0076411

SAF-RC-030
Remaining Sites Confirmation Sampling - Other Solid
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 2/13/08
INITIAL/DATE

COMMENTS:

SDG K1097 **SAF-RC-030**

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: 100-F-57

RECEIVED
MAR 0 3 2008
EDMC

LIONVILLE LABORATORY INC.

11 February 2008

RECEIVED FEB 2008

Joan Kessner
WC-Hanford
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 #	0801L496
SDG #	K1097
SAF #	RC-030
Date Received	1/25/08
# Samples	1
Matrix	OTHER SOLID
Volatiles	
Semivolatiles	
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
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\tnu-hanford\data\b_ltrs.doc

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

RECEIVED
FEB 2008

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1097

DATE RECEIVED: 01/25/08 LVL LOT # :0801L496

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J168V7	001	SO	08LE0048	01/21/08	01/30/08	02/02/08
J168V7	001 MS	SO	08LE0048	01/21/08	01/30/08	02/02/08
J168V7	001 MSD	SO	08LE0048	01/21/08	01/30/08	02/02/08

LAB QC:

PBLKMH	MB1	S	08LE0048	N/A	01/30/08	02/02/08
PBLKMH	MB1 BS	S	08LE0048	N/A	01/30/08	02/02/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-030
LVL #: 0801L496
SDG/SAF # K1097 / RC-030

W.O. #: 11343-606-001-9999-00
Date Received: 01-25-2008

PCB

One (1) solid sample was collected on 01-21-2008.

The sample and its associated QC samples was extracted on 01-30-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 02-02-2008. 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. The sample was extracted and analyzed within required holding time
2. The sample and its 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. Two (2) of ten (10) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
5. The blank spike recoveries were within acceptance criteria.
6. The matrix spike recoveries were within acceptance criteria.
7. The initial calibrations associated with this data set were within acceptance criteria.
8. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

r:\group\data\2008\pest\tnu\0801-496sol1.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 10 pages.

LIONVILLE LABORATORY INC.

9. The results for solid samples were reported on an 'as-received basis' as required by the project.

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

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

for Judy Stm

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

8/7/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08GC012

Initiator: CAC
Date: 02-05-08
Client: TNU

Batch: 0801L496
Samples: 001
Method: SW846/MCAWW/CLP/

Parameter: PCB
Matrix: SOLID
Prep Batch: 08LE0048

1. Reason for SDR

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

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

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

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

both surrogate recoveries are high in 001
ok in MS/MSD

2. Known or Probable Causes(s)

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

Other Description:

Sample is a non detect, so high surrogates have no impact on data.
Narrate
DS.

4. Project Manager Instructions...signature/date: jts 2/07/08
✓ 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: KD 02-07-08
__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

Other Explanation:

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
__	X Project Mgr: Stone/Johnson	__	__ GC/LC: Kiger
__	__ Data Management: Stilwell	__	__ MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

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: 02/05/08 07:31

RFW Batch Number: **0801L496** Client: **TNUHANFORD RC-030 K1097** Work Order: 11343606001 Page: 1

000000006

	Cust ID:	J168V7	J168V7	J168V7	PBLKMH	PBLKMH BS
Sample Information	RFW#:	001	001 MS	001 MSD	08LE0048-MB1	08LE0048-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	168 * %	136 %	125 %	101 %	105 %
	Decachlorobiphenyl	158 * %	124 %	118 %	103 %	102 %
		fl	fl	fl	fl	fl
Aroclor-1016		13 U	113 %	110 %	13 U	91 %
Aroclor-1221		13 U	13 U	13 U	13 U	13 U
Aroclor-1232		13 U	13 U	13 U	13 U	13 U
Aroclor-1242		13 U	13 U	13 U	13 U	13 U
Aroclor-1248		13 U	13 U	13 U	13 U	13 U
Aroclor-1254		13 U	13 U	13 U	13 U	13 U
Aroclor-1260		13 U	106 %	101 %	13 U	92 %

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

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 01/30/08 Extraction Batch No: 08LE0048 Analyst: MF Method: **** SD43540

Test: OPCB Cleanup Date: 01/31/08 Analyst: MF Client: BJC BKDD02450A

LIMS Report Date: 01/31/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: H2SO4

