moisture: not dec. 8 Date Analyzed: 09/11/08

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.	UNKNOWN	22.108	6	J

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKGI

Lab Name: Lionville Labs, Inc. Contract: 60049001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 08LVK169-MB1

Sample wt/vol: 5.00 (g/mL) G Lab File ID: k091105

Level: (low/med) LOW Date Received: 09/11/08

% Moisture: not dec. 0 Date Analyzed: 09/11/08

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	16.934	5	J

FORM 1 VOA-TIC 1/87 Rev.

Lionville Laboratory Use Only

0809L021

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: Washington Closure Hanford RC-029

Est. Final Proj. Sampling Date:

Project#: 60049-001-001-0001-00

Project Contact/Phone#:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SW846 Del: STD TAT: 15 days

Date Rec'd: 9-4-08 Date Due: 9-19-08

		A	B	C					D		E					
Refrigerator #		6	3	3					3		3					
#/Type Container	Liquid															
	Solid	1gl	1gl	1gl					1gl		1gl					
Volume	Solid	60	250	250					250		250					
Preservatives		—	—	—					—		—					
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal + Hg	CN	TPH 418.1	09/9/08				

Lionville Laboratory Use Only

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	06244	06254	OPCB 06084				Met①		ODRO					
001	J17FV5			S	9.2.08	0730	X	X	~~X~~	9/4/08			X							
002	J17FV6			↓	↓	0735	X	X	X				X		X					
003	J17FV7			↓	↓	0738	X	X	X				X		X					
004	J17FV8 *			↓	↓	0745	X	X	X				X		X					

Special Instructions: Run matrix QC

Met① = HSL + B, Mo, S; NOTL

Special Instructions:

* → 1. per client / Do Not analyze pieces of debris. "Focus of Soil".

9/4/08 3. lab report Diesel + Motor Oil

4.

5.

6.

Relinquished by	Received by	Date	Time
X-eJ Ex	[illegible]	9.4.08	0955

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000017

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-051	Page 1 of 1

Collector: WEIGHT-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: 100-H-3		SAF No.: RC-029
Ice Chest No.: AFS-06-004	Field Logbook No.: EL-1601-2	COA: C100H3A000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES/ LIONVILLE	Offsite Property No.: A080344		Bill of Lading/Air Bill No.: see ospc

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	G/P	aG	aG	G	G						
No. of Container(s)	1	1	1	1	1						
Volume	250mL	250mL	250mL	60mL	250mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1						
Sample No. / Matrix * / Sample Date / Sample Time											
J17FV5 / SOIL / 9/2/08 / 0730	X		X	X							
J17FV6 / SOIL / 9/2/08 / 0735	X	X	X	X	X						
J17FV7 * / SOIL / 9/2/08 / 0738	X	X	X	X	X						
J17FV8 / SOIL / 9/2/08 / 0745	X	X	X	X	X						
~~J17FV9~~ BJH 9/2/08 / SOIL											

CHAIN OF POSSESSION 9/2/08	Sign/Print Names		
Relinquished By/Removed From: TONILLE KOELLING	Date/Time: 9/2/08 0810	Received By/Stored In: BHUDSON	Date/Time: 9/2/08 0810
Relinquished By/Removed From: BHUDSON	Date/Time: 9/2/08 1610	Received By/Stored In: 1060/3C	Date/Time: 9/2/08 1610
Relinquished By/Removed From: 1060/3C	Date/Time: 9/3/08 0925	Received By/Stored In: MSTankovich	Date/Time: 9/3/08 0925
Relinquished By/Removed From: MSTankovich	Date/Time: 9/3/08 0925	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time: 9.4.08 0955	Received By/Stored In: D. Yuch	Date/Time: 9.4.08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

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

*J17FV8 - Do not analyze pieces of debris, focus on "soil". Thanx

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

BU

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

WCH-EE-011

00000018

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W. C. Hanford Date: 9.4.01

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

LvLI Batch #: 0809L021 Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7980 0495 305
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.7	°C	Cooler # AFS-06-004
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.

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
DRO ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1316

DATE RECEIVED: 09/04/08 LVL LOT # :0809L021

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FV6	002	S	08LE0420	09/02/08	09/05/08	09/10/08
J17FV6	002 MS	S	08LE0420	09/02/08	09/05/08	09/10/08
J17FV6	002 MSD	S	08LE0420	09/02/08	09/05/08	09/10/08
J17FV7	003	S	08LE0420	09/02/08	09/05/08	09/10/08
J17FV8	004	S	08LE0420	09/02/08	09/05/08	09/11/08
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 #: 0809L021
SDG/SAF # K1316 /RC-029

W.O. #: 60049-001-001-0001-00
Date Received: 09-04-2008

DIESEL RANGE ORGANICS

Three (3) soil samples were collected on 09-02-2008.

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 09-09,10,11-2008. 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. Sample J17FV8 required a 10-fold instrument dilution due to matrix and high concentrations of target analytes.
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.

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 12 pages.
r:\group\data\2008\dro\tnu\0809-021cs2.doc

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

9/16/08
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.
[illegible]		No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

DIESEL RANGE ORGANICS BY GC

Report Date: 09/11/08 14:34

RFW Batch Number: **0809L021** Client: **WC-HANFORD RC-029** Work Order: 60049001001 Page: 1

	Cust ID:	J17FV6	J17FV6	J17FV6	J17FV7	J17FV8	BLK
Sample Information	RFW#:	002	002 MS	002 MSD	003	004	08LE0420-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	10.0	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	p-Terphenyl	81 %	95 %	105 %	104 %	D %	97 %
Diesel Range Organics		17000	79 %	99 %	25000	1300000	3330 U
Motor Oil Range Organics		21000	NS	NS	33000	4900000	10000 U

	Cust ID:	BLK BS
Sample Information	RFW#:	08LE0420-MB1
	Matrix:	SOIL
	D.F.:	1.00
	Units:	ug/kg
	p-Terphenyl	70 %
Diesel Range Organics		66 %
Motor Oil Range Organics		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

000000005

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:

000000008

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	[signature]	9/8/08 1130	SZ	9/9/08 12:00	GC

SAMPLE EXTRACTION RECORD

Sheet no.: 2

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
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

nville Laboratory Use Only

809L021

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

nt Washington Closure Hanford RC 029

Final Proj. Sampling Date

ect# 60049-001-001-0001-00

ect Contact/Phone#

ville Laboratory Project Manager Arlette Johnson

SW846 Del STD TAT 15 days

Rec'd 9-4-08 Date Due 9-19-08

	A	B	C	D	E
Refrigerator #	6	3	3	3	3
#/Type Container (Liquid / Solid)	1g	1g	1g	1g	1g
Volume (Solid)	60	250	250	250	250
Preservatives	—	—	—	—	—
ANALYSES REQUESTED (ORGANIC)	VOA	BNA	Pest/PCB	Herb	
(INORG)				(1) Metal + Hg	CN / TPH 418.1 / 8015

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	8260 HH	8270 HH	ORGB 8081 HH				Met 1		8015					
	001	J17FV5			S	9.2.08	0730	X	X	~~X~~	9/4/08			X							
	002	J17FV6			↓	↓	0735	X	X	X				X		X					
	003	J17FV7			↓	↓	0738	X	X	X				X		X					
	004	J17FV8 *			↓	↓	0745	X	X	X				X		X					

Lionville Laboratory Use Only

Special Instructions: Run matrix QC

Met 1 = HSL + B, Mo, S; NOTL

Special Instructions:

* → 1. per client / Do Not analyze pieces of debris. "Focus of Soil".

