0076073

SAF-RC-032
100-F Remaining Sites Burial Grounds - Soil Full Protocol
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Randy Coffman	X9-07	KW 1/08/08 INITIAL/DATE
Kathy Wendt	H4-21	KW 1/08/08 INITIAL/DATE

COMMENTS:

SDG K1066 SAF-RC-032

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: **120-F-1 Glass Dump SE Verification**

RECEIVED
JAN 1 0 2008
EDMC

LIONVILLE LABORATORY INC.

RECEIVED JAN 2008

4 January 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 #	0712L342
SDG #	K1066
SAF #	RC-032
Date Received	12/20/07
# Samples	7
Matrix	SOIL
Volatiles	
Semivolatiles	X
Pest/PCB	X
PAH	
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory 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
JAN 2008

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16337	001 R1	S	07LE0726	12/17/07	12/31/07	01/02/08
J16337	001 MS R1	S	07LE0726	12/17/07	12/31/07	01/02/08
J16337	001 MSD R1	S	07LE0726	12/17/07	12/31/07	01/02/08
J16338	002	S	07LE0720	12/17/07	12/26/07	12/28/07
J16339	003	S	07LE0720	12/17/07	12/26/07	12/28/07
J16340	004	S	07LE0720	12/17/07	12/26/07	12/28/07
J16341	005	S	07LE0720	12/17/07	12/26/07	12/28/07
J16342	006	S	07LE0720	12/17/07	12/26/07	12/28/07

LAB QC:

PBLKLF	MB1	S	07LE0726	N/A	12/31/07	01/02/08
PBLKLF	MB1 BS	S	07LE0726	N/A	12/31/07	01/02/08
PBLKLC	MB1	S	07LE0720	N/A	12/26/07	12/27/07
PBLKLC	MB1 BS	S	07LE0720	N/A	12/26/07	12/27/07

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-032
LVL #: 0712L342
SDG/SAF # K1066 / RC-032

W.O. #: 11343-606-001-9999-00
Date Received: 12-19-2007

PCB

Six (6) soil samples were collected on 12-17-2007.

The samples and their associated QC samples were extracted on 12-26,31-2007 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 12-27,28-2007 and 01-02-2007. 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. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.

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

3. 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.

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

5. All surrogate recoveries were within acceptance criteria.

6. All blank spike recoveries were within acceptance criteria.

7. All matrix spike recoveries were within acceptance criteria.

8. The initial calibrations associated with this data set were within acceptance criteria.

9. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

r:\group\data\pest\tnu hanford\0712-342ks2.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 12 pages.

LvLI
LIONVILLE LABORATORY INC.

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

1/4/08
Date

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

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: 01/03/08 09:00

RFW Batch Number: 0712L342 Client: TNU-HANFORD RC-032 Work Order: 11343606001 Page: 1

000000005

	Cust ID:	J16337		J16337		J16337		J16338		J16339		J16340	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
		REPREP		REPREP		REPREP							
Surrogate:	Tetrachloro-m-xylene	96	%	100	%	108	%	105	%	99	%	96	%
	Decachlorobiphenyl	100	%	100	%	114	%	102	%	99	%	97	%
			fl		fl		fl		fl		fl		fl
Aroclor-1016		14	U	95	%	109	%	14	U	14	U	14	U
Aroclor-1221		14	U	14	U	14	U	14	U	14	U	14	U
Aroclor-1232		14	U	14	U	14	U	14	U	14	U	14	U
Aroclor-1242		14	U	14	U	14	U	14	U	14	U	14	U
Aroclor-1248		14	U	14	U	14	U	14	U	14	U	14	U
Aroclor-1254		14	U	14	U	14	U	14	U	14	U	14	U
Aroclor-1260		14	U	112	%	107	%	14	U	14	U	14	U

	Cust ID:	J16341		J16342		PBLKLF		PBLKLF BS		PBLKLC		PBLKLC BS	
Sample Information	RFW#:	005		006		07LE0726-MB1		07LE0726-MB1		07LE0720-MB1		07LE0720-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	109	%	104	%	102	%	106	%	91	%	106	%
	Decachlorobiphenyl	102	%	100	%	97	%	104	%	102	%	101	%
			fl		fl		fl		fl		fl		fl
Aroclor-1016		15	U	15	U	13	U	100	%	13	U	89	%
Aroclor-1221		15	U	15	U	13	U	13	U	13	U	13	U
Aroclor-1232		15	U	15	U	13	U	13	U	13	U	13	U
Aroclor-1242		15	U	15	U	13	U	13	U	13	U	13	U
Aroclor-1248		15	U	15	U	13	U	13	U	13	U	13	U
Aroclor-1254		23		15	U	13	U	13	U	13	U	13	U
Aroclor-1260		9.8	J	15	U	13	U	111	%	13	U	97	%

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: 12/26/07 Extraction Batch No: 07LE0720 Analyst: MF Method: **** SOX3540

Test: OPCB Cleanup Date: 12/27/07 Analyst: MF Client: TNU-HANFORD RC-032

LIMS Report Date: 12/31/07 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
0712L342-	TNU-HANFORD RC-032										
001	J16337		30.0	1.0		10		1.0	N	95.84	347.8
001 -S	J16337		30.0	1.0	1.0	10		1.0	N	95.84	347.8
001 -T	J16337		30.0	1.0	1.0	10		1.0	N	95.84	347.8
002	J16338		30.0	1.0		10		1.0	N	94.86	351.4
003	J16339		30.0	1.0		10		1.0	N	95.39	349.4
004	J16340		30.0	1.0		10		1.0	N	95.55	348.9
005	J16341		30.0	1.0		10		1.0	N	91.48	364.4
006	J16342		30.0	1.0		10		1.0	N	90.82	367.0
0712L366-	NSTEC #V3032										
001	120401-V1		30.0	1.0		10		1.0	N	85.57	389.5
001 -S	120401-V1		30.0	1.0	1.0	10		1.0	N	85.57	389.5
001 -T	120401-V1		30.0	1.0	1.0	10		1.0	N	85.57	389.5
002	120401-V2		30.0	1.0		10		1.0	N	90.21	369.5
003	120401-V3		30.0	1.0		10		1.0	N	90.20	369.5
004	120401-V4		30.0	1.0		10		1.0	N	93.28	357.3
005	120401-V5		30.0	1.0		10		1.0	N	93.02	358.3
006	120401-V6		30.0	1.0		10		1.0	N	92.64	359.8
07LE0720-MB1	PBLKLC		30.0	1.0		10		1.0	N	100.00	333.3
07LE0720-MB1 -S	PBLKLC		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 250 UL OLM PSURR 89916402
Spike: 250 UL AR1660 89916601

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[illegible]	12/27/07 1600	LX	12/27/07	Analysis

000000006

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 12/31/07 Extraction Batch No: 07LE0726 Analyst: MF Method: **** SOX3540

Test: OPCB Cleanup Date: 01/02/08 Analyst: MF Client: TNU-HANFORD RC-032

LIMS Report Date: 01/02/08 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
0712L342-	TNU-HANFORD RC-032										
001	R1 J16337		30.0	1.0		10		1.0	N	95.84	347.8
001 -SR1	J16337		30.0	1.0	1.0	10		1.0	N	95.84	347.8
001 -TR1	J16337		30.0	1.0	1.0	10		1.0	N	95.84	347.8
0712L363-	TNU-HANFORD RC-022										
012	J163X1		0.5	1.0		10		1.0	N	0.00	20000
013	J163X2		0.5	1.0		10		1.0	N	0.00	20000
013 -S	J163X2		0.5	1.0	1.0	10		1.0	N	0.00	20000
013 -T	J163X2		0.5	1.0	1.0	10		1.0	N	0.00	20000
014	J163X3		0.5	1.0		10		1.0	N	0.00	20000
0712L364-	ISOTEK										
001	2454102-107/108-001		10	1.0		10		1.0	N	0.00	1000.0
001 -S	2454102-107/108-001		10	1.0	1.0	10		1.0	N	0.00	1000.0
001 -T	2454102-107/108-001		10	1.0	1.0	10		1.0	N	0.00	1000.0
07LE0726-MB1	PBLKLF		30	1.0		10		1.0	N	100.00	333.3
07LE0726-MB1 -S	PBLKLF		30	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 250 UL OLM PSURR 89916402
Spike: 250 UL AR1660 89916605