Sample No:	Client Name Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0801L494-	BJC BKDD02450A										
001	K1006K-C-WD-01		10.0	1.0		10		1.0	N	0.0	1000.0
001 -S	K1006K-C-WD-01		10.0	1.0	1.0	10		1.0	N	0.0	1000.0
001 -T	K1006K-C-WD-01		10.0	1.0	1.0	10		1.0	N	0.0	1000.0
002	K1066K-C-RE-02		30.0	1.0		10		1.0	N	0.0	333.3
003	K1066K-C-RE-02D		30.0	1.0		10		1.0	N	0.0	333.3
0801L496-	TNUHANFORD RC-030 K1097										
001	J168V7		30.0	1.0		10		1.0	N	0.0	333.3
001 -S	J168V7		30.0	1.0	1.0	10		1.0	N	0.0	333.3
001 -T	J168V7		30.0	1.0	1.0	10		1.0	N	0.0	333.3
0801L497-	TNUHANFORD RC-029 K1098										
002	J168V5		30.0	1.0		10		1.0	N	98.34	339.0
002 -S	J168V5		30.0	1.0	1.0	10		1.0	N	98.34	339.0
002 -T	J168V5		30.0	1.0	1.0	10		1.0	N	98.34	339.0
003	J168V6		30.0	1.0		10		1.0	N	97.44	342.1
08LE0048-MB1	PBLKMH		30.0	1.0		10		1.0	N	100.00	333.3
08LE0048-MB1 -S	PBLKMH		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 250 UL OLM PSURR 89916403
Spike: 250 UL AR1660 89916602

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[illegible]	1/31/08 1500	SZ	1/31/08 15.05	GC

000000007

801L496

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

TNU HANFORD SAF# RC-030

inal Proj. Sampling Date

t# 11343-606-001-9999-00

t Contact/Phone#

lle Laboratory Project Manager O-JOHNSON

SW846 Del STO TAT 15 day

Rec'd 1-25-08 Date Due 2-09-08

		A					B							
Refrigerator #		2					2							
#/Type Container	Liquid													
	Solid	1G					1G							
Volume		60					60							
Preservatives		—					—							
ANALYSES REQUESTED →		ORGANIC					INORG							
		VOA	BNA	~~Pest~~ PCB	Herb		Metal HG	CN						
		Lionville Laboratory Use Only												
				OPCB			Met ①							

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected															
001	J168V7	✓	✓	SO	1-24-08	1330			X					X							

al Instructions:

met ① = HSL + B, mo, Si
(NO TL)

Special Instructions:

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

nquished by	Received by	Date	Time
R Ex	[signature]	1-25-08	0930

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000008

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-030-065	Page 1 of 1
ector elch-Koelling	Company Contact Matt Perrott	Telephone No. 372-9088	Project Coordinator KESSNER, JH	Price Code 9C Data Turnaround 15 Days
ect Designation emaining Sites Confirmation Sampling - Other Solid	Sampling Location 100-F-57		SAF No. RC-030	
Chest No. AFS-06-004	Field Logbook No. EL-1601-2	COA C00F57A000	Method of Shipment FED EX	
oped To BERLINE SERVICES / LIONVILLE	Offsite Property No. A086178		Bill of Lading/Air Bill No. See OSPC	

SSIBLE SAMPLE HAZARDS/REMARKS

ecial Handling and/or Storage

Preservation	None	Cool 4C									
Type of Container	G/P	aG									
No. of Container(s)	1	1									
Volume	60mL	60mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Ty 1-24-08								

Sample No.	Matrix *	Sample Date	Sample Time										
005 BH 1/21/08	OTHER SOLID												
5168V7	OTHER SOLID	1/21/08	1330	X	X								

CHAIN OF POSSESSION	Sign/Print Names		
uished By/Removed From: [signature] Date/Time: 1-21-08 1500	Received By/Stored In: BHUDSON BHudson Date/Time: 1/21/08 1500		
uished By/Removed From: HUDSON BHudson Date/Time: 1610 1/21/08	Received By/Stored In: 3728 #2C Date/Time: 1/21/08 1610		
uished By/Removed From: 728 #2C - 1-24-08 Date/Time: 1000	Received By/Stored In: BMSingleton Date/Time: 1-24-08 1000		
uished By/Removed From: Singleton Date/Time: WCH 1-24-08 1500	Received By/Stored In: FED EX Date/Time:		
uished By/Removed From: ed EX Date/Time: 1-25-08 0930	Received By/Stored In: [signature] Date/Time: 1-25-08 0930		
uished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:		

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (SW-846) [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)

samples from 3728 Ref # 2C
3728 Custodian removed samples for shipping on 1/24/08
Sampler unavailable to relinquish

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

BORATORY ECTION	Received By	Title	Date/Time
AL SAMPLE SPOSITION	Disposal Method	Disposed By	Date/Time

I-EE-011

600000000

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #: RC-030

Date: 1-25-08

LvLI Batch #: 0801L496

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7924 9375 2174
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.2	°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.