9/4/08 3. lab report Diesel + Motor Oil

Relinquished by	Received by	Date	Time
Ex	[signature]	9-4-08	0955

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-029-051	Page 1 of 1

Collector: WEIGHT-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: 100-H-3		SAF No.: RC-029
Ice Chest No.: AFS-06-004	Field Logbook No.: EL-1601-2	COA: C100H3A000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A080344		Bill of Lading/Air Bill No.: see ospc

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

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

Sample No.	Matrix *	Sample Date	Sample Time										
17FV5	SOIL	9/2/08	0730	X		X	X						
17FV6	SOIL	9/2/08	0735	X	X	X	X	X					
17FV7 *	SOIL	9/2/08	0738	X	X	X	X	X					
17FV8	SOIL	9/2/08	0745	X	X	X	X	X					
~~17FV9~~ BH 9/2/08	SOIL												

CHAIN OF POSSESSION 9/2/08	Sign/Print Names		
Relinquished By/Removed From: WEIGHT-KOELLING	Date/Time: 9/2/08 0810	Received By/Stored In: BHUDSON	Date/Time: 9/2/08 0810
Relinquished By/Removed From: BHUDSON	Date/Time: 9/2/08 1610	Received By/Stored In: 1060/3C	Date/Time: 9/2/08 1610
Relinquished By/Removed From: 1060/3C	Date/Time: 9/3/08 0925	Received By/Stored In: MSTANKOVICH	Date/Time: 9/3/08 0925
Relinquished By/Removed From: MSTANKOVICH	Date/Time: 9/3/08 0925	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time: 9.4.08 0955	Received By/Stored In: [illegible]	Date/Time: 9.4.08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

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

*J17FV8 - Do not analyze pieces of debris, focus on "soil". Thanx

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

BH

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

000000011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W. C. Hanford Date: 9.4.01

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

LvLI Batch #: 0809L021 Sample Custodian: H. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7980 0495 30
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.7	°C	Cooler # AFS-06-004
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.

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1316

DATE RECEIVED: 09/04/08 LVL LOT #: 0809L021

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FV6	002	S	08LE0423	09/02/08	09/09/08	09/12/08
J17FV6	002 MS	S	08LE0423	09/02/08	09/09/08	09/12/08
J17FV6	002 MSD	S	08LE0423	09/02/08	09/09/08	09/12/08
J17FV7	003	S	08LE0423	09/02/08	09/09/08	09/12/08
J17FV8	004	S	08LE0423	09/02/08	09/09/08	09/12/08
LAB QC:						
PBLKUL	MB1	S	08LE0423	N/A	09/09/08	09/12/08
PBLKUL	MB1 BS	S	08LE0423	N/A	09/09/08	09/12/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-029
LVL #: 0809L021
SDG/SAF # K1316 / RC-029

W.O. #: 60049-001-001-0001-00
Date Received: 09-04-2008

CHLORINATED PESTICIDES

Three (3) soil samples were collected on 09-02-2008.

The samples and their associated QC samples were extracted on 09-09-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 09-12-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

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2. The method blank was below the reporting limits for all target compounds.
3. All 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 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\0809-021cs2.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 10 pages.

LIONVILLE LABORATORY INC.

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Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

9/16/08
Date

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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.

Pesticide/PCBs by GC, CLP List

Report Date: 09/15/08 13:33

RFW Batch Number: **0809L021** Client: **WC-HANFORD RC-029 K1316** Work Order: 60049001001 Page: 1

	Cust ID:	J17FV6		J17FV6		J17FV6		J17FV7		J17FV8		PBLKUL	
Sample Information	RFW#:	002		002 MS		002 MSD		003		004		08LE0423-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	4.00		4.00		4.00		4.00		4.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Tetrachloro-m-xylene	78	%	84	%	81	%	86	%	92	%	73	%
	Decachlorobiphenyl	95	%	88	%	93	%	93	%	145	%	71	%
			fl		fl		fl		fl		fl		fl
Alpha-BHC		1.4	U	80	%	81	%	1.4	U	1.4	U	0.33	U
gamma-BHC (Lindane)		1.4	U	84	%	85	%	1.4	U	1.4	U	0.33	U
Beta-BHC		1.4	U	90	%	90	%	1.4	U	10	.I	0.33	U
Heptachlor		1.4	U	88	%	90	%	1.4	U	1.4	U	0.33	U
Delta-BHC		1.4	U	58	%	59	%	1.4	U	1.4	U	0.33	U
Aldrin		1.4	U	84	%	85	%	1.4	U	1.4	U	0.33	U
Heptachlor epoxide		1.4	U	86	%	88	%	1.4	U	1.4	U	0.33	U
gamma-Chlordane		1.4	U	87	%	89	%	1.4	U	1.4	U	0.33	U
Endosulfan I		1.4	U	88	%	91	%	1.4	U	2.6	J	0.33	U
alpha-Chlordane		1.4	U	88	%	90	%	1.4	U	1.4	U	0.33	U
4,4'-DDE		1.4	U	87	%	89	%	1.4	U	1.4	U	0.33	U
Dieldrin		1.4	U	85	%	86	%	1.4	U	120		0.33	U
Endrin		1.4	U	92	%	93	%	1.4	U	1.4	U	0.33	U
4,4'-DDD		1.4	U	84	%	85	%	1.4	U	5.8	J	0.33	U
Endosulfan II		1.4	U	89	%	90	%	1.4	U	1.4	U	0.33	U
4,4'-DDT		1.4	U	84	%	87	%	1.4	U	15		0.33	U
Endrin aldehyde		1.4	U	85	%	87	%	1.4	U	15		0.33	U
Endosulfan sulfate		1.4	U	79	%	81	%	1.4	U	1.4	U	0.33	U
Methoxychlor		1.4	U	98	%	101	%	1.4	U	1.4	U	0.33	U
Endrin ketone		1.4	U	90	%	92	%	1.4	U	22		0.33	U
Toxaphene		14	U	14	U	14	U	14	U	14	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

000000005

000000006

Cust ID: **PBLKUL BS**

Sample Information

RFW#: **08LE0423-MB1**
Matrix: SOIL
D.F.: 1.00
Units: UG/KG

Surrogate:	Tetrachloro-m-xylene	77	%
	Decachlorobiphenyl	78	%

Alpha-BHC	91	%
gamma-BHC (Lindane)	92	%
Beta-BHC	87	%
Heptachlor	90	%
Delta-BHC	70	%
Aldrin	93	%
Heptachlor epoxide	90	%
gamma-Chlordane	92	%
Endosulfan I	100	%
alpha-Chlordane	90	%
4,4'-DDE	91	%
Dieldrin	94	%
Endrin	99	%
4,4'-DDD	98	%
Endosulfan II	91	%
4,4'-DDT	95	%
Endrin aldehyde	79	%
Endosulfan sulfate	81	%
Methoxychlor	94	%
Endrin ketone	90	%
Toxaphene	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

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 09/09/09 Extraction Batch No: 08LE0423 Analyst: MF Method: **** SOX 3546

Test: O608 Cleanup Date: Analyst: Client: WC-HANFORD RC-073 K1313

LIMS Report Date: 09/12/08 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
0809L006-	WC-HANFORD RC-073 K1313										
001 H	J177J3		30.0	1.0		10		1.0	N	0.0	333.3
001 HS	J177J3		30.0	1.0	1.0	10		1.0	N	0.0	333.3
001 HT	J177J3		30.0	1.0	1.0	10		1.0	N	0.0	333.3
0809L017-	FLRHANFORD F03-015										
001 H	B1WPK7		30.0	1.0		10		1.0	N	0.0	333.3
001 HS	B1WPK7		30.0	1.0	1.0	10		1.0	N	0.0	333.3
001 HT	B1WPK7		30.0	1.0	1.0	10		1.0	N	0.0	333.3
002 H	B1WPL0		30.0	1.0		10		1.0	N	0.0	333.3
0809L021-	WC-HANFORD RC-029 K1316										
002 H	J17FV6		30.0	1.0		10		1.0	N	96.97	343.7
002 HS	J17FV6		30.0	1.0	1.0	10		1.0	N	96.97	343.7
002 HT	J17FV6		30.0	1.0	1.0	10		1.0	N	96.97	343.7
003 H	J17FV7		30.0	1.0		10		1.0	N	96.99	343.7
004 H	J17FV8		30.0	1.0		10		1.0	N	92.34	361.0
0809L036-	WC-HANFORD RC-029 K1319										
001 H	J17FY5		30.0	1.0		10		1.0	N	98.31	339.1
001 HS	J17FY5		30.0	1.0	1.0	10		1.0	N	98.31	339.1
001 HT	J17FY5		30.0	1.0	1.0	10		1.0	N	98.31	339.1
002 H	J17FY6		30.0	1.0		10		1.0	N	97.75	341.0
08LE0423-MB1 H	PBLKUL		30.0	1.0		10		1.0	N	100.00	333.3
08LE0423-MB1 HS	PBLKUL		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 SPIKE 89915509

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	9/12/08 905	SZ	9/12/08 9:10	GC

000000007

onville Laboratory Use Only
)809L021

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI Lionville Laboratory Inc.