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	1/2/08 1140	SZ	1/02/08	GC

000000007

onville Laboratory Use Only

07121342

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

00000008

mt TNU HANFORD SAF# RC-032

. Final Proj. Sampling Date

ject# 11343-606-001-9999-00

ject Contact/Phone#

nville Laboratory Project Manager U. JOHNSON

SW846 Del STD TAT 14 DAY

e Rec'd 12-19-07 Date Due 1-3-08

	A	B	C	D	EF	G	H
Refrigerator #	2	2	2	2	2	2	2
#/Type Container (Liquid / Solid)	1G	1G	1G	1G	1P	1G	1P
Volume	120	60	120	120	125	120	125
Preservatives	—	—	—	—	—	—	—
ANALYSES REQUESTED	ORGANIC: VOA, TCL BNA 8270A, PCB 8082, Pest Herb 8081			TOT. TPH 418.1	INORG: 6010 Metals, Hg 7470, TCN 9010, Sulfide 9030		IC Anions 300.0/9056 (Soil)

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

Lionville Laboratory Use Only

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	TCL BNA 8270A	PCB 8082	Pest Herb 8081	TPH 418.1	Met①	TCN 9010	Sulfide 9030	IC①	TPH 9045
001	J163337			SOIL	12-17-07	0855					X	X	X	X	X	X
002	J163338			SOIL	12-17-07	1240					X	X	X	X	X	X
003	J163339			SOIL	12-17-07	0905					X	X	X	X	X	X
004	J163340			SOIL	12-17-07	0915					X	X	X	X	X	X
005	J163341			SOIL	12-17-07	0925					X	X	X	X	X	X
006	J163342			SOIL	12-17-07	0930					X	X	X	X	X	X
007	J163354			SOIL	12-17-07	0940										

Special Instructions:

Met① = HSL + B, Mo, Si (NO TL)

IC① = ICBR, ICCL, ICFL, ICNO2, ICNO3, ICSO4, ICPO4

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	12-19-07	1500

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-032-177	Page 2 of 2

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 120-F-1 Glass Dump SE Verification		SAF No.: RC-032
Ice Chest No.: EBC-99-046	Field Logbook No.: EFL-1174-4	COA: R120F12000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080108		Bill of Lading/Air Bill No.: See OSIC

Price Code: 8B

Data Turnaround: 7DAY

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	P	aG	aG	P	aG	aG	aG				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	60mL	120mL	125mL	120mL	120mL	120mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	IC Anions - 300.0; pH (Soil) - 9045	Total Cyanide - 9010; Sulfides - 9030	Pesticides - 8081	TPH (Total) - 418.1				
Sample No. / Matrix * / Sample Date / Sample Time											
I16337 / SOIL / 12-17-07 / 0855	X	X	X	X	X	X	X				5
I16338 / SOIL / 12-17-07 / 1240	X	X	X	X	X	X	X				6
I16339 / SOIL / 12-17-07 / 0905	X	X	X	X	X	X	X				7
I16340 / SOIL / 12-17-07 / 0915	X	X	X	X	X	X	X				8
I16341 / SOIL / 12-17-07 / 0925	X	X	X	X	X	X	X				9

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	12-17-07 1354	JR DeBuigne JR DeBuigne	1354 12-17-07
JR DeBuigne JR DeBuigne	12-17-07 1445	3728/2C	1445 12-17-07
3728/2C	12-18-07 0900	[signature]	12-18-07 0900
[signature]	12-18-07 1500	FED EX	
Fed Ex	12-18-07	[signature]	12-19-07 1500

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (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)

samples from 3728 Ref # 2C
3728 Custodian removed samples for
shipping on 12/18/07.
Sampler unavailable to relinquish

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

000000009

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-177	Page 1 of 1

Collector	Company Contact / Telephone No.	Project Coordinator	Price Code	Data Turnaround
T. Welch-Koelling	R.T. Coffman / 528-6409	KESSNER, JH	8B	7DAY

Project Designation	Sampling Location	SAF No.
100-F Remaining Sites Burial Grounds - Soil Full Protocol	120-F-1 Glass Dump SE Verification	RC-032

Ice Chest No.	Field Logbook No.	COA	Method of Shipment
ERC-99-046	EFL-1174-4	R120F12000	FED EX

Shipped To	Offsite Property No.	Bill of Lading/Air Bill No.
EBERLINE SERVICES (LIONVILLE)	A080108	See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	P	aG	aG	P	aG	aG	aG				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	60mL	120mL	125mL	120mL	120mL	120mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	IC Anions - 300.0; pH (Soil) - 9045	Total Cyanide - 9010; Sulfides - 9030	Pesticides - 8081	TPH (Total) - 418.1				
Sample No. / Matrix * / Sample Date / Sample Time											
J16342 / SOIL / 12-17-07 / 0930	X	X	X	X	X	X	X				10
J16354 / SOIL / 12-17-07 / 0940	X										EB

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	12-17-07 1354	JR DeBusque JR DeBusque	1354 12-17-07
JR DeBusque JR DeBusque	12-17-07 1445	3728/2C	1445 12-17-07
3728/2C	12-18-07 0900	K M Singleton	12-18-07 0900
K M Singleton	12-18-07 1500	FED EX	
Fed Ex	12-19-07 1500	[illegible]	12-19-07 1500

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (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)

samples from 3728 Ref # 2C
3728 Custodian removed samples for shipping on 12/18/07
Sampler unavailable to relinquish

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

VCH-EE-011

000000010

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAP/SOW/Release #: RC-032

Date: 12-19-07

LvLI Batch #: 0712L342

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7914 5895 7232
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4.1°	°C	Cooler # ERC-99-046
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 _____

lvl l

RECEIVED
JAN 2008

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16337	001 R1	S	07LE0726	12/17/07	12/31/07	01/02/08
J16337	001 MS R1	S	07LE0726	12/17/07	12/31/07	01/02/08
J16337	001 MSD R1	S	07LE0726	12/17/07	12/31/07	01/02/08
J16338	002	S	07LE0720	12/17/07	12/26/07	12/28/07
J16339	003	S	07LE0720	12/17/07	12/26/07	12/28/07
J16340	004	S	07LE0720	12/17/07	12/26/07	12/28/07
J16341	005	S	07LE0720	12/17/07	12/26/07	12/28/07
J16342	006	S	07LE0720	12/17/07	12/26/07	12/28/07

LAB QC:

PBLKLF	MB1	S	07LE0726	N/A	12/31/07	01/02/08
PBLKLF	MB1 BS	S	07LE0726	N/A	12/31/07	01/02/08
PBLKLC	MB1	S	07LE0720	N/A	12/26/07	12/28/07
PBLKLC	MB1 BS	S	07LE0720	N/A	12/26/07	12/28/07

1

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-032
LVL #: 0712L342
SDG/SAF # K1066 / RC-032

W.O. #: 11343-606-001-9999-00
Date Received: 12-19-2007

CHLORINATED PESTICIEDS

Six (6) soil samples were collected on 12-17-2007.

The samples and their associated QC samples were extracted on 12-26,31-2007 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 12-28-2007 and 01-02-2007. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

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

1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. All samples required 4-fold instrument dilution due to their matrix.
8. The initial calibrations associated with this data set were within acceptance criteria.
9. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

r:\group\data\pest\tnu hanford\0712-342ks2.pst.doc

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

LIONVILLE LABORATORY INC.

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

1/4/08
Date

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

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.
.1	=	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.