SR-002-B.doc

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RECEIVED
FEB 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1097

DATE RECEIVED: 01/25/08 LVL LOT # :0801L496

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J168V7						
SILVER, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
SILVER, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
SILVER, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
ALUMINUM, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
ALUMINUM, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
ALUMINUM, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
ARSENIC, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
ARSENIC, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
ARSENIC, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
BORON, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
BORON, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
BORON, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
BARIUM, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
BARIUM, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
BARIUM, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
BERYLLIUM, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
BERYLLIUM, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
BERYLLIUM, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
CALCIUM, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
CALCIUM, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
CALCIUM, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
CADMIUM, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
CADMIUM, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
CADMIUM, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
COBALT, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
COBALT, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
COBALT, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
CHROMIUM, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
CHROMIUM, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
CHROMIUM, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
COPPER, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
COPPER, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
COPPER, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
IRON, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
IRON, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1097

DATE RECEIVED: 01/25/08 LVL LOT # :0801L496

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
MERCURY, TOTAL	001	SO	08C0016	01/21/08	01/28/08	01/29/08
MERCURY, TOTAL	001 REP	SO	08C0016	01/21/08	01/28/08	01/29/08
MERCURY, TOTAL	001 MS	SO	08C0016	01/21/08	01/28/08	01/29/08
POTASSIUM, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
POTASSIUM, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
POTASSIUM, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
MAGNESIUM, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
MANGANESE, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
MANGANESE, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
MANGANESE, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
MOLYBDENUM, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
SODIUM, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
SODIUM, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
SODIUM, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
NICKEL, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
NICKEL, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
NICKEL, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
LEAD, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
LEAD, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
LEAD, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
ANTIMONY, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
ANTIMONY, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
ANTIMONY, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
SELENIUM, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
SELENIUM, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
SELENIUM, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
SILICON, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
SILICON, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
SILICON, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
VANADIUM, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08
VANADIUM, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
VANADIUM, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08
ZINC, TOTAL	001	SO	08L0041	01/21/08	01/30/08	01/30/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1097

DATE RECEIVED: 01/25/08 LVL LOT # :0801L496

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, TOTAL	001 REP	SO	08L0041	01/21/08	01/30/08	01/30/08
ZINC, TOTAL	001 MS	SO	08L0041	01/21/08	01/30/08	01/30/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
SILVER, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
ALUMINUM LABORTORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
ALUMINUM, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
ARSENIC LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
ARSENIC, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
BORON LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
BORON, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
BARIUM LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
BARIUM, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
BERYLLIUM, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
CALCIUM LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
CALCIUM, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
CADMIUM LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
CADMIUM, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
COBALT LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
COBALT, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
CHROMIUM LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
CHROMIUM, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
COPPER LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
COPPER, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
IRON LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
IRON, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
MERCURY LABORATORY	LC1 BS	S	08C0016	N/A	01/28/08	01/29/08
MERCURY, TOTAL	MB1	S	08C0016	N/A	01/28/08	01/29/08
POTASSIUM LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
POTASSIUM, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
MAGNESIUM, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
MANGANESE LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
MANGANESE, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
MOLYBDENUM LABORATOR	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1097

DATE RECEIVED: 01/25/08 LVL LOT # :0801L496

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MOLYBDENUM, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
SODIUM LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
SODIUM, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
NICKEL LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
NICKEL, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
LEAD LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
LEAD, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
ANTIMONY LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
ANTIMONY, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
SELENIUM LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
SELENIUM, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
SILICON LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
SILICON, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
VANADIUM LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
VANADIUM, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08
ZINC LABORATORY	LC1 BS	S	08L0041	N/A	01/30/08	01/30/08
ZINC, TOTAL	MB1	S	08L0041	N/A	01/30/08	01/30/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-030
LVL#: 0801L496
SDG/SAF#: K1097/RC-030

W.O.#: 11343-606-001-9999-00
Date Received: 01-25-08

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 analysis of 1 solid sample.