ent Washington Closure Hanford RC 029
:. Final Proj. Sampling Date
)ject# 60049-001-001-0001-00
)ject Contact/Phone#
nville Laboratory Project Manager Orlette Johnson
SW846 Del STD TAT 15 days
te Rec'd 9-4-08 Date Due 9-19-08

		A	B	C					D		E					
Refrigerator #		6	3	3					3		3					
#/Type Container	Liquid															
	Solid	1gl	1gl	1gl					1gl		1gl					
Volume	Solid	60	250	250					250		250					
Preservatives		—	1	1					—		1					
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal + Hg	CN	TPH 418.1	04 8015				

TRIX DES: 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	0624H	0625H	ORB 0608H					Met①		ODRO					
001	J17FV5			S	9-2-08	0730	X	X	~~X~~	9/14/08				X							
002	J17FV6			↓	↓	0735	X	X	X					X		X					
003	J17FV7			↓	↓	0738	X	X	X					X		X					
004	J17FV8 *			↓	↓	0745	X	X	X					X		X					

Lionville Laboratory Use Only

ecial Instructions: Run matrix QC

Met① = HSL + B, Mo, S; NOTL

Special Instructions:
* → 1. per client / Do Not analyze pieces of debris. "Focus of Soil".
2.
9/4/08 3. lab report Diesel + Motor Oil
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible] Ex	[illegible]	9-4-08	0955

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-029-051 | Page 1 of 1

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: 100-H-3		SAF No.: RC-029
Ice Chest No.: AFS-06-004	Field Logbook No.: EL-1601-2	COA: C100H3A000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080344		Bill of Lading/Air Bill No.: see ospc

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	G/P	aG	aG	G	G						
No. of Container(s)	1	1	1	1	1						
Volume	250mL	250mL	250mL	60mL	250mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1						
Sample No.	Matrix *	Sample Date	Sample Time								
J17FV5	SOIL	9/2/08	0730	X		X	X				
J17FV6	SOIL	9/2/08	0735	X	X	X	X	X			
J17FV7 *	SOIL	9/2/08	0738	X	X	X	X	X			
J17FV8	SOIL	9/2/08	0745	X	X	X	X	X			
~~J17FV9~~ BH 9/2/08	SOIL										

CHAIN OF POSSESSION 9/2/08 — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DWLEchkoelling C Welch	9/2/08 0810	BHUDSON BHudson	9/2/08 0810
BHUDSON BHudson	9/2/08 1610	1060/3C	9/2/08 1610
1060/3C 9/3/08	0925	MSTankovich	9/3/08 0925
MSTankovich WCH	9/3/08 0925	FedEx	
FedEx	9.4.08 0955	D. Vinnich	9.4.08 0955

SPECIAL INSTRUCTIONS

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

*J17FV8 - Do not analyze pieces of debris, focus on "soil". Thanx

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

BU

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

6000000000

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W. C. Hanford Date: 9.4.04

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

LvLI Batch #: 0809L021 Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7980 0495 30
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.7	°C	Cooler # AFS-06-004
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.

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1316

DATE RECEIVED: 09/04/08 LVL LOT # :0809L021

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FV5						
SILVER, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
ALUMINUM, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
ARSENIC, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
BORON, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
BARIUM, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
BERYLLIUM, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
CALCIUM, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
CADMIUM, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
COBALT, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
CHROMIUM, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
COPPER, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
IRON, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
MERCURY, TOTAL	001	S	08C0157	09/02/08	09/10/08	09/10/08
POTASSIUM, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
MAGNESIUM, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
MANGANESE, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
MOLYBDENUM, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
SODIUM, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
NICKEL, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
LEAD, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
ANTIMONY, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
SELENIUM, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
SILICON, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
VANADIUM, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
ZINC, TOTAL	001	S	08L0338	09/02/08	09/17/08	09/18/08
J17FV6						
SILVER, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
SILVER, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
SILVER, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
ALUMINUM, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
ALUMINUM, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
ALUMINUM, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
ARSENIC, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1316

DATE RECEIVED: 09/04/08 LVL LOT # :0809L021

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ARSENIC, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
ARSENIC, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
BORON, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
BORON, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
BORON, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
BARIUM, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
BARIUM, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
BARIUM, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
BERYLLIUM, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
BERYLLIUM, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
BERYLLIUM, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
CALCIUM, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
CALCIUM, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
CALCIUM, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
CADMIUM, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
CADMIUM, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
CADMIUM, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
COBALT, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
COBALT, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
COBALT, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
CHROMIUM, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
CHROMIUM, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
CHROMIUM, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
COPPER, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
COPPER, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
COPPER, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
IRON, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
IRON, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
IRON, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
MERCURY, TOTAL	002	S	08C0157	09/02/08	09/10/08	09/10/08
MERCURY, TOTAL	002 REP	S	08C0157	09/02/08	09/10/08	09/10/08
MERCURY, TOTAL	002 MS	S	08C0157	09/02/08	09/10/08	09/10/08
POTASSIUM, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
POTASSIUM, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
POTASSIUM, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
MAGNESIUM, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
MAGNESIUM, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
MAGNESIUM, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1316

DATE RECEIVED: 09/04/08 LVL LOT # :0809L021

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
MANGANESE, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
MANGANESE, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
MOLYBDENUM, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
MOLYBDENUM, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
MOLYBDENUM, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
SODIUM, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
SODIUM, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
SODIUM, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
NICKEL, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
NICKEL, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
NICKEL, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
LEAD, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
LEAD, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
LEAD, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
ANTIMONY, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
ANTIMONY, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
ANTIMONY, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
SELENIUM, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
SELENIUM, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
SELENIUM, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
SILICON, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
SILICON, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
SILICON, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
VANADIUM, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
VANADIUM, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
VANADIUM, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
ZINC, TOTAL	002	S	08L0338	09/02/08	09/17/08	09/18/08
ZINC, TOTAL	002 REP	S	08L0338	09/02/08	09/17/08	09/18/08
ZINC, TOTAL	002 MS	S	08L0338	09/02/08	09/17/08	09/18/08
J17FV7						
SILVER, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
ALUMINUM, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
ARSENIC, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
BORON, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
BARIUM, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1316

DATE RECEIVED: 09/04/08 LVL LOT # :0809L021

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BERYLLIUM, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
CALCIUM, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
CADMIUM, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
COBALT, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
CHROMIUM, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
COPPER, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
IRON, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
MERCURY, TOTAL	003	S	08C0157	09/02/08	09/10/08	09/10/08
POTASSIUM, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
MAGNESIUM, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
MANGANESE, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
MOLYBDENUM, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
SODIUM, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
NICKEL, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
LEAD, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
ANTIMONY, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
SELENIUM, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
SILICON, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
VANADIUM, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
ZINC, TOTAL	003	S	08L0338	09/02/08	09/17/08	09/18/08
J17FV8						
SILVER, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
ALUMINUM, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
ARSENIC, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
BORON, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
BARIUM, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
BERYLLIUM, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
CALCIUM, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
CADMIUM, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
COBALT, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
CHROMIUM, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
COPPER, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
IRON, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
MERCURY, TOTAL	004	S	08C0157	09/02/08	09/10/08	09/10/08
POTASSIUM, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
MAGNESIUM, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1316

DATE RECEIVED: 09/04/08 LVL LOT # :0809L021

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
MOLYBDENUM, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
SODIUM, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
NICKEL, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
LEAD, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
ANTIMONY, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
SELENIUM, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
SILICON, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
VANADIUM, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08
ZINC, TOTAL	004	S	08L0338	09/02/08	09/17/08	09/18/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
SILVER, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
ALUMINUM LABORTORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
ALUMINUM, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
ARSENIC LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
ARSENIC, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
BORON LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
BORON, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
BARIUM LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
BARIUM, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
BERYLLIUM, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
CALCIUM LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
CALCIUM, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
CADMIUM LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
CADMIUM, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
COBALT LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
COBALT, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
CHROMIUM LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
CHROMIUM, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
COPPER LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
COPPER, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
IRON LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
IRON, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
MERCURY LABORATORY	LC1 BS	S	08C0157	N/A	09/10/08	09/10/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1316

DATE RECEIVED: 09/04/08 LVL LOT # :0809L021

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	MB1	S	08C0157	N/A	09/10/08	09/10/08
POTASSIUM LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
POTASSIUM, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
MAGNESIUM, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
MANGANESE LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
MANGANESE, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
MOLYBDENUM LABORATOR	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
MOLYBDENUM, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
SODIUM LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
SODIUM, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
NICKEL LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
NICKEL, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
LEAD LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
LEAD, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
ANTIMONY LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
ANTIMONY, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
SELENIUM LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
SELENIUM, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
SILICON LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
SILICON, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
VANADIUM LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
VANADIUM, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08
ZINC LABORATORY	LC1 BS	S	08L0338	N/A	09/17/08	09/18/08
ZINC, TOTAL	MB1	S	08L0338	N/A	09/17/08	09/18/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-029
LVL#: 0809L021
SDG/SAF#: K1316/RC-029

W.O.#: 60049-001-001-0001-00
Date Received: 09-04-08

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 4 soil samples.