Pesticide/PCBs by GC, CLP List

Report Date: 01/03/08 08:32

RFW Batch Number: **0712L342** Client: **TNU-HANFORD RC-032** Work Order: 11343606001 Page: 1

000000005

	Cust ID:	J16337		J16337		J16337		J16338		J16339		J16340	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	4.00		4.00		4.00		4.00		4.00		4.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
		REPREP		REPREP		REPREP							
Surrogate:	Tetrachloro-m-xylene	94	%	91	%	100	%	92	%	89	%	86	%
	Decachlorobiphenyl	91	%	83	%	92	%	94	%	90	%	84	%
			fl		fl		fl		fl		fl		fl
Alpha-BHC		1.4	U	98	%	110	%	1.4	U	1.4	U	1.4	U
gamma-BHC (Lindane)		1.4	U	101	%	112	%	1.4	U	1.4	U	1.4	U
Beta-BHC		1.4	U	104	%	113	%	1.4	U	1.4	U	1.4	U
Heptachlor		1.4	U	97	%	107	%	1.4	U	1.4	U	1.4	U
Delta-BHC		1.4	U	91	%	103	%	1.4	U	1.4	U	1.4	U
Aldrin		1.4	U	99	%	110	%	1.4	U	1.4	U	1.4	U
Heptachlor epoxide		1.4	U	100	%	110	%	1.4	U	1.4	U	1.4	U
gamma-Chlordane		1.4	U	98	%	109	%	8.2		1.4	U	1.4	U
Endosulfan I		1.4	U	100	%	110	%	1.4	U	1.4	U	1.4	U
alpha-Chlordane		1.4	U	99	%	109	%	8.6		1.4	U	1.4	U
4,4'-DDE		1.4	U	102	%	113	%	1.4	U	1.4	U	1.4	U
Dieldrin		1.4	U	98	%	109	%	1.4	U	1.4	U	1.4	U
Endrin		1.4	U	98	%	108	%	1.4	U	1.4	U	1.4	U
4,4'-DDD		1.4	U	98	%	107	%	1.4	U	1.4	U	1.4	U
Endosulfan II		1.4	U	100	%	108	%	1.4	U	1.4	U	1.4	U
4,4'-DDT		1.4	U	100	%	108	%	1.4	U	1.4	U	1.4	U
Endrin aldehyde		1.4	U	94	%	102	%	1.4	U	1.4	U	1.4	U
Endosulfan sulfate		1.4	U	93	%	100	%	1.4	U	1.4	U	1.4	U
Methoxychlor		1.4	U	116	%	108	%	1.4	U	1.4	U	1.4	U
Endrin ketone		1.4	U	99	%	110	%	1.4	U	1.4	U	1.4	U
Toxaphene		14	U	14	U	14	U	14	U	14	U	14	U

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

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 01/03/08 08:32

RFW Batch Number: 0712L342 Client: TNU-HANFORD RC-032 Work Order: 11343606001 Page: 2

000000006

	Cust ID:	J16341		J16342		PBLKLF		PBLKLF BS		PBLKLC		PBLKLC BS	
Sample Information	RFW#:	005		006		07LE0726-MB1		07LE0726-MB1		07LE0720-MB1		07LE0720-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	4.00		4.00		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	94	%	93	%	78	%	83	%	76	%	88	%
	Decachlorobiphenyl	91	%	92	%	74	%	81	%	76	%	79	%
			fl		fl		fl		fl		fl		fl
Alpha-BHC		1.5	U	1.5	U	0.33	U	104	%	0.33	U	88	%
gamma-BHC (Lindane)		1.5	U	1.5	U	0.33	U	101	%	0.33	U	98	%
Beta-BHC		1.5	U	1.5	U	0.33	U	96	%	0.33	U	94	%
Heptachlor		1.5	U	1.5	U	0.33	U	96	%	0.33	U	90	%
Delta-BHC		1.5	U	1.5	U	0.33	U	96	%	0.33	U	86	%
Aldrin		1.5	U	1.5	U	0.33	U	104	%	0.33	U	95	%
Heptachlor epoxide		1.5	U	1.5	U	0.33	U	100	%	0.33	U	95	%
gamma-Chlordane		1.5	U	1.5	U	0.33	U	103	%	0.33	U	97	%
Endosulfan I		1.8	J	1.5	U	0.33	U	102	%	0.33	U	106	%
alpha-Chlordane		1.5	U	1.5	U	0.33	U	101	%	0.33	U	98	%
4,4'-DDE		1.8	J	1.5	U	0.33	U	109	%	0.33	U	114	%
Dieldrin		1.5	U	1.5	U	0.33	U	106	%	0.33	U	100	%
Endrin		1.5	U	1.5	U	0.33	U	105	%	0.33	U	99	%
4,4'-DDD		1.5	U	1.5	U	0.33	U	106	%	0.33	U	111	%
Endosulfan II		1.5	U	1.5	U	0.33	U	102	%	0.33	U	100	%
4,4'-DDT		1.7	J.I	1.5	U	0.33	U	109	%	0.33	U	104	%
Endrin aldehyde		1.5	U	1.5	U	0.33	U	89	%	0.33	U	88	%
Endosulfan sulfate		1.5	U	1.5	U	0.33	U	100	%	0.33	U	95	%
Methoxychlor		1.5	U	1.5	U	0.33	U	99	%	0.33	U	93	%
Endrin ketone		1.5	U	1.5	U	0.33	U	104	%	0.33	U	96	%
Toxaphene		15	U	15	U	3.3	U	3.3	U	3.3	U	3.3	U

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

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 12/26/07 Extraction Batch No: 07LE0720 Analyst: MF Method: **** 5078J90

Test: O608 Cleanup Date: Analyst: Client: TNU-HANFORD RC-032

LIMS Report Date: 12/31/07 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
0712L342-	TNU-HANFORD RC-032										
001 H	J16337		30.0	1.0		10		1.0	N	95.84	347.8
001 HS	J16337		30.0	1.0	1.0	10		1.0	N	95.84	347.8
001 HT	J16337		30.0	1.0	1.0	10		1.0	N	95.84	347.8
002 H	J16338		30.0	1.0		10		1.0	N	94.86	351.4
003 H	J16339		30.0	1.0		10		1.0	N	95.39	349.4
004 H	J16340		30.0	1.0		10		1.0	N	95.55	348.9
005 H	J16341		30.0	1.0		10		1.0	N	91.48	364.4
006 H	J16342		30.0	1.0		10		1.0	N	90.82	367.0
07LE0720-MB1 H	PBLKLC		30.0	1.0		10		1.0	N	100.00	333.3
07LE0720-MB1 HS	PBLKLC		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 250 UL OLM PSURR 89916402
Spike: 250 UL FULL LIST PEST SPIKE 8915506

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	12/27/07 1600	[illegible]	12-27-07	Analysis

000000007

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 12/31/07 Extraction Batch No: 07LE0726 Analyst: MF Method: **** SEX 3540

Test: O608 Cleanup Date: Analyst: Client: TNU-HANFORD RC-032

LIMS Report Date: 01/02/08 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
0712L342-	TNU-HANFORD RC-032										
001 H R1	J16337		30.0	1.0		10		1.0	N	95.84	347.8
001 HSR1	J16337		30.0	1.0	1.0	10		1.0	N	95.84	347.8
001 HTR1	J16337		30.0	1.0	1.0	10		1.0	N	95.84	347.8
07LE0726-MB1 H	PBLKLF		30.0	1.0		10		1.0	N	100.00	333.3
07LE0726-MB1 HS	PBLKLF		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 250 UL OLM PSURR 89916402
Spike: 250 UL PEST SPIKE 89915506

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	1/2/08 1140	SZ	1/02/08	GC

000000008

nville Laboratory Use Only

7712L342

Custody Transfer Record/Lab Work Request

Page 1 of 1

See Orig

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

nt TNU HANFORD SAF# RC-032

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

nville Laboratory Project Manager U. JOHNSON

SW846 Del STD TAT 28 Day

e Rec'd 12-19-07 Date Due 1-3-08

	A	B	C	D	EF	G	H
Refrigerator #	2	2	2	2	2	2	2
#/Type Container (Liquid / Solid)	1G	1G	1G	1G	1P	1G	1P
Volume	120	60	120	120	125	120	125
Preservatives	—	—	—	—	—	—	—
ANALYSES REQUESTED	VOA	ORGANIC: TCL BNA 8270A; PCB 8082; Pest 8081		TOT. TPH HHS-1	INORG: 6010 Metal; CN 9010	Pesticide 8080	IC ANIONS 300.0; pH (soil) 9045