2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary. The sample is reported on a wet weight, 'as-received' basis.

   The sample was reported with a 3-fold dilution for ICP metals due to sample matrix. The sample was rerun with a 6-fold dilution for Mercury due to high concentration.

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).

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

6. All preparation/method blanks (MB) were within method criteria {less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

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

8. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.

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

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.

Refer to the Inorganics Accuracy Report.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J168V7	Aluminum	36,000	100.2
	Calcium	66,000	84.7
	Iron	66,000	116.8
	Antimony	300	101.2
	Silicon	6,300	54.0

11. The duplicate analyses for 6 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 Strom

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

2/5/08
Date

jjw/m01-496

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#: 0801L496

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A __3010A __3015 __3020A X3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	X6010B		__200.7				__99
Antimony	X6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X6010B		__200.7				__99
Beryllium	X6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	X6010B		__200.7				__99
Cadmium	X6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	X6010B		__200.7				__99
Chromium	X6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	X6010B		__200.7				__99
Copper	X6010B	__7211 [5]	__200.7	__220.2			__99
Iron	X6010B		__200.7				__99
Lead	X6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	X6010B		__200.7				__99
Manganese	X6010B		__200.7				__99
Mercury	__7470A [3]	X7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	X6010B		__200.7				__99
Nickel	X6010B		__200.7				__99
Potassium	X6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	X6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	X6010B	__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	X6010B		__200.7				__99
Zinc	X6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

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

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/04/08

CLIENT: TNUHANFORD RC-030 K1097

LVL LOT #: 0801L496

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J168V7	Silver, Total	0.29 u	MG/KG	0.29	3.0
		Aluminum, Total	10200	MG/KG	11.5	3.0
		Arsenic, Total	4.6	MG/KG	1.4	3.0
		Boron, Total	12.0	MG/KG	1.4	3.0
		Barium, Total	140	MG/KG	0.29	3.0
		Beryllium, Total	0.56	MG/KG	0.14	3.0
		Calcium, Total	90500	MG/KG	11.5	3.0
		Cadmium, Total	0.26	MG/KG	0.14	3.0
		Cobalt, Total	7.0	MG/KG	0.58	3.0
		Chromium, Total	15.7	MG/KG	0.58	3.0
		Copper, Total	22.6	MG/KG	0.58	3.0
		Iron, Total	15700	MG/KG	13.0	3.0
		Mercury, Total	4.7	MG/KG	0.06	6.0
		Potassium, Total	1320	MG/KG	11.5	3.0
		Magnesium, Total	5480	MG/KG	7.2	3.0
		Manganese, Total	192	MG/KG	0.12	3.0
		Molybdenum, Total	0.99	MG/KG	0.86	3.0
		Sodium, Total	1050	MG/KG	5.8	3.0
		Nickel, Total	13.6	MG/KG	0.58	3.0
		Lead, Total	14.0	MG/KG	0.86	3.0
		Antimony, Total	1.0	MG/KG	0.86	3.0
		Selenium, Total	1.7 u	MG/KG	1.7	3.0
		Silicon, Total	22300	MG/KG	11.5	3.0
		Vanadium, Total	42.2	MG/KG	0.40	3.0
		Zinc, Total	101	MG/KG	1.7	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/04/08

CLIENT: TNUHANFORD RC-030 K1097 LVL LOT #: 0801L496

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0041-MB1	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Aluminum, Total	3.6 u	MG/KG	3.6	1.0
		Arsenic, Total	0.45 u	MG/KG	0.45	1.0
		Boron, Total	0.45 u	MG/KG	0.45	1.0
		Barium, Total	0.26	MG/KG	0.09	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	6.3	MG/KG	3.6	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.18 u	MG/KG	0.18	1.0
		Chromium, Total	0.18 u	MG/KG	0.18	1.0
		Copper, Total	0.18 u	MG/KG	0.18	1.0
		Iron, Total	4.1 u	MG/KG	4.1	1.0
		Potassium, Total	3.6 u	MG/KG	3.6	1.0
		Magnesium, Total	2.3 u	MG/KG	2.3	1.0
		Manganese, Total	0.04	MG/KG	0.04	1.0
		Molybdenum, Total	0.27 u	MG/KG	0.27	1.0
		Sodium, Total	9.6	MG/KG	1.8	1.0
		Nickel, Total	0.18 u	MG/KG	0.18	1.0
		Lead, Total	0.27 u	MG/KG	0.27	1.0
		Antimony, Total	0.27 u	MG/KG	0.27	1.0
		Selenium, Total	0.55 u	MG/KG	0.55	1.0
		Silicon, Total	3.6 u	MG/KG	3.6	1.0
		Vanadium, Total	0.13 u	MG/KG	0.13	1.0
		Zinc, Total	0.55 u	MG/KG	0.55	1.0
BLANK1	08C0016-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/04/08