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

   The samples, with the exception of J17FV5, were run with 3-fold dilutions for ICP metals due to sample matrix.

   All samples for Aluminum were run on a different instrument due to sample matrix.

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 Potassium and Sodium in file TA0918C. All samples were run and reported for Potassium and Sodium from file PS0918B along with Aluminum.

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

6. The preparation/method blanks for 2 analytes were 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 results for Manganese and Sodium were greater than the Limit of Quantitation (LOQ) {3-10x the (LOD) Limit of Detection} and all samples for Sodium and sample J17FV5 for Manganese 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

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 24 pages.

"uncorrected" for the levels found in the MB.

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 (20%). Sample results for Silicon may be biased low. Refer to the Inorganics Laboratory Control Standards Report.

9. All matrix spike (MS) recoveries for 4 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 PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J17FV6	Aluminum	126,000	97.3
	Iron	60,000	99.8
	Antimony	300	98.9
	Silicon	6,300	101.7

11. The duplicate analyses for 2 analytes were outside 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.

Judy Stone

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

9/22/08
Date

alm/m09-021

LvLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

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

Lot#: 08094021

Leaching Procedure: __1310 __1311 __1312 __Other:_____

TCLP 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

Other: Method: _____

LW000000009

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 09/22/08

CLIENT: WC-HANFORD RC-029 K1316 LVL LOT #: 0809L021

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J17FV5	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Aluminum, Total	84.6	MG/KG	3.1	1.0
		Arsenic, Total	0.39 u	MG/KG	0.39	1.0
		Boron, Total	0.39 u	MG/KG	0.39	1.0
		Barium, Total	1.4	MG/KG	0.08	1.0
		Beryllium, Total	0.04 u	MG/KG	0.04	1.0
		Calcium, Total	42.0	MG/KG	3.1	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Cobalt, Total	0.16 u	MG/KG	0.16	1.0
		Chromium, Total	0.24	MG/KG	0.16	1.0
		Copper, Total	0.33	MG/KG	0.16	1.0
		Iron, Total	222	MG/KG	3.5	1.0
		Mercury, Total	0.007u	MG/KG	0.007	1.0
		Potassium, Total	45.0	MG/KG	38.8	1.0
		Magnesium, Total	31.6	MG/KG	2.0	1.0
		Manganese, Total	4.1	MG/KG	0.03	1.0
		Molybdenum, Total	0.24 u	MG/KG	0.24	1.0
		Sodium, Total	15.0	MG/KG	1.6	1.0
		Nickel, Total	0.20	MG/KG	0.16	1.0
		Lead, Total	0.24 u	MG/KG	0.24	1.0
		Antimony, Total	0.24 u	MG/KG	0.24	1.0
		Selenium, Total	0.47 u	MG/KG	0.47	1.0
		Silicon, Total	64.4	MG/KG	3.1	1.0
		Vanadium, Total	0.27	MG/KG	0.11	1.0
		Zinc, Total	1.0	MG/KG	0.47	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/22/08

CLIENT: WC-HANFORD RC-029 K1316 LVL LOT #: 0809L021

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J17FV6	Silver, Total	0.25 u	MG/KG	0.25	3.0
		Aluminum, Total	8680	MG/KG	10.1	3.0
		Arsenic, Total	3.6	MG/KG	1.3	3.0
		Boron, Total	1.3 u	MG/KG	1.3	3.0
		Barium, Total	74.7	MG/KG	0.25	3.0
		Beryllium, Total	0.27	MG/KG	0.13	3.0
		Calcium, Total	5850	MG/KG	10.1	3.0
		Cadmium, Total	0.13 u	MG/KG	0.13	3.0
		Cobalt, Total	6.6	MG/KG	0.50	3.0
		Chromium, Total	20.0	MG/KG	0.50	3.0
		Copper, Total	13.7	MG/KG	0.50	3.0
		Iron, Total	18600	MG/KG	11.3	3.0
		Mercury, Total	0.01	MG/KG	0.01	1.0
		Potassium, Total	1200	MG/KG	124	3.0
		Magnesium, Total	5690	MG/KG	6.3	3.0
		Manganese, Total	248	MG/KG	0.10	3.0
		Molybdenum, Total	0.75 u	MG/KG	0.75	3.0
		Sodium, Total	193	MG/KG	5.0	3.0
		Nickel, Total	17.8	MG/KG	0.50	3.0
		Lead, Total	5.7	MG/KG	0.75	3.0
		Antimony, Total	0.75 u	MG/KG	0.75	3.0
		Selenium, Total	1.5 u	MG/KG	1.5	3.0
		Silicon, Total	481	MG/KG	10.1	3.0
		Vanadium, Total	37.3	MG/KG	0.35	3.0
		Zinc, Total	46.0	MG/KG	1.5	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/22/08

CLIENT: WC-HANFORD RC-029 K1316 LVL LOT #: 0809L021

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J17FV7	Silver, Total	0.23 u	MG/KG	0.23	3.0
		Aluminum, Total	8970	MG/KG	9.2	3.0
		Arsenic, Total	3.4	MG/KG	1.1	3.0
		Boron, Total	1.7	MG/KG	1.1	3.0
		Barium, Total	76.4	MG/KG	0.23	3.0
		Beryllium, Total	0.28	MG/KG	0.11	3.0
		Calcium, Total	6170	MG/KG	9.2	3.0
		Cadmium, Total	0.11 u	MG/KG	0.11	3.0
		Cobalt, Total	6.6	MG/KG	0.46	3.0
		Chromium, Total	20.1	MG/KG	0.46	3.0
		Copper, Total	13.8	MG/KG	0.46	3.0
		Iron, Total	18800	MG/KG	10.3	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	1290	MG/KG	113	3.0
		Magnesium, Total	5740	MG/KG	5.7	3.0
		Manganese, Total	256	MG/KG	0.09	3.0
		Molybdenum, Total	0.69 u	MG/KG	0.69	3.0
		Sodium, Total	199	MG/KG	4.6	3.0
		Nickel, Total	17.4	MG/KG	0.46	3.0
		Lead, Total	4.9	MG/KG	0.69	3.0
		Antimony, Total	0.69 u	MG/KG	0.69	3.0
		Selenium, Total	1.4 u	MG/KG	1.4	3.0
		Silicon, Total	424	MG/KG	9.2	3.0
		Vanadium, Total	38.0	MG/KG	0.32	3.0
		Zinc, Total	46.0	MG/KG	1.4	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/22/08

CLIENT: WC-HANFORD RC-029 K1316 LVL LOT #: 0809L021

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J17FV8	Silver, Total	0.24 u	MG/KG	0.24	3.0
		Aluminum, Total	8120	MG/KG	9.8	3.0
		Arsenic, Total	3.9	MG/KG	1.2	3.0
		Boron, Total	2.4	MG/KG	1.2	3.0
		Barium, Total	84.5	MG/KG	0.24	3.0
		Beryllium, Total	0.22	MG/KG	0.12	3.0
		Calcium, Total	9360	MG/KG	9.8	3.0
		Cadmium, Total	0.12 u	MG/KG	0.12	3.0
		Cobalt, Total	6.7	MG/KG	0.49	3.0
		Chromium, Total	18.8	MG/KG	0.49	3.0
		Copper, Total	15.1	MG/KG	0.49	3.0
		Iron, Total	19200	MG/KG	11.0	3.0
		Mercury, Total	0.1	MG/KG	0.01	1.0
		Potassium, Total	1280	MG/KG	120	3.0
		Magnesium, Total	5080	MG/KG	6.1	3.0
		Manganese, Total	285	MG/KG	0.1	3.0
		Molybdenum, Total	0.73 u	MG/KG	0.73	3.0
		Sodium, Total	236	MG/KG	4.9	3.0
		Nickel, Total	18.4	MG/KG	0.49	3.0
		Lead, Total	19.1	MG/KG	0.73	3.0
		Antimony, Total	0.73 u	MG/KG	0.73	3.0
		Selenium, Total	1.5 u	MG/KG	1.5	3.0
		Silicon, Total	667	MG/KG	9.8	3.0
		Vanadium, Total	48.2	MG/KG	0.34	3.0
		Zinc, Total	76.3	MG/KG	1.5	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/22/08