Matrix: 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	Lionville Laboratory Use Only: 0625H	OPCB	0608H	ITPH	Met①	ICNTO	ISFO	IC①	IPH
001	J 163 37			SOIL	12-17-07	0855	X	X	X	X	X	X	X	X	X
002	J 163 38			SOIL	12-17-07	1240	X	X	X	X	X	X	X	X	X
003	J 163 39			SOIL	12-17-07	0905	X	X	X	X	X	X	X	X	X
004	J 163 40			SOIL	12-17-07	0915	X	X	X	X	X	X	X	X	X
005	J 163 41			SOIL	12-17-07	0925	X	X	X	X	X	X	X	X	X
006	J 163 42			SOIL	12-17-07	0930	X	X	X	X	X	X	X	X	X
007	J 163 54			SOIL	12-17-07	0940					X				

Special Instructions:

Met① = HSL + B, Mo, Si (NO TL)

IC① = ICBR, ICCL, ICFL, ICNO2, ICNO3, ICSO4, ICPO4

Special Instructions:

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

Relinquished by	Received by	Date	Time
LEL	[illegible]	12-19-07	1500

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000000

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-177	Page 2 of 3

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman — Telephone No.: 528-6409	Project Coordinator: KESSNER, JH	Price Code: 8B — Data Turnaround: 7DAY
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 120-F-1 Glass Dump SE Verification	SAF No.: RC-032	
Ice Chest No.: ERC-99-046	Field Logbook No.: EFL-1174-4 — COA: R120F12000	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080108	Bill of Lading/Air Bill No.: See 051C	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	P	aG	aG	P	aG	aG	aG			
No. of Container(s)	2	1	1	1	1	1	1			
Volume	125mL	60mL	120mL	125mL	120mL	120mL	120mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	IC Anions - 300.0; pH (Soil) - 9045	Total Cyanide - 9010; Sulfides - 9030	Pesticides - 8081	TPH (Total) - 418.1			

Sample No.	Matrix *	Sample Date	Sample Time										
16337	SOIL	12-17-07	0855	X	X	X	X	X	X	X			5
16338	SOIL	12-17-07	1240	X	X	X	X	X	X	X			6
16339	SOIL	12-17-07	0905	X	X	X	X	X	X	X			7
16340	SOIL	12-17-07	0915	X	X	X	X	X	X	X			8
16341	SOIL	12-17-07	0925	X	X	X	X	X	X	X			9

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 12-17-07 1354	Received By/Stored In	Date/Time 1354 12-17-07
Relinquished By/Removed From	Date/Time 1445 12-17-07	Received By/Stored In	Date/Time 1445 12-17-07
Relinquished By/Removed From	Date/Time 12-18-07 0900	Received By/Stored In	Date/Time 12-18-07 0900
Relinquished By/Removed From	Date/Time 12-18-07 1300	Received By/Stored In	Date/Time FED EX
Relinquished By/Removed From	Date/Time 12-18-07	Received By/Stored In	Date/Time 12-18-07 1500
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (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)

samples from 3728 Ref # 2C
3728 Custodian removed samples for shipping on 12/18/07.
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

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

CH-EE-011

010000010

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-177	Page 1 of 1

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Pull Protocol	Sampling Location: 120-F-1 Glass Dump SE Verification		SAF No.: RC-032
Ice Chest No.: EBC-99-046	Field Logbook No.: EFL-1174-4	COA: R120F12000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A080108		Bill of Lading/Air Bill No.: See OSPC

Price Code: 8B

Data Turnaround: 7DAY

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	P	aG	aG	P	aG	aG	aG				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	60mL	120mL	125mL	120mL	120mL	120mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	IC Anions - 300.0; pH (Soil) - 9045	Total Cyanide - 9010; Sulfides - 9030	Pesticides - 8081	TPH (Total) - 418.1				
Sample No. / Matrix * / Sample Date / Sample Time											
J16342 / SOIL / 12-17-07 / 0930	X	X	X	X	X	X	X				10
J16354 / SOIL / 12-17-07 / 0940	X										EB

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: [illegible]	Received By/Stored In: JR DeBusque JR DeBusque	12-17-07 1354
Relinquished By/Removed From: JR DeBusque JR DeBusque	Received By/Stored In: 3728/2C	12-17-07 1445
Relinquished By/Removed From: 3728/2C	Received By/Stored In: K M Singleton	12-18-07 0900
Relinquished By/Removed From: K M Singleton	Received By/Stored In: FED EX	12-18-07 1500
Relinquished By/Removed From: FED EX	Received By/Stored In: Victor Hernandez	12-19-07 1500
Relinquished By/Removed From:	Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (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)

samples from 3728 Ref # 2C.
3728 Custodian removed samples for shipping on 12/18/07.
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

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

VCH-EE-011

0000000011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAP/SOW/Release #: RC-032

Date: 12-19-07

LvLI Batch #: 0712L342

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7914 5895 7232
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4.1	°C	Cooler # ERC-99-046
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

RECEIVED
JAN 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16337						
% SOLIDS	001	S	07L%S155	12/17/07	12/21/07	12/21/07
BROMIDE BY IC	001	S	07LIC079	12/17/07	12/21/07	12/21/07
BROMIDE BY IC	001 REP	S	07LIC079	12/17/07	12/21/07	12/26/07
BROMIDE BY IC	001 MS	S	07LIC079	12/17/07	12/21/07	12/21/07
CHLORIDE BY IC	001	S	07LIC079	12/17/07	12/21/07	12/21/07
CHLORIDE BY IC	001 REP	S	07LIC079	12/17/07	12/21/07	12/26/07
CHLORIDE BY IC	001 MS	S	07LIC079	12/17/07	12/21/07	12/21/07
FLUORIDE BY IC	001	S	07LIC079	12/17/07	12/21/07	12/21/07
FLUORIDE BY IC	001 REP	S	07LIC079	12/17/07	12/21/07	12/26/07
FLUORIDE BY IC	001 MS	S	07LIC079	12/17/07	12/21/07	12/21/07
NITRITE BY IC	001	S	07LIC079	12/17/07	12/21/07	12/21/07
NITRITE BY IC	001 REP	S	07LIC079	12/17/07	12/21/07	12/26/07
NITRITE BY IC	001 MS	S	07LIC079	12/17/07	12/21/07	12/21/07
NITRATE BY IC	001	S	07LIC079	12/17/07	12/21/07	12/21/07
NITRATE BY IC	001 REP	S	07LIC079	12/17/07	12/21/07	12/26/07
NITRATE BY IC	001 MS	S	07LIC079	12/17/07	12/21/07	12/21/07
TOTAL CYANIDE	001	S	07LC065	12/17/07	12/26/07	12/26/07
PHOSPHATE BY IC	001	S	07LIC079	12/17/07	12/21/07	12/21/07
PHOSPHATE BY IC	001 REP	S	07LIC079	12/17/07	12/21/07	12/26/07
PHOSPHATE BY IC	001 MS	S	07LIC079	12/17/07	12/21/07	12/21/07
SULFATE BY IC	001	S	07LIC079	12/17/07	12/21/07	12/26/07
SULFATE BY IC	001 REP	S	07LIC079	12/17/07	12/21/07	12/26/07
SULFATE BY IC	001 MS	S	07LIC079	12/17/07	12/21/07	12/26/07
PH	001	S	07LPH080	12/17/07	12/26/07	12/26/07
PH	001 REP	S	07LPH080	12/17/07	12/26/07	12/26/07
PETROLEUM HYDROCARBO	001	S	07LHC047	12/17/07	12/26/07	12/31/07
SULFIDE	001	S	07LSD028	12/17/07	12/21/07	12/21/07
J16338						
% SOLIDS	002	S	07L%S155	12/17/07	12/21/07	12/21/07
BROMIDE BY IC	002	S	07LIC079	12/17/07	12/21/07	12/21/07
CHLORIDE BY IC	002	S	07LIC079	12/17/07	12/21/07	12/21/07
FLUORIDE BY IC	002	S	07LIC079	12/17/07	12/21/07	12/21/07
NITRITE BY IC	002	S	07LIC079	12/17/07	12/21/07	12/21/07