CLIENT: TNUHANFORD RC-030 K1097 LVL LOT #: 0801L496

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J168V7	Silver, Total	4.5	0.29u	4.8	93.8	3.0
		Aluminum, Total	9930	10200	192	-140. *	3.0
		Arsenic, Total	185	4.6	192	93.9	3.0
		Boron, Total	104	12.0	96.1	96.1	3.0
		Barium, Total	326	140	192	96.8	3.0
		Beryllium, Total	5.1	0.56	4.8	94.5	3.0
		Calcium, Total	93800	90500	2400	137.0*	3.0
		Cadmium, Total	4.7	0.26	4.8	92.4	3.0
		Cobalt, Total	52.6	7.0	48.0	95.0	3.0
		Chromium, Total	38.1	15.7	19.2	116.7	3.0
		Copper, Total	51.3	22.6	24.0	119.6	3.0
		Iron, Total	16500	15700	96.1	863.6*	3.0
		Mercury, Total	5.3	4.7	0.16	368.3*	6.0
		Potassium, Total	3800	1320	2400	103.1	3.0
		Magnesium, Total	7310	5480	2400	75.9	3.0
		Manganese, Total	248	192	48.0	117.5	3.0
		Molybdenum, Total	86.7	0.99	96.1	89.2	3.0
		Sodium, Total	3540	1050	2400	103.7	3.0
		Nickel, Total	61.7	13.6	48.0	100.2	3.0
		Lead, Total	66.6	14.0	48.0	109.6	3.0
		Antimony, Total	36.2	1.0	48.0	73.3	3.0
		Selenium, Total	156	1.7 u	192	81.0	3.0
		Silicon, Total	23800	22300	96.1	1645 *	3.0
		Vanadium, Total	84.8	42.2	48.0	88.8	3.0
		Zinc, Total	143	101	48.0	86.2	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/04/08

CLIENT: TNUHANFORD RC-030 K1097 LVL LOT #: 0801L496

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J168V7	Silver, Total	0.29u	0.29u	NC	3.0
		Aluminum, Total	10200	10000	1.8	3.0
		Arsenic, Total	4.6	5.8	23.1	3.0
		Boron, Total	12.0	12.4	3.3	3.0
		Barium, Total	140	160	13.2	3.0
		Beryllium, Total	0.56	0.54	4.2	3.0
		Calcium, Total	90500	98900	8.8	3.0
		Cadmium, Total	0.26	0.33	22.4	3.0
		Cobalt, Total	7.0	7.6	8.2	3.0
		Chromium, Total	15.7	29.1	59.8	3.0
		Copper, Total	22.6	29.3	25.8	3.0
		Iron, Total	15700	17600	11.6	3.0
		Mercury, Total	4.7	5.0	6.1	6.0
		Potassium, Total	1320	1270	4.3	3.0
		Magnesium, Total	5480	5350	2.4	3.0
		Manganese, Total	192	214	10.8	3.0
		Molybdenum, Total	0.99	1.1	10.1	3.0
		Sodium, Total	1050	990	5.5	3.0
		Nickel, Total	13.6	15.7	14.3	3.0
		Lead, Total	14.0	29.9	72.4	3.0
		Antimony, Total	1.0	0.86u	~~NC~~ 200	3.0
		Selenium, Total	1.7 u	1.7 u	NC	3.0
		Silicon, Total	22300	21700	2.6	3.0
		Vanadium, Total	42.2	43.8	3.7	3.0
		Zinc, Total	101	107	5.5	3.0