CLIENT: WC-HANFORD RC-029 K1316 LVL LOT #: 0809L021

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0338-MB1	Silver, Total	0.16	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	0.13	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	6.6	MG/KG	4.0	1.0
		Cadmium, Total	0.06	MG/KG	0.05	1.0
		Cobalt, Total	0.20 u	MG/KG	0.20	1.0
		Chromium, Total	0.25	MG/KG	0.20	1.0
		Copper, Total	0.20 u	MG/KG	0.20	1.0
		Iron, Total	5.5	MG/KG	4.5	1.0
		Potassium, Total	49.3 u	MG/KG	49.3	1.0
		Magnesium, Total	3.1	MG/KG	2.5	1.0
		Manganese, Total	0.45	MG/KG	0.04	1.0
		Molybdenum, Total	0.30 u	MG/KG	0.30	1.0
		Sodium, Total	22.1	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	08C0157-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 09/22/08

CLIENT: WC-HANFORD RC-029 K1316 LVL LOT #: 0809L021

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	J17FV6	Silver, Total	3.8	0.25u	4.2	90.5	3.0
		Aluminum, Total	9430	8680	166	454.6*	3.0
		Arsenic, Total	160	3.6	166	94.3	3.0
		Boron, Total	74.7	1.3 u	83.1	89.9	3.0
		Barium, Total	234	74.7	166	95.9	3.0
		Beryllium, Total	4.3	0.27	4.2	95.9	3.0
		Calcium, Total	8160	5850	2080	111.1	3.0
		Cadmium, Total	4.0	0.13u	4.2	95.2	3.0
		Cobalt, Total	46.6	6.6	41.6	96.2	3.0
		Chromium, Total	35.6	20.0	16.6	94.0	3.0
		Copper, Total	34.0	13.7	20.8	97.6	3.0
		Iron, Total	18800	18600	83.1	247.5*	3.0
		Mercury, Total	0.19	0.01	0.17	109.0	1.0
		Potassium, Total	3230	1200	2080	97.7	3.0
		Magnesium, Total	7800	5690	2080	101.6	3.0
		Manganese, Total	293	248	41.6	108.7*	3.0
		Molybdenum, Total	78.4	0.75u	83.1	94.3	3.0
		Sodium, Total	2200	193	2080	96.7	3.0
		Nickel, Total	57.3	17.8	41.6	95.0	3.0
		Lead, Total	45.4	5.7	41.6	95.4	3.0
		Antimony, Total	12.5	0.75u	41.6	30.0	3.0
		Selenium, Total	136	1.5 u	166	81.5	3.0
		Silicon, Total	483	481	83.1	2.8*	3.0
		Vanadium, Total	77.5	37.3	41.6	96.6	3.0
		Zinc, Total	86.3	46.0	41.6	96.9	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 09/22/08

CLIENT: WC-HANFORD RC-029 K1316 LVL LOT #: 0809L021

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	J17FV6	Silver, Total	0.25u	0.25u	NC	3.0
		Aluminum, Total	8680	8750	0.80	3.0
		Arsenic, Total	3.6	2.8	25.0	3.0
		Boron, Total	1.3 u	1.2 u	NC	3.0
		Barium, Total	74.7	76.0	1.7	3.0
		Beryllium, Total	0.27	0.27	0.62	3.0
		Calcium, Total	5850	5970	2.1	3.0
		Cadmium, Total	0.13u	0.12u	NC	3.0
		Cobalt, Total	6.6	6.7	1.5	3.0
		Chromium, Total	20.0	19.2	4.1	3.0
		Copper, Total	13.7	14.1	2.9	3.0
		Iron, Total	18600	18500	0.34	3.0
		Mercury, Total	0.01	0.00u	~~NC~~ 200*	1.0
		Potassium, Total	1200	1250	3.9	3.0
		Magnesium, Total	5690	5690	0.076	3.0
		Manganese, Total	248	259	4.4	3.0
		Molybdenum, Total	0.75u	0.74u	NC	3.0
		Sodium, Total	193	178	8.3	3.0
		Nickel, Total	17.8	17.5	1.7	3.0
		Lead, Total	5.7	5.9	3.4	3.0
		Antimony, Total	0.75u	0.74u	NC	3.0
		Selenium, Total	1.5 u	1.5 u	NC	3.0
		Silicon, Total	481	434	10.3	3.0
		Vanadium, Total	37.3	36.3	2.7	3.0
		Zinc, Total	46.0	46.0	0.00	3.0

* Corrected RPD
aem 9/22/08

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 09/22/08

CLIENT: WC-HANFORD RC-029 K1316 LVL LOT #: 0809L021

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0338-LC1	Silver, LCS	48.3	50.0	MG/KG	96.6
		Aluminum, LCS	456	500	MG/KG	91.3
		Arsenic, LCS	935	1000	MG/KG	93.5
		Boron, LCS	454	500	MG/KG	90.7
		Barium, LCS	474	500	MG/KG	94.8
		Beryllium, LCS	24.3	25.0	MG/KG	97.2
		Calcium, LCS	2450	2500	MG/KG	98.2
		Cadmium, LCS	23.8	25.0	MG/KG	95.2
		Cobalt, LCS	240	250	MG/KG	96.0
		Chromium, LCS	48.8	50.0	MG/KG	97.6
		Copper, LCS	121	125	MG/KG	96.9
		Iron, LCS	516	500	MG/KG	103.2
		Potassium, LCS	2200	2500	MG/KG	88.1
		Magnesium, LCS	2370	2500	MG/KG	94.9
		Manganese, LCS	73.7	75.0	MG/KG	98.3
		Molybdenum, LCS	482	500	MG/KG	96.4
		Sodium, LCS	2250	2500	MG/KG	90.1
		Nickel, LCS	194	200	MG/KG	96.8
		Lead, LCS	242	250	MG/KG	96.8
		Antimony, LCS	281	300	MG/KG	93.5
		Selenium, LCS	891	1000	MG/KG	89.1
		Silicon, LCS	100	500	MG/KG	20.0
		Vanadium, LCS	240	250	MG/KG	96.2
		Zinc, LCS	96.5	100	MG/KG	96.5
LCS1	08C0157-LC1	Mercury, LCS	4.7	4.7	MG/KG	99.3

Lionville Laboratory Incorporated

Logbook #: 40L

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0338
Date/Time Initiated: 9/17/08 1130
Date/Time Completed: 9/17/08 2030
Analyst(s): JW
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: 91°

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

TJW

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
0809L021-001		1.27gr	100ml	<2	TO	coarse	Ottawa sand		
002		1.23gr					brown soil - fine	with lumps	
002R		1.25gr							
002S	1.0ml	1.24gr							
003		1.35gr							
004		1.33gr					with asst debris *		
0809L022-001		1.29gr					Ottawa sand		
002		1.27gr					brown soil - fine	w/ asst debris	
002R		1.37gr							
002S	1.0ml	1.29gr							
003		1.23gr						rocks	
0809L035-001		1.28gr					dark brown soil	N/A	
001R		1.31gr							
001S	1.0ml	1.29gr							
002		1.24gr							
0809L036-001		1.28gr				fine	brown soil	rocks	
001R		1.32gr							
001S	1.0ml	1.28gr							
002		1.28gr							
003		1.24gr				coarse	Ottawa sand	N/A	
08L0338-MB1		1.0gr					boiling chips		
LC1	1.0ml	1.0gr							
			JW	9/17/08					

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

Reagent IDs:
HNO_3 607057
HCL 676054
H_2O_2 G15A18
1:1 HNO_3 9789-053-08
1:1 HCL

File ID#: IC033801 IC033802

LIMS Transfer: (Y) N Updated

Data Review By/Date: PMP, 09/17/08

* per COC, only soil (no debris) included in aliquot. JW 9/17/08

ionville Laboratory
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MERCURY PREPARATION