1

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRATE BY IC	002	S	07LIC079	12/17/07	12/21/07	12/21/07
TOTAL CYANIDE	002	S	07LC065	12/17/07	12/26/07	12/26/07
PHOSPHATE BY IC	002	S	07LIC079	12/17/07	12/21/07	12/21/07
SULFATE BY IC	002	S	07LIC079	12/17/07	12/21/07	12/26/07
PH	002	S	07LPH080	12/17/07	12/26/07	12/26/07
PETROLEUM HYDROCARBO	002	S	07LHC047	12/17/07	12/26/07	12/31/07
SULFIDE	002	S	07LSD028	12/17/07	12/21/07	12/21/07
J16339						
% SOLIDS	003	S	07L%S155	12/17/07	12/21/07	12/21/07
BROMIDE BY IC	003	S	07LIC079	12/17/07	12/21/07	12/21/07
CHLORIDE BY IC	003	S	07LIC079	12/17/07	12/21/07	12/21/07
FLUORIDE BY IC	003	S	07LIC079	12/17/07	12/21/07	12/21/07
NITRITE BY IC	003	S	07LIC079	12/17/07	12/21/07	12/21/07
NITRATE BY IC	003	S	07LIC079	12/17/07	12/21/07	12/21/07
TOTAL CYANIDE	003	S	07LC065	12/17/07	12/26/07	12/26/07
PHOSPHATE BY IC	003	S	07LIC079	12/17/07	12/21/07	12/21/07
SULFATE BY IC	003	S	07LIC079	12/17/07	12/21/07	12/21/07
PH	003	S	07LPH080	12/17/07	12/26/07	12/26/07
PETROLEUM HYDROCARBO	003	S	07LHC047	12/17/07	12/26/07	12/31/07
PETROLEUM HYDROCARBO	003 REP	S	07LHC047	12/17/07	12/26/07	12/31/07
PETROLEUM HYDROCARBO	003 MS	S	07LHC047	12/17/07	12/26/07	12/31/07
SULFIDE	003	S	07LSD028	12/17/07	12/21/07	12/21/07
J16340						
% SOLIDS	004	S	07L%S155	12/17/07	12/21/07	12/21/07
BROMIDE BY IC	004	S	07LIC079	12/17/07	12/21/07	12/21/07
CHLORIDE BY IC	004	S	07LIC079	12/17/07	12/21/07	12/21/07
FLUORIDE BY IC	004	S	07LIC079	12/17/07	12/21/07	12/21/07
NITRITE BY IC	004	S	07LIC079	12/17/07	12/21/07	12/21/07
NITRATE BY IC	004	S	07LIC079	12/17/07	12/21/07	12/21/07
TOTAL CYANIDE	004	S	07LC065	12/17/07	12/26/07	12/26/07
PHOSPHATE BY IC	004	S	07LIC079	12/17/07	12/21/07	12/21/07
SULFATE BY IC	004	S	07LIC079	12/17/07	12/21/07	12/21/07
PH	004	S	07LPH080	12/17/07	12/26/07	12/26/07
PETROLEUM HYDROCARBO	004	S	07LHC047	12/17/07	12/26/07	12/31/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SULFIDE	004	S	07LSD028	12/17/07	12/21/07	12/21/07
J16341						
% SOLIDS	005	S	07L%S155	12/17/07	12/21/07	12/21/07
BROMIDE BY IC	005	S	07LIC079	12/17/07	12/21/07	12/21/07
CHLORIDE BY IC	005	S	07LIC079	12/17/07	12/21/07	12/21/07
FLUORIDE BY IC	005	S	07LIC079	12/17/07	12/21/07	12/21/07
NITRITE BY IC	005	S	07LIC079	12/17/07	12/21/07	12/21/07
NITRATE BY IC	005	S	07LIC079	12/17/07	12/21/07	12/21/07
TOTAL CYANIDE	005	S	07LC065	12/17/07	12/26/07	12/26/07
PHOSPHATE BY IC	005	S	07LIC079	12/17/07	12/21/07	12/21/07
SULFATE BY IC	005	S	07LIC079	12/17/07	12/21/07	12/21/07
PH	005	S	07LPH080	12/17/07	12/26/07	12/26/07
PETROLEUM HYDROCARBO	005	S	07LHC047	12/17/07	12/26/07	12/31/07
SULFIDE	005	S	07LSD028	12/17/07	12/21/07	12/21/07
J16342						
% SOLIDS	006	S	07L%S155	12/17/07	12/21/07	12/21/07
% SOLIDS	006 REP	S	07L%S155	12/17/07	12/21/07	12/21/07
BROMIDE BY IC	006	S	07LICS81	12/17/07	12/24/07	12/26/07
CHLORIDE BY IC	006	S	07LICS81	12/17/07	12/24/07	12/26/07
FLUORIDE BY IC	006	S	07LICS81	12/17/07	12/24/07	12/26/07
NITRITE BY IC	006	S	07LICS81	12/17/07	12/24/07	12/26/07
NITRATE BY IC	006	S	07LICS81	12/17/07	12/24/07	12/26/07
TOTAL CYANIDE	006	S	07LC065	12/17/07	12/26/07	12/26/07
TOTAL CYANIDE	006 REP	S	07LC065	12/17/07	12/26/07	12/26/07
TOTAL CYANIDE	006 MS	S	07LC065	12/17/07	12/26/07	12/26/07
PHOSPHATE BY IC	006	S	07LICS81	12/17/07	12/24/07	12/26/07
SULFATE BY IC	006	S	07LICS81	12/17/07	12/24/07	12/26/07
PH	006	S	07LPH080	12/17/07	12/26/07	12/26/07
PETROLEUM HYDROCARBO	006	S	07LHC047	12/17/07	12/26/07	12/31/07
SULFIDE	006	S	07LSD029	12/17/07	12/24/07	12/24/07
SULFIDE	006 REP	S	07LSD029	12/17/07	12/24/07	12/24/07
SULFIDE	006 MS	S	07LSD029	12/17/07	12/24/07	12/24/07
J16354						
% SOLIDS	007	S	07L%S155	12/17/07	12/21/07	12/21/07

LAB QC:

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BROMIDE BY IC	MB1	S	07LIC079	N/A	12/21/07	12/26/07
BROMIDE BY IC	MB1 BS	S	07LIC079	N/A	12/21/07	12/26/07
CHLORIDE BY IC	MB1	S	07LIC079	N/A	12/21/07	12/26/07
CHLORIDE BY IC	MB1 BS	S	07LIC079	N/A	12/21/07	12/26/07
FLUORIDE BY IC	MB1	S	07LIC079	N/A	12/21/07	12/26/07
FLUORIDE BY IC	MB1 BS	S	07LIC079	N/A	12/21/07	12/26/07
NITRITE BY IC	MB1	S	07LIC079	N/A	12/21/07	12/26/07
NITRITE BY IC	MB1 BS	S	07LIC079	N/A	12/21/07	12/26/07
NITRATE BY IC	MB1	S	07LIC079	N/A	12/21/07	12/26/07
NITRATE BY IC	MB1 BS	S	07LIC079	N/A	12/21/07	12/26/07
TOTAL CYANIDE	LCS L	S	07LC065	N/A	12/26/07	12/26/07
TOTAL CYANIDE	LCS L	S	07LC065	N/A	12/26/07	12/26/07
TOTAL CYANIDE	MB1	S	07LC065	N/A	12/26/07	12/26/07
PHOSPHATE BY IC	MB1	S	07LIC079	N/A	12/21/07	12/26/07
PHOSPHATE BY IC	MB1 BS	S	07LIC079	N/A	12/21/07	12/26/07
SULFATE BY IC	MB1	S	07LIC079	N/A	12/21/07	12/26/07
SULFATE BY IC	MB1 BS	S	07LIC079	N/A	12/21/07	12/26/07
PETROLEUM HYDROCARBO	MB1	S	07LHC047	N/A	12/26/07	12/31/07
PETROLEUM HYDROCARBO	MB1 BS	S	07LHC047	N/A	12/26/07	12/31/07
SULFIDE	MB1	S	07LSD028	N/A	12/21/07	12/21/07
SULFIDE	MB1 BS	S	07LSD028	N/A	12/21/07	12/21/07
SULFIDE	MB1 BSD	S	07LSD028	N/A	12/21/07	12/21/07
BROMIDE BY IC	MB1	S	07LICS81	N/A	12/24/07	12/26/07
BROMIDE BY IC	MB1 BS	S	07LICS81	N/A	12/24/07	12/26/07
CHLORIDE BY IC	MB1	S	07LICS81	N/A	12/24/07	12/26/07
CHLORIDE BY IC	MB1 BS	S	07LICS81	N/A	12/24/07	12/26/07
FLUORIDE BY IC	MB1	S	07LICS81	N/A	12/24/07	12/26/07
FLUORIDE BY IC	MB1 BS	S	07LICS81	N/A	12/24/07	12/26/07
NITRITE BY IC	MB1	S	07LICS81	N/A	12/24/07	12/26/07
NITRITE BY IC	MB1 BS	S	07LICS81	N/A	12/24/07	12/26/07
NITRATE BY IC	MB1	S	07LICS81	N/A	12/24/07	12/26/07
NITRATE BY IC	MB1 BS	S	07LICS81	N/A	12/24/07	12/26/07
PHOSPHATE BY IC	MB1	S	07LICS81	N/A	12/24/07	12/26/07
PHOSPHATE BY IC	MB1 BS	S	07LICS81	N/A	12/24/07	12/26/07
SULFATE BY IC	MB1	S	07LICS81	N/A	12/24/07	12/26/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SULFATE BY IC	MB1 BS	S	07LICS81	N/A	12/24/07	12/26/07
SULFIDE	MB1	S	07LSD029	N/A	12/24/07	12/24/07
SULFIDE	MB1 BS	S	07LSD029	N/A	12/24/07	12/24/07
SULFIDE	MB1 BSD	S	07LSD029	N/A	12/24/07	12/24/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-032 K1066
LVL#: 0712L342