corrected value MW 2/4/08

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/04/08

CLIENT: TNUHANFORD RC-030 K1097 LVL LOT #: 0801L496

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0041-LC1	Silver, LCS	46.5	50.0	MG/KG	93.0
		Aluminum, LCS	469	500	MG/KG	93.8
		Arsenic, LCS	895	1000	MG/KG	89.5
		Boron, LCS	455	500	MG/KG	91.0
		Barium, LCS	461	500	MG/KG	92.2
		Beryllium, LCS	24.2	25.0	MG/KG	96.8
		Calcium, LCS	2400	2500	MG/KG	96.0
		Cadmium, LCS	23.8	25.0	MG/KG	95.2
		Cobalt, LCS	240	250	MG/KG	96.2
		Chromium, LCS	48.0	50.0	MG/KG	96.0
		Copper, LCS	118	125	MG/KG	94.6
		Iron, LCS	480	500	MG/KG	96.0
		Potassium, LCS	2310	2500	MG/KG	92.2
		Magnesium, LCS	2270	2500	MG/KG	91.0
		Manganese, LCS	71.8	75.0	MG/KG	95.7
		Molybdenum, LCS	462	500	MG/KG	92.4
		Sodium, LCS	2270	2500	MG/KG	90.9
		Nickel, LCS	190	200	MG/KG	95.0
		Lead, LCS	238	250	MG/KG	95.0
		Antimony, LCS	276	300	MG/KG	92.0
		Selenium, LCS	839	1000	MG/KG	83.9
		Silicon, LCS	454	500	MG/KG	90.7
		Vanadium, LCS	232	250	MG/KG	92.9
		Zinc, LCS	95.0	100	MG/KG	95.0
LCS1	08C0016-LC1	Mercury, LCS	4.6	4.7	MG/KG	97.8

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MERCURY PREPARATION

Logbook # 0326

yst: TEB
1/28/08
Time/Temp: 1415 / 93°
Time/Temp: 1450 / 94°

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

Prep Batch: 08C0016
Worksheet: HG012901
OP 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.
Blank	PT			10mL	50mL	
0.2 µg/L	31	0.100				
1.0	3P	0.500				
2.0	711	1.000				
5.0	PO	2.500				
10.0	3VG	5.000				
ICV	OF	0.125	2.5			
CCV	N4	0.250	5.0			
ICB/CCB	1C					9.50L
MB1	AH			0.30		PBS116 100.00
LC1	S	*	*	0.33		LCSS116
0712L292-001	PA			0.32		86.24
001R	AN			0.34		
001S	857	0.500	1.0	0.36		
001T	1781	0.500	1.0	0.31		
002	B2			0.34		86.08
005	J1			0.31		R 87.50
007	A3			0.36		87.42
008	183			0.33		85.23
010	88			0.30		85.40
012	SM			0.35		84.87
020	N60			0.32		79.82
023	2B			0.32		82.27
025	41			0.31		R 91.53
026	95			0.32		84.77
0801L476-001	290			0.34		93.47
001R	C9			0.33		

Dard:	ID	Prep Date/Time
MS	R16072-75-07B	1/28/08 1040
CCV/LCS	US 6072-75-08A	

Reviewed By/Date: [signature] 1/30/08

see book # 9368 for std traceability information

CS = US Metals in soil No.3; True Value = 4.70 mg/Kg *
gue #1RM-021, Lot # E021

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

gCVAA-Prep1007

Page #:

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MERCURY PREPARATION

Logbook # 0326

lyst: CEB
1/28/08
Time/Temp:
Time/Temp: See page 179

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

Prep Batch: 08C0016
Worksheet: HG012901
OP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes ✓ 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.
0801L476-001S	5H	0.500	1.0	0.34	50mL	93.47
002	R2			0.34		93.11
003	28			0.34		100.00
0801L494-~~001~~ 003	194			0.36		
JEB 11/28/08 ~~001R~~ 003R	871			0.32		
~~001S~~ 003S	X5	0.500	1.0	0.36		
002	AHA			0.39		
JEB 01/28/08 ~~003~~ 1	P18			0.36		
0801L496-001	55			0.31		
001R	A9			0.32		
001S	411	0.500	1.0	0.31		
STD	A901			0.30		

CEB 1/28/08

dard:	ID	Prep Date/Time
UMS		
CCV/LCS	See page 179	

Reviewed By/Date: [signature] 1/30/08

see book # 9368 for std traceability information

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

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

HgCVAA-Prep1007

Page #:

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0041
Date/Time Initiated: 1/30/08 10:30AM
Date/Time Completed: 1/30/08 1:00PM
Analyst(s): MW/KMC
Matrix: Soil Water Other: Solid
Instr. Type: AA ICP
Parameters: See backlog

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

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 Teflon

TNU

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
08OIL496-001		1.04g	100mL	N/A	TO	Not Fine	gray/solid	N/A	N/A
-001R		1.04g							
-001S	1.0mL	1.04g							
08L0041-MB1		1.10g				N/A	Boiling chips		
-LC1	1.0mL	1g							

KMC 1/30/08

Spiking IDs:
MS #: 8100-04-01
-02
-03
8072-072 -01
LCS #: -02
-03
-04
-05

Reagent IDs:
HNO_3 E22071
HCL E40060
H_2O_2 E24A03
1:1 HNO_3 4284-070-06
1:1 HCL

File ID#: IC004101
LIMS Transfer: Y N
Data Review By/Date: updated
RMP. 02/01/08

0011496

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

TNU HANFORD SAF# 030 RC

nal Proj. Sampling Date

t# 11343-606-001-9999-00

t Contact/Phone#

le Laboratory Project Manager O-JOHNSON

SW846 Del STD TAT 15 day

ec'd 1-25-08 Date Due 2-09-08

		A	B
Refrigerator #		2	2
#/Type Container	Liquid		
	Solid	1G	1G
Volume		60	60
Preservatives		–	–

ANALYSES REQUESTED →

	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal HG	CN
	001	J168V7	✓	✓	SO	1-24-08	1330			OPCB		Met ①	

Lionville Laboratory Use Only

l Instructions:

met ① = HSL + B, mo, Si (NO TL)

Special Instructions:

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

nquished by	Received by	Date	Time
L Ex	[signature]	1-25-08	0930

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGIN L REWRITTEN		"COMPOSITE WASTE"	

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Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-030-065	Page 1 of 1
ctor elch-Koelling	Company Contact: Matt Perrott Telephone No.: 372-9088	Project Coordinator: KESSNER, JH	Price Code: 9C Data Turnaround: 15 Days
ct Designation maining Sites Confirmation Sampling - Other Solid	Sampling Location: 100-F-57	SAF No.: RC-030	
hest No.: AFS-06-004	Field Logbook No.: EL-1601-2 COA: C00F57A000	Method of Shipment: FED EX	
ped To BERLINE SERVICES / LIONVILLE	Offsite Property No.: A086178	Bill of Lading/Air Bill No.: See OSPC	

SSIBLE SAMPLE HAZARDS/REMARKS

cial Handling and/or Storage

Preservation	None	Cool 4C									
Type of Container	GP	aG									
No. of Container(s)	1	1									
Volume	60mL	60mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8015									

Sample No.	Matrix *	Sample Date	Sample Time										
005 BH 1/21/08	OTHER SOLID												
5168V7	OTHER SOLID	1/21/08	1330	X	X								

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix *
uished By/Removed From: [illegible] Date/Time: 1-21-08 1500	Received By/Stored In: BHUDSON Date/Time: 1/21/08 1500	(1) ICP Metals - 6010A (SW-846) [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)	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
uished By/Removed From: WDSON Date/Time: 1610 1/21/08	Received By/Stored In: 3728 #2C Date/Time: 1/21/08 1610		
uished By/Removed From: 728 #2C - 1-24-08 Date/Time: 1000	Received By/Stored In: BMSingleton Date/Time: 1-24-08 1000	samples from 3728 Ref # 2C. 3728 Custodian removed samples for shipping on 1/24/08. Sampler unavailable to relinquish	
uished By/Removed From: Singleton Date/Time: 1-24-08 1500	Received By/Stored In: FED EX Date/Time: WCH		
uished By/Removed From: ed Ex Date/Time: 1-25-08 0930	Received By/Stored In: [illegible] Date/Time: 1-25-08 0930		
uished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:		

ORATORY ECTION	Received By	Title	Date/Time
AL SAMPLE POSITION	Disposal Method	Disposed By	Date/Time

-EE-011

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Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 1-25-08

Project/SAF/SOW/Release #: RC-030

LvLI Batch #: 0801L496

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7924 9375 2174
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.2	°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.

SR-002-B.doc

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