Logbook # 498

Analyst: TEB
Date 9/10/08
Start Time/Temp: 1005 / 92°
End Time/Temp: 1035 / 92°

Instrument ID HG32
Balance #: B29 / NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0157
Worksheet: HG-091002
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	500			10mL	50mL	
0.2 µg/L	3VG	0.100				
1.0	PC	0.500				
2.0	Gd	1.000				
5.0	R	2.500				
10.0	11A	5.000				
ICV	H3	0.125	2.5			
CCV	8	0.250	5.0			
ICB/CCB	PA/NJ					9.80L
MB1	JC			0.30		PBS157 100.0
LC1	NR	*	*	0.30		LCSS157
0809L034-001	1721			0.33		R 95.3
001R	K17			0.38		
001S	6J	0.500	1.0	0.35		
0809L006-001	L15			0.33		100.00
001R	NB			0.39		
001S	E7	0.500	1.0	0.33		
0809L021-001	31			0.41		99.98
002	537			0.31		96.97
002R	N2			0.35		
002S	KX	0.500	1.0	0.31		
003	P3			0.31		96.99
004	CM			0.31		92.3
0809L022-001	514			0.31		99.97
002	AP			0.32		98.08
002R	114			0.36		
002S	816	0.500	1.0	0.32		

Standard:	ID	Prep Date/Time
CAL/MS	RI 6072-78-14B	9/10/08 0730
CV/CCV/LCS	US 6072-78-15A	

Reviewed By/Date: [signature] 9/12/08

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

Jonville Laboratory
Incorporated

MERCURY PREPARATION

Logbook # 498

Analyst: EA
Date 9/10/08
Start Time/Temp:
End Time/Temp: See page

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

Prep Batch: 08C0157
Worksheet: HG091002
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.
0809L022-003	P1			0.35	50mL	98.07
0809L035-001	40			0.31	↓	78.28
W1R	L53			0.32	↓	↓
W1S	UT	0.500	1.0	0.31	↓	↓
002	205			0.35	↓	82.56
0809L036-001	DX			0.36	↓	98.31
W1R	H2			0.32	↓	↓
W1S	41	0.500	1.0	0.37	↓	↓
002	RU			0.31	↓	97.75
W3	194			0.41	↓	99.95

EA 9/10/08

Standard:	ID	Prep Date/Time
CAL/MS		
CV/CCV/LCS	See page 016	

Reviewed By/Date: [signature] 9/12/08

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

nville Laboratory Use Only

809L021

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

nt Washington Closure Hanford RC 029

Final Proj. Sampling Date

ect# 60049-001-001-0001-00

ect Contact/Phone#

ville Laboratory Project Manager Arlette Johnson

SW846 Del STD TAT 15 days

Rec'd 9-4-08 Date Due 9-19-08

		A	B	C					D		E					
Refrigerator #		6	3	3					3		3					
#/Type Container	Liquid															
	Solid	1gl	1gl	1gl					1gl		1gl					
Volume	Solid	60	250	250					250		250					
Preservatives		—	—	—					—		—					
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	Pest/ PCB	Herb				Metal + Hg	CN	TPH 418.1	0539 408				

MATRIX ES: 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	0608 PCB 4				Met		0DRO				
	001	J17FV5			S	9.2.08	0730	X	X	~~X~~	9/11/08			X						
	002	J17FV6					0735	X	X	X				X		X				
	003	J17FV7					0738	X	X	X				X		X				
	004	J17FV8 *					0745	X	X	X				X		X				

Lionville Laboratory Use Only

cial Instructions: Run matrix QC

Met ① = HSL + B, Mo, S; NOTL

Special Instructions:

* → 1. per client / Do Not analyze pieces of debris. "Focus of Soil".

9/4/08 3. lab report Diesel + Motor Oil

Relinquished by	Received by	Date	Time
Ex	[signature]	9.4.08	0955

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000022

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-029-051 | Page 1 of 1

llector: WEGH-KOELLING	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 8C	Data Turnaround: 15 Days		
oject Designation: Remaining Sites Confirmation Sampling - Soil	Sampling Location: 100-H-3		SAF No.: RC-029
Chest No.: AFS-06-004	Field Logbook No.: EL-1601-2	COA: C100H3A000	Method of Shipment: FedEx
ipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080344		Bill of Lading/Air Bill No.: see ospc

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

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

Sample No.	Matrix *	Sample Date	Sample Time										
7FV5	SOIL	9/2/08	0730	X		X	X						
7FV6	SOIL	9/2/08	0735	X	X	X	X	X					
7FV7 *	SOIL	9/2/08	0738	X	X	X	X	X					
7FV8	SOIL	9/2/08	0745	X	X	X	X	X					
~~7FV9~~ BH 9/2/08	SOIL												

CHAIN OF POSSESSION 9/2/08 — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WEGH-KOELLING	9/2/08 0810	BHUDSON	9/2/08 0810
BHUDSON	9/2/08 1610	1060/3C	9/2/08 1610
1060/3C	9/3/08 0925	MSTANKOVICH	9/3/08 0925
MSTANKOVICH	9/3/08 0925	FED EX	
FED EX	9.4.08 0955		9.4.08 0955

SPECIAL INSTRUCTIONS

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

*J17FV8 - Do not analyze pieces of debris, focus on "soil". Thanx

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

BL

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
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000023

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W. C. Hanford Date: 9.4.08

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

LvLI Batch #: 0809L021 Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7980 0495 30
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.7	°C	Cooler # AFS-06-004
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.

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1316

DATE RECEIVED: 09/04/08 LVL LOT # :0809L021

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FV5	001	S	08LE0431	09/02/08	09/11/08	09/19/08
J17FV6	002	S	08LE0431	09/02/08	09/11/08	09/19/08
J17FV6	002 MS	S	08LE0431	09/02/08	09/11/08	09/19/08
J17FV6	002 MSD	S	08LE0431	09/02/08	09/11/08	09/19/08
J17FV7	003	S	08LE0431	09/02/08	09/11/08	09/21/08
J17FV8	004	S	08LE0431	09/02/08	09/11/08	09/21/08
LAB QC:						
SBLKXT	MB1	S	08LE0431	N/A	09/11/08	09/19/08
SBLKXT	MB1 BS	S	08LE0431	N/A	09/11/08	09/19/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-029 K1316
LVL #: 0809L021

W.O. #: 60049-001-001-0001-00
Date Received: 09-04-2008

SEMIVOLATILE

Four (4) soil samples were collected on 09-02-2008.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 09-11-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 09-19,21-2008.

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 (LVL) 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 LVLs sample acceptance policy.

2. Samples were extracted and analyzed within holding time.

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

4. All obtainable surrogate recoveries were within acceptance criteria.

5. Sample J17FV8 required an overall 20X dilution due to high levels of both target and non-target analytes. The J17FV8 sample extract was dark and viscous and had a final volume of 4.0 ml. In addition, the sample required a 5X dilution at the instrument. Reporting limits have been adjusted to reflect these necessary dilutions.

6. Four (4) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the sample discrepancy report (SDR# 08MS209) has been enclosed.

7. One (1) of sixty-four (64) blank spike recoveries was outside acceptance criteria. A copy of the sample discrepancy report (SDR# 08MS209) has been enclosed.

8. The method blank contained the common laboratory contaminant bis(2-Ethlyhexyl) phthalate at a level less than the CRQL.

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

r:\group\data\2008\bna\tnu\0809-021os2.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 19 pages.

LIONVILLE LABORATORY INC.

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

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

12. 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").

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

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. The Laboratory Manager, or a designee, as verified by the following signature, has authorized release of the data contained in this hard-copy data package.

for Iain Daniels
Laboratory Manager
Lionville Laboratory

9/29/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08MS209

Initiator: Sharon Saylor
Date: 9-22-08
Client: WC-Hanford RC029 K1316

Batch: 0809021
Samples: ms, msd, BS
Method: SW846/MCAWW/CLP/

Parameter: F270
Matrix: SOLID
Prep Batch: OFEO431

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 recovery of 4,6-dinitro-2-methylphenol in the BS (ok in MS/MSD)
② low recovery of several analytes in the ms + msd (isophorone, 1,2,4 Trichlorobenzene; 2 methylnaphthalene) ok in BS

2. Known or Probable Causes(s) ① Acidic phenols can be subject to erratic chromatographic behavior especially if the GC system contaminated from high boiling materials. ② Sporadic, just outside QC acceptance criteria. All other spikes/sum within criteria.