W.O.#: 11343-606-001-9999-00
Date Received: 12-20-07

INORGANIC NARRATIVE

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

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

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

3. Sample holding times as required by the method and/or contract were met with the exception of replicate analyses for Nitrate, Nitrite and Phosphate that were re-analyzed past hold.

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

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits with the exception of 07LIC081 for Bromide, Chloride and Nitrate that were below the 90-110% control limits at 89.3%, 89.9% and 89.0%, respectively. The duplicate LCS for Sulfide were within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike recoveries for Bromide, Chloride, Fluoride, Nitrite, Nitrate, Phosphate, Sulfate, Petroleum Hydrocarbons (PHC), Total Cyanide and Sulfide were within the 75-125% control limits.

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 21 pages.

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

8. The replicate analyses for Bromide, Chloride, Nitrite, Nitrate, Phosphate, pH, PHC, Percent Solids, Total Cyanide and Sulfide were within the 20% RPD control limit however replicate analyses for Fluoride and Sulfate were outside the control limit that may be attributed to sample inhomogeneity.

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

1/4/08
Date

njp\i12-342

LIONVILLE LABORATORY INC.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	__ D2216-80		
% Moisture	__ D2216-80		__ ILMO4.0 (e)
% Solids	✓ D2216-80		__ ILMO4.0 (e)
% Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Chromium VI		__ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		__ 1110(mod) __ 9045C	
Cyanide, Total		✓ 9010B /9014	__ ILMO4.0 (e)
Cyanide, Reactive		__ Section 7.3/9014	
Halides, Extractable Organic		__ 9020B	__ EPA 600/4/84-008
Halides, Total		__ 9020B	__ EPA 600/4/84-008
EP Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		__ 1010	
Oil & Grease		__ 9071A	
Carbon, Total Organic		__ 9060	__ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	__ D240-87(mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		✓ 9071 (mod.) D	✓ EPA 418.1 (mod.)
pH, Soil		✓ 9045	
Sulfide, Reactive		__ Section 7.3/9030B	
Sulfide		✓ 9030B(mod) /9034	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Preparation Leach		__ 1312	
Paint Filter		__ 9095A	