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)

narrate

9/29/08

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: _____ 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
(1) Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-in: King

Route
__ Metals: Welsh / _____
__ Inorganic: Perrone / _____
__ GC/LC: Carey / _____
__ MS VOA: Rubino / _____
(2) 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: 09/23/08 13:09

RFW Batch Number: 0809L021 Client: WC-HANFORD RC-029 K1316 Work Order: 60049001001 Page: 1a

	Cust ID:	J17FV5	J17FV6	J17FV6	J17FV6	J17FV7	J17FV8
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	20.0
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	61 %	50 %	55 %	68 %	67 %	66 %
	2-Fluorobiphenyl	57 %	54 %	56 %	64 %	59 %	76 %
	Terphenyl-d14	73 %	67 %	60 %	73 %	83 %	87 %
	Phenol-d5	58 %	52 %	57 %	66 %	56 %	65 %
	2-Fluorophenol	60 %	53 %	60 %	72 %	60 %	48 %
	2,4,6-Tribromophenol	21 %	64 %	64 %	66 %	68 %	57 %
		fl	fl	fl	fl	fl	fl
Phenol		330 U	340 U	63 %	69 %	340 U	7200 U
bis(2-Chloroethyl)ether		330 U	340 U	53 %	59 %	340 U	7200 U
2-Chlorophenol		330 U	340 U	56 %	65 %	340 U	7200 U
1,3-Dichlorobenzene		330 U	340 U	50 %	55 %	340 U	7200 U
1,4-Dichlorobenzene		330 U	340 U	51 %	55 %	340 U	7200 U
1,2-Dichlorobenzene		330 U	340 U	53 %	57 %	340 U	7200 U
2-Methylphenol		330 U	340 U	66 %	73 %	340 U	7200 U
2,2'-oxybis(1-Chloropropane)		330 U	340 U	54 %	58 %	340 U	7200 U
3/4 Methylphenol		330 U	340 U	61 %	69 %	340 U	7200 U
N-Nitroso-di-n-propylamine		330 U	340 U	60 %	66 %	340 U	7200 U
Hexachloroethane		330 U	340 U	50 %	53 %	340 U	7200 U
Nitrobenzene		330 U	340 U	56 %	62 %	340 U	7200 U
Isophorone		330 U	340 U	56 * %	64 %	340 U	7200 U
2-Nitrophenol		330 U	340 U	57 %	64 %	340 U	7200 U
2,4-Dimethylphenol		330 U	340 U	60 %	69 %	340 U	7200 U
bis(2-Chloroethoxy)methane		330 U	340 U	60 %	66 %	340 U	7200 U
2,4-Dichlorophenol		330 U	340 U	64 %	72 %	340 U	7200 U
1,2,4-Trichlorobenzene		330 U	340 U	56 * %	59 * %	340 U	7200 U
Naphthalene		330 U	340 U	55 %	60 %	340 U	7200 U
4-Chloroaniline		330 U	340 U	48 %	51 %	340 U	7200 U
Hexachlorobutadiene		330 U	340 U	56 %	62 %	340 U	7200 U
4-Chloro-3-methylphenol		330 U	340 U	65 %	77 %	340 U	7200 U
2-Methylnaphthalene		330 U	340 U	58 * %	63 %	340 U	7200 U
Hexachlorocyclopentadiene		330 U	340 U	51 %	52 %	340 U	7200 U
2,4,6-Trichlorophenol		330 U	340 U	60 %	62 %	340 U	7200 U
2,4,5-Trichlorophenol		830 U	860 U	68 %	71 %	860 U	18000 U

*= Outside of EPA CLP QC limits.

000000000

Cust ID:	J17FV5		J17FV6		J17FV6		J17FV6		J17FV7		J17FV8	
RFW#:	001		002		002 MS		002 MSD		003		004	
2-Chloronaphthalene	330	U	340	U	60	%	65	%	340	U	7200	U
2-Nitroaniline	830	U	860	U	67	%	77	%	860	U	18000	U
Dimethylphthalate	330	U	340	U	62	%	71	%	340	U	7200	U
Acenaphthylene	330	U	340	U	63	%	69	%	340	U	7200	U
2,6-Dinitrotoluene	330	U	340	U	63	%	70	%	340	U	7200	U
3-Nitroaniline	830	U	860	U	60	%	67	%	860	U	18000	U
Acenaphthene	330	U	340	U	62	%	66	%	340	U	520	J
2,4-Dinitrophenol	830	U	860	U	62	%	66	%	860	U	18000	U
4-Nitrophenol	830	U	860	U	47	%	52	%	860	U	18000	U
Dibenzofuran	330	U	340	U	61	%	66	%	340	U	7200	U
2,4-Dinitrotoluene	330	U	340	U	60	%	66	%	340	U	7200	U
Diethylphthalate	330	U	340	U	62	%	69	%	340	U	7200	U
4-Chlorophenyl-phenylether	330	U	340	U	58	%	64	%	340	U	7200	U
Fluorene	330	U	340	U	60	%	67	%	340	U	7200	U
4-Nitroaniline	830	U	860	U	69	%	73	%	860	U	18000	U
4,6-Dinitro-2-methylphenol	830	U	860	U	77	%	82	%	860	U	18000	U
N-Nitrosodiphenylamine (1)	330	U	340	U	63	%	71	%	340	U	7200	U
4-Bromophenyl-phenylether	330	U	340	U	62	%	67	%	340	U	7200	U
Hexachlorobenzene	330	U	340	U	70	%	83	%	340	U	7200	U
Pentachlorophenol	830	U	860	U	71	%	68	%	860	U	5600	J
Phenanthrene	330	U	340	U	66	%	71	%	340	U	4600	J
Anthracene	330	U	340	U	66	%	71	%	340	U	1500	J
Carbazole	330	U	340	U	74	%	81	%	340	U	940	J
Di-n-butylphthalate	24	J	340	U	66	%	72	%	340	U	7200	U
Fluoranthene	330	U	340	U	63	%	66	%	340	U	5700	J
Pyrene	330	U	340	U	58	%	70	%	340	U	5500	J
Butylbenzylphthalate	330	U	340	U	66	%	75	%	340	U	7200	U
3,3'-Dichlorobenzidine	330	U	340	U	51	%	54	%	340	U	7200	U
Benzo(a)anthracene	330	U	340	U	65	%	72	%	340	U	3800	J
Chrysene	330	U	340	U	66	%	73	%	340	U	4300	J
bis(2-Ethylhexyl)phthalate	100	JB	86	JB	64	%	73	%	70	JB	7200	U
Di-n-octyl phthalate	330	U	340	U	60	%	70	%	340	U	7200	U
Benzo(b)fluoranthene	330	U	340	U	63	%	69	%	340	U	3200	J
Benzo(k)fluoranthene	330	U	340	U	63	%	69	%	340	U	3600	J
Benzo(a)pyrene	330	U	340	U	64	%	72	%	340	U	3700	J
Indeno(1,2,3-cd)pyrene	330	U	340	U	71	%	77	%	340	U	2200	J
Dibenz(a,h)anthracene	330	U	340	U	75	%	82	%	340	U	990	J
Benzo(g,h,i)perylene	330	U	340	U	72	%	77	%	340	U	2500	J

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

000000009

	Cust ID:	SBLKXT		SBLKXT BS	
Sample Information	RFW#:	08LE0431-MB1		08LE0431-MB1	
	Matrix:	SOIL		SOIL	
	D.F.:	1.00		1.00	
	Units:	ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	58	%	74	%
	2-Fluorobiphenyl	61	%	72	%
	Terphenyl-d14	79	%	79	%
	Phenol-d5	57	%	66	%
	2-Fluorophenol	62	%	75	%
	2,4,6-Tribromophenol	25	%	31	%
Phenol		330	U	70	%
bis(2-Chloroethyl)ether		330	U	65	%
2-Chlorophenol		330	U	66	%
1,3-Dichlorobenzene		330	U	63	%
1,4-Dichlorobenzene		330	U	63	%
1,2-Dichlorobenzene		330	U	64	%
2-Methylphenol		330	U	68	%
2,2'-oxybis(1-Chloropropane)		330	U	66	%
3/4 Methylphenol		330	U	69	%
N-Nitroso-di-n-propylamine		330	U	67	%
Hexachloroethane		330	U	63	%
Nitrobenzene		330	U	69	%
Isophorone		330	U	65	%
2-Nitrophenol		330	U	68	%
2,4-Dimethylphenol		330	U	70	%
bis(2-Chloroethoxy)methane		330	U	71	%
2,4-Dichlorophenol		330	U	67	%
1,2,4-Trichlorobenzene		330	U	69	%
Naphthalene		330	U	66	%
4-Chloroaniline		330	U	54	%
Hexachlorobutadiene		330	U	71	%
4-Chloro-3-methylphenol		330	U	72	%
2-Methylnaphthalene		330	U	67	%
Hexachlorocyclopentadiene		330	U	68	%
2,4,6-Trichlorophenol		330	U	39	%
2,4,5-Trichlorophenol		830	U	58	%

*= Outside of EPA CLP QC limits.

000000010

Cust ID: SBLKXT SBLKXT BS

RFW#: 08LE0431-MB1 08LE0431-MB1

2-Chloronaphthalene	330	U	70	%
2-Nitroaniline	830	U	75	%
Dimethylphthalate	330	U	70	%
Acenaphthylene	330	U	74	%
2,6-Dinitrotoluene	330	U	73	%
3-Nitroaniline	830	U	74	%
Acenaphthene	330	U	71	%
2,4-Dinitrophenol	830	U	20	%
4-Nitrophenol	830	U	58	%
Dibenzofuran	330	U	69	%
2,4-Dinitrotoluene	330	U	69	%
Diethylphthalate	330	U	71	%
4-Chlorophenyl-phenylether	330	U	67	%
Fluorene	330	U	71	%
4-Nitroaniline	830	U	76	%
4,6-Dinitro-2-methylphenol	830	U	35 *	%
N-Nitrosodiphenylamine (1)	330	U	64	%
4-Bromophenyl-phenylether	330	U	65	%
Hexachlorobenzene	330	U	79	%
Pentachlorophenol	830	U	53	%
Phenanthrene	330	U	70	%
Anthracene	330	U	70	%
Carbazole	330	U	77	%
Di-n-butylphthalate	330	U	72	%
Fluoranthene	330	U	72	%
Pyrene	330	U	70	%
Butylbenzylphthalate	330	U	73	%
3,3'-Dichlorobenzidine	330	U	73	%
Benzo(a)anthracene	330	U	72	%
Chrysene	330	U	74	%
bis(2-Ethylhexyl)phthalate	46	J	73	%
Di-n-octyl phthalate	330	U	67	%
Benzo(b)fluoranthene	330	U	72	%
Benzo(k)fluoranthene	330	U	69	%
Benzo(a)pyrene	330	U	72	%
Indeno(1,2,3-cd)pyrene	330	U	77	%
Dibenz(a,h)anthracene	330	U	79	%
Benzo(g,h,i)perylene	330	U	79	%

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

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1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17FV5

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

Client: WC-HANFORD RC-029 K1316

Matrix: (soil/water) SOIL

Lab Sample ID: 0809L021-001

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

Lab File ID: D091912

Level: (low/med) LOW

Date Received: 09/04/08

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

Date Extracted: 09/11/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/19/08

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	5.617	300	J
2.	ALDOL CONDENSATE	6.097	400	JAB
3.	UNKNOWN	6.680	100000	JB
4.	UNKNOWN	20.945	900	JB
5.	UNKNOWN	23.870	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17FV6

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

Client: WC-HANFORD RC-029 K1316

Matrix: (soil/water) SOIL

Lab Sample ID: 0809L021-002

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

Lab File ID: D091913

Level: (low/med) LOW

Date Received: 09/04/08

% Moisture: 3 decanted: (Y/N)__

Date Extracted: 09/11/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/19/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.633	80	J
2.	ALDOL CONDENSATE	6.073	300	JAB
3.	UNKNOWN	6.646	80000	JB
4.	ALKANE	28.887	100	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17FV7

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

Client: WC-HANFORD RC-029 K1316

Matrix: (soil/water) SOIL

Lab Sample ID: 0809L021-003

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

Lab File ID: D092110

Level: (low/med) LOW

Date Received: 09/04/08

% Moisture: 3 decanted: (Y/N)__

Date Extracted: 09/11/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/21/08

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	3.293	100	JA
2.	ALDOL CONDENSATE	6.085	500	JAB
3.	UNKNOWN	6.657	200000	JB
4.	UNKNOWN	20.933	200	JB
5.	ALKANE	28.807	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17FV8

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

Client: WC-HANFORD RC-029 K1316

Matrix: (soil/water) SOIL

Lab Sample ID: 0809L021-004

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

Lab File ID: D092111

Level: (low/med) LOW

Date Received: 09/04/08

% Moisture: 8 decanted: (Y/N)__

Date Extracted: 09/11/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/21/08

Injection Volume: 2.0(uL)

Dilution Factor: 20.0

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	6.447	40000	JB
2.	UNKNOWN	29.046	3000	J
3.	UNKNOWN	29.476	3000	J
4.	UNKNOWN	29.936	4000	J
5.	PAH	30.989	5000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKXT

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

Client: WC-HANFORD RC-029 K1316

Matrix: (soil/water) SOIL

Lab Sample ID: 08LE0431-MB1

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

Lab File ID: D091911

Level: (low/med) LOW

Date Received: 09/11/08

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

Date Extracted: 09/11/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/19/08

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	5.269	90	J
2.	ALDOL CONDENSATE	6.098	500	JA
3.	UNKNOWN	6.680	100000	J
4.	ALDOL CONDENSATE	7.959	200	JA
5.	UNKNOWN	20.946	700	J

onville Laboratory Use Only

)889L021

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000017

ent Washington Closure Hanford RC-029

: Final Proj. Sampling Date

ject# 60049-001-001-0001-00

ject Contact/Phone#

nville Laboratory Project Manager Arlette Johnson

SW846 Del STD TAT 15 days

te Rec'd 9-4-08 Date Due 9-19-08

	A	B	C					D		E					
Refrigerator #	6	3	3					3		3					
#/Type Container (Liquid / Solid)	1gl	1gl	1gl					1gl		1gl					
Volume (Solid)	60	250	250					250		250					
Preservatives	—	—	—					—		—					
ANALYSES REQUESTED	ORGANIC							INORG							
	VOA	BNA	Pest/PCB	Herb				Metal + Hg	CN	TPH 418.1	04394				

TRIX DES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	8260	8270	8082 8081				Metal		ODRO					
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP, Leachate, Wipe, Other, Fish	001	J17FV5			S	9-2-08	0730	X	X	~~X~~	9/11/08			X							
	002	J17FV6			↓	↓	0735	X	X	X				X		X					
	003	J17FV7			↓	↓	0738	X	X	X				X		X					
	004	J17FV8 *			↓	↓	0745	X	X	X				X		X					

ecial Instructions: Run matrix QC

Met ① = HSL + B, Mo, S; NOTL

Special Instructions:

* → 1. per client / Do Not analyze pieces of debris. "Focus of Soil".

9/4/08 3. lab report Diesel + Motor Oil

4.

5.

6.

Relinquished by	Received by	Date	Time
Ex	[illegible]	9-4-08	0955

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-029-051 | Page 1 of 1

Collector: WEICHT-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: 100-H-3		SAF No.: RC-029
Ice Chest No.: AFS-06-004	Field Logbook No.: EL-1601-2	COA: C100H3A000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080344		Bill of Lading/Air Bill No.: see ospc

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

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

Sample No.	Matrix *	Sample Date	Sample Time										
17FV5	SOIL	9/2/08	0730	X		X	X						
17FV6	SOIL	9/2/08	0735	X	X	X	X	X					
17FV7 *	SOIL	9/2/08	0738	X	X	X	X	X					
17FV8	SOIL	9/2/08	0745	X	X	X	X	X					
~~17FV9~~ BH 9/2/08	SOIL												

CHAIN OF POSSESSION 9/2/08 — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DWEICHT-KOELLING	9/2/08 0810	BHUDSON	9/2/08 0810
BHUDSON	9/2/08 1610	1060 #3C	9/2/08 1610
1060/3C	9/3/08 0925	MSTANKOVICH	9/3/08 0925
MSTANKOVICH WCH	9/3/08 0925	FED EX	
FED EX	9.4.08 0955		9.4.08 0955

SPECIAL INSTRUCTIONS

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

*J17FV8 - Do not analyze pieces of debris, focus on "soil". Thanx

BH

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

0000000018

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W. C. Hanford Date: 9.4.08

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

LvLI Batch #: 0809L021 Sample Custodian: H. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7980 0495 30
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments;*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received Cooled or ambient?	Temp 3.7	°C	Cooler # AFS-06-004
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.