Other: Bromide, Chloride, Fluoride **Method:** EPA 300.0

Other: Nitrate, Nitrite, Phosphate, Sulfate **Method**

L-WI-034/B-01/01

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16337	% Solids	95.8		%	0.01	1.0
		Bromide by IC	2.5	u	MG/KG	2.5	1.0
		Chloride by IC	34.0		MG/KG	2.5	1.0
		Fluoride by IC	3.4		MG/KG	2.5	1.0
		Nitrite by IC	2.49	u	MG/KG	2.49	1.0
		Nitrate by IC	2.49	u	MG/KG	2.49	1.0
		Cyanide, Total	0.51	u	MG/KG	0.51	1.0
		Phosphate by IC	2.5	u	MG/KG	2.5	1.0
		Sulfate by IC	153		MG/KG	5.8	2.0
		pH	9.4		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	139	u	MG/KG	139	1.0
		Sulfide	21.5	u	MG/KG	21.5	1.0
-002	J16338	% Solids	94.9		%	0.01	1.0
		Bromide by IC	2.5	u	MG/KG	2.5	1.0
		Chloride by IC	2.5	u	MG/KG	2.5	1.0
		Fluoride by IC	2.5	u	MG/KG	2.5	1.0
		Nitrite by IC	2.54	u	MG/KG	2.54	1.0
		Nitrate by IC	2.54	u	MG/KG	2.54	1.0
		Cyanide, Total	0.50	u	MG/KG	0.50	1.0
		Phosphate by IC	2.5	u	MG/KG	2.5	1.0
		Sulfate by IC	2410		MG/KG	127	50.0
		pH	8.0		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	140	u	MG/KG	140	1.0
		Sulfide	21.5	u	MG/KG	21.5	1.0
-003	J16339	% Solids	95.4		%	0.01	1.0
		Bromide by IC	2.6	u	MG/KG	2.6	1.0
		Chloride by IC	2.6	u	MG/KG	2.6	1.0
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0
		Nitrite by IC	2.62	u	MG/KG	2.62	1.0
		Nitrate by IC	2.62	u	MG/KG	2.62	1.0
		Cyanide, Total	0.50	u	MG/KG	0.50	1.0
		Phosphate by IC	2.6	u	MG/KG	2.6	1.0
		Sulfate by IC	32.8		MG/KG	2.6	1.0
		pH	8.7		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	140	u	MG/KG	140	1.0
		Sulfide	21.5	u	MG/KG	21.5	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J16340	% Solids	95.6		%	0.01	1.0
		Bromide by IC	2.7	u	MG/KG	2.7	1.0
		Chloride by IC	2.7	u	MG/KG	2.7	1.0
		Fluoride by IC	2.7	u	MG/KG	2.7	1.0
		Nitrite by IC	2.72	u	MG/KG	2.72	1.0
		Nitrate by IC	2.72	u	MG/KG	2.72	1.0
		Cyanide, Total	0.49	u	MG/KG	0.49	1.0
		Phosphate by IC	2.7	u	MG/KG	2.7	1.0
		Sulfate by IC	11.4		MG/KG	2.7	1.0
		pH	9.0		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	139	u	MG/KG	139	1.0
		Sulfide	21.1	u	MG/KG	21.1	1.0
-005	J16341	% Solids	91.5		%	0.01	1.0
		Bromide by IC	2.3	u	MG/KG	2.3	1.0
		Chloride by IC	2.3	u	MG/KG	2.3	1.0
		Fluoride by IC	2.3	u	MG/KG	2.3	1.0
		Nitrite by IC	2.27	u	MG/KG	2.27	1.0
		Nitrate by IC	18.6		MG/KG	2.27	1.0
		Cyanide, Total	0.48	u	MG/KG	0.48	1.0
		Phosphate by IC	6.8		MG/KG	2.3	1.0
		Sulfate by IC	51.3		MG/KG	2.3	1.0
		pH	8.1		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	145	u	MG/KG	145	1.0
		Sulfide	22.3	u	MG/KG	22.3	1.0
-006	J16342	% Solids	90.8		%	0.01	1.0
		Bromide by IC	2.6	u	MG/KG	2.6	1.0
		Chloride by IC	2.6	u	MG/KG	2.6	1.0
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0
		Nitrite by IC	2.56	u	MG/KG	2.56	1.0
		Nitrate by IC	2.56	u	MG/KG	2.56	1.0
		Cyanide, Total	0.48	u	MG/KG	0.48	1.0
		Phosphate by IC	46.5		MG/KG	2.6	1.0
		Sulfate by IC	3.2		MG/KG	2.6	1.0
		pH	8.4		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	146	u	MG/KG	146	1.0
		Sulfide	22.7	u	MG/KG	22.7	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J16354	% Solids	100	%	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	07LIC079-MB1	Bromide by IC	2.1	u	MG/KG	2.1	1.0
		Chloride by IC	2.1	u	MG/KG	2.1	1.0
		Fluoride by IC	2.1	u	MG/KG	2.1	1.0
		Nitrite by IC	2.12	u	MG/KG	2.12	1.0
		Nitrate by IC	2.12	u	MG/KG	2.12	1.0
		Phosphate by IC	2.1	u	MG/KG	2.1	1.0
		Sulfate by IC	2.1	u	MG/KG	2.1	1.0
BLANK1	07LC065-MB1	Cyanide, Total	0.48	u	MG/KG	0.48	1.0
BLANK10	07LHC047-MB1	Petroleum Hydrocarbons	133	u	MG/KG	133	1.0
BLANK10	07LSD028-MB1	Sulfide	21.3	u	MG/KG	21.3	1.0
BLANK10	07LICS81-MB1	Bromide by IC	2.1	u	MG/KG	2.1	1.0
		Chloride by IC	2.1	u	MG/KG	2.1	1.0
		Fluoride by IC	2.1	u	MG/KG	2.1	1.0
		Nitrite by IC	2.08	u	MG/KG	2.08	1.0
		Nitrate by IC	2.08	u	MG/KG	2.08	1.0
		Phosphate by IC	2.1	u	MG/KG	2.1	1.0
		Sulfate by IC	2.1	u	MG/KG	2.1	1.0
BLANK10	07LSD029-MB1	Sulfide	20.3	u	MG/KG	20.3	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16337	Bromide by IC	114	0.0	115	99.5	2.0
		Chloride by IC	148	34.0	115	99.5	2.0
		Fluoride by IC	112	3.4	115	94.3	2.0
		Nitrite by IC	116	2.49u	115	101.3	2.0
		Nitrate by IC	121	2.49u	115	105.2	2.0
		Phosphate by IC	116	2.5 u	115	100.5	2.0
		Sulfate by IC	348	153	249	78.5	5.0
-003	J16339	Petroleum Hydrocarbons	543	0.0	585	92.9	1.0
-006	J16342	Cyanide, Total	4.71	0.48u	4.90	96.2	1.0
		Sulfide	222	5.7	247	87.3	1.0
BLANK10	07LIC079-MB1	Bromide by IC	71.0	2.1 u	77.3	91.9	1.0
		Chloride by IC	71.7	2.1 u	77.3	92.7	1.0
		Fluoride by IC	71.5	2.1 u	77.3	92.4	1.0
		Nitrite by IC	71.1	2.12u	77.3	92.0	1.0
		Nitrate by IC	70.2	2.12u	77.3	90.8	1.0
		Phosphate by IC	73.8	2.1 u	77.3	95.4	1.0
		Sulfate by IC	72.4	2.1 u	77.3	93.6	1.0
BLANK10	07LHC047-MB1	Petroleum Hydrocarbons	537	133 u	560	95.9	1.0
BLANK10	07LSD028-MB1	Sulfide	224	21.3 u	243	92.2	1.0
		Sulfide MSD	228	21.3 u	252	90.4	1.0
BLANK10	07LICS81-MB1	Bromide by IC	70.4	2.1 u	78.8	89.3	1.0
		Chloride by IC	70.9	2.1 u	78.8	89.9	1.0
		Fluoride by IC	71.8	2.1 u	78.8	91.1	1.0
		Nitrite by IC	71.2	2.08u	78.8	90.3	1.0
		Nitrate by IC	70.1	2.08u	78.8	89.0	1.0
		Phosphate by IC	76.2	2.1 u	78.8	96.8	1.0
		Sulfate by IC	84.3	2.1 u	78.8	107.0	1.0
BLANK10	07LSD029-MB1	Sulfide	193	20.3 u	213	90.5	1.0
		Sulfide MSD	203	20.3 u	213	95.1	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	07LSD028-MB1	Sulfide	92.2	90.4	1.9
BLANK10	07LSD029-MB1	Sulfide	90.5	95.1	5.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16337	Bromide by IC	2.5 u	2.4 u	NC	1.0
		Chloride by IC	34.0	37.0	8.4	1.0
		Fluoride by IC	3.4	2.4 u	~~NC~~ 47.3	1.0
		Nitrite by IC	2.49u	2.35u	NC	1.0
		Nitrate by IC	2.49u	2.35u	NC	1.0
		Phosphate by IC	2.5 u	2.4 u	NC	1.0
		Sulfate by IC	153	118	26.1	2.0
		pH	9.4	9.3	0.3	1.0
-003REP	J16339	Petroleum Hydrocarbons	140 u	139 u	NC	1.0
-006REP	J16342	% Solids	90.8	90.8	0.022	1.0
		Cyanide, Total	0.48u	0.50u	NC	1.0
		Sulfide	22.7 u	22.4 u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032

LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCSS1	07LC065-LCS1	Cyanide, Total LCS	1.90	2.0	MG/KG	94.8
LCSS2	07LC065-LCS2	Cyanide, Total LCS	9.77	10.0	MG/KG	97.7

onville Laboratory Use Only
07121342

Custody Transfer Record/Lab Work Request

Page 1 of 1

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

ent TNU HANFORD SAF# RC-032
Final Proj. Sampling Date
ject# 11343-606-001-9999-00
ject Contact/Phone#
nville Laboratory Project Manager D. JOHNSON
SW846 Del STD TAT 8 DAY
te Rec'd 12-19-07 Date Due 1-3-08

		A	B	C	D	EF	G	H
Refrigerator #		2	2	2	2	2	2	2
#/Type Container	Liquid / Solid	1G	1G	1G	1G	1P	1G	1P
Volume		120	60	120	120	125	120	125
Preservatives		—	—	—	—	—	—	—
ANALYSES REQUESTED		VOA	ORGANIC: BNA 8270A, PCB 8082, PESTICIDES 8081		TOT. TPH 418.1	INORG: Metals 6010, CN 9010	SULFIDE 9030	IC ANIONS 300.0, TPH (Soil) 9045

Lionville Laboratory Use Only

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	VOA	BNA 8270A	PCB 8082	PESTICIDES 8081	TPH 418.1	Metals 6010	CN 9010	SULFIDE 9030	IC ANIONS 300.0	TPH (Soil) 9045
001	J16337			SOIL	12-17-07	0855		X	X	X	X	X	X	X	X	X
002	J16338			SOIL	12-17-07	1240		X	X	X	X	X	X	X	X	X
003	J16339			SOIL	12-17-07	0905		X	X	X	X	X	X	X	X	X
004	J16340			SOIL	12-17-07	0915		X	X	X	X	X	X	X	X	X
005	J16341			SOIL	12-17-07	0925		X	X	X	X	X	X	X	X	X
006	J16342			SOIL	12-17-07	0930		X	X	X	X	X	X	X	X	X
007	J16354			SOIL	12-17-07	0940						X				

Special Instructions:
Met① = HSL + B, Mo, Si (NO TL)
IC① = ICBR, ICCL, ICFL, ICNO2, ICNO3, ICSO4, ICPO4

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

Relinquished by	Received by	Date	Time
Ted G.	[illegible]	12-17-07	1500

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000018

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-177	Page 2 of 3

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7DAY		
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 120-F-1 Glass Dump SE Verification		SAF No.: RC-032
Ice Chest No.: ERC-99-046	Field Logbook No.: EFL-1174-4	COA: R120F12000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080108		Bill of Lading/Air Bill No.: See OSIC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	P	aG	aG	P	aG	aG	aG				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	60mL	120mL	125mL	120mL	120mL	120mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	IC Anions - 300.0; pH (Soil) - 9045	Total Cyanide - 9010; Sulfides - 9030	Pesticides - 8081	TPH (Total) - 418.1				

Sample No.	Matrix *	Sample Date	Sample Time										TOC
J16337	SOIL	12-17-07	0855	X	X	X	X	X	X	X			5
J16338	SOIL	12-17-07	1240	X	X	X	X	X	X	X			6
J16339	SOIL	12-17-07	0905	X	X	X	X	X	X	X			7
J16340	SOIL	12-17-07	0915	X	X	X	X	X	X	X			8
J16341	SOIL	12-17-07	0925	X	X	X	X	X	X	X			9

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: [signature]	Date/Time: 12-17-07 1354	Received By/Stored In: JRDeBuique JRDB	Date/Time: 1354 12-17-07
Relinquished By/Removed From: JRDeBuique JRDB	Date/Time: 1445 12-17-07	Received By/Stored In: 3728/2C	Date/Time: 1446 12-17-07
Relinquished By/Removed From: 3728/2C	Date/Time: 12-18-07 0900	Received By/Stored In: KMSingleton	Date/Time: 12-18-07 0900
Relinquished By/Removed From: KMSingleton	Date/Time: 12-18-07 1500	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time: 12-18-07	Received By/Stored In: [signature]	Date/Time: 12-18-07 1500
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (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)

samples from 3728 Ref # 2C
3728 Custodian removed samples for shipping on 12/18/07.
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

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

WCH-EE-011

00000019

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-177	Page 1 of 1

Collector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH	Price Code 8B	Data Turnaround 7DAY
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 120-F-1 Glass Dump SE Verification		SAF No. RC-032		
Ice Chest No. ERC-99-046	Field Logbook No. EFL-1174-4	COA R120F12000	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. AQ80108		Bill of Lading/Air Bill No. See DSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	P	aG	aG	P	aG	aG	aG				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	60mL	120mL	125mL	120mL	120mL	120mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	IC Anions - 300.0; pH (Soil) - 9045	Total Cyanide - 9010; Sulfides - 9030	Pesticides - 8081	TPH (Total) - 418.1				
Sample No. / Matrix * / Sample Date / Sample Time											
J16342 / SOIL / 12-17-07 / 0930	X	X	X	X	X	X	X				10
J16354 / SOIL / 12-17-07 / 0940	X										EB

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T. Welch-Koelling	12-17-07 1354	JR DeBruyne JR DeBruyne	1354 12-17-07
JR DeBruyne JR DeBruyne	12-17-07 1445	3728/2C	1445 12-17-07
3728/2C	12-18-07 0900	K M Singleton	12-18-07 0900
K M Singleton	12-18-07 1500	FED EX	
FED EX	12-19-07	Victor Hernandez	12-19-07 1500

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (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)

samples from 3728 Ref # 2C.
3728 Custodian removed samples for shipping on 12/18/07.
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

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

WCH-EE-011

000000020

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #: RC-032

Date: 12-19-07

LvLI Batch #: 0712L342

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7914 5895 7232
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4.1°	°C	Cooler # ERC-99-046
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 _____

lvl l

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JAN 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16337						
SILVER, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
SILVER, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
SILVER, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
ALUMINUM, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
ALUMINUM, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
ALUMINUM, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
ARSENIC, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
ARSENIC, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
ARSENIC, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
BORON, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
BORON, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
BORON, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
BARIUM, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
BARIUM, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
BARIUM, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
BERYLLIUM, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
BERYLLIUM, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
BERYLLIUM, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
CALCIUM, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
CALCIUM, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
CALCIUM, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
CADMIUM, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
CADMIUM, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
CADMIUM, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
COBALT, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
COBALT, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
COBALT, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
CHROMIUM, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
CHROMIUM, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
CHROMIUM, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
COPPER, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
COPPER, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
COPPER, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
IRON, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
IRON, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
MERCURY, TOTAL	001	S	07C0227	12/17/07	12/20/07	12/26/07
MERCURY, TOTAL	001 REP	S	07C0227	12/17/07	12/20/07	12/26/07
MERCURY, TOTAL	001 MS	S	07C0227	12/17/07	12/20/07	12/26/07
POTASSIUM, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
POTASSIUM, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
POTASSIUM, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
MAGNESIUM, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
MAGNESIUM, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
MAGNESIUM, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
MANGANESE, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
MANGANESE, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
MANGANESE, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
MOLYBDENUM, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
MOLYBDENUM, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
MOLYBDENUM, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
SODIUM, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
SODIUM, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
SODIUM, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
NICKEL, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
NICKEL, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
NICKEL, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
LEAD, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
LEAD, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
LEAD, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
ANTIMONY, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
ANTIMONY, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
ANTIMONY, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
SELENIUM, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
SELENIUM, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
SELENIUM, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
SILICON, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
SILICON, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
SILICON, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
VANADIUM, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07
VANADIUM, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
VANADIUM, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
ZINC, TOTAL	001	S	07L0637	12/17/07	12/21/07	12/28/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, TOTAL	001 REP	S	07L0637	12/17/07	12/21/07	12/28/07
ZINC, TOTAL	001 MS	S	07L0637	12/17/07	12/21/07	12/28/07
J16338						
SILVER, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
ALUMINUM, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
ARSENIC, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
BORON, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
BARIUM, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
BERYLLIUM, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
CALCIUM, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
CADMIUM, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
COBALT, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
CHROMIUM, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
COPPER, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
IRON, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
MERCURY, TOTAL	002	S	07C0227	12/17/07	12/20/07	12/26/07
POTASSIUM, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
MAGNESIUM, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
MANGANESE, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
MOLYBDENUM, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
SODIUM, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
NICKEL, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
LEAD, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
ANTIMONY, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
SELENIUM, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
SILICON, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
VANADIUM, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
ZINC, TOTAL	002	S	07L0637	12/17/07	12/21/07	12/28/07
J16339						
SILVER, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
ALUMINUM, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
ARSENIC, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
BORON, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
BARIUM, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BERYLLIUM, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
CALCIUM, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
CADMIUM, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
COBALT, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
CHROMIUM, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
COPPER, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
IRON, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
MERCURY, TOTAL	003	S	07C0227	12/17/07	12/20/07	12/26/07
POTASSIUM, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
MAGNESIUM, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
MANGANESE, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
MOLYBDENUM, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
SODIUM, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
NICKEL, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
LEAD, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
ANTIMONY, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
SELENIUM, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
SILICON, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
VANADIUM, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
ZINC, TOTAL	003	S	07L0637	12/17/07	12/21/07	12/28/07
J16340						
SILVER, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
ALUMINUM, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
ARSENIC, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
BORON, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
BARIUM, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
BERYLLIUM, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
CALCIUM, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
CADMIUM, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
COBALT, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
CHROMIUM, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
COPPER, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
IRON, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
MERCURY, TOTAL	004	S	07C0227	12/17/07	12/20/07	12/26/07
POTASSIUM, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
MAGNESIUM, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
MOLYBDENUM, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
SODIUM, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
NICKEL, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
LEAD, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
ANTIMONY, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
SELENIUM, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
SILICON, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
VANADIUM, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
ZINC, TOTAL	004	S	07L0637	12/17/07	12/21/07	12/28/07
J16341						
SILVER, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
ALUMINUM, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
ARSENIC, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
BORON, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
BARIUM, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
BERYLLIUM, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
CALCIUM, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
CADMIUM, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
COBALT, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
CHROMIUM, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
COPPER, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
IRON, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
MERCURY, TOTAL	005	S	07C0227	12/17/07	12/20/07	12/26/07
POTASSIUM, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
MAGNESIUM, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
MANGANESE, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
MOLYBDENUM, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
SODIUM, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
NICKEL, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
LEAD, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
ANTIMONY, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
SELENIUM, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
SILICON, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
VANADIUM, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07
ZINC, TOTAL	005	S	07L0637	12/17/07	12/21/07	12/28/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16342						
SILVER, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
ALUMINUM, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
ARSENIC, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
BORON, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
BARIUM, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
BERYLLIUM, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
CALCIUM, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
CADMIUM, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
COBALT, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
CHROMIUM, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
COPPER, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
IRON, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
MERCURY, TOTAL	006	S	07C0227	12/17/07	12/20/07	12/26/07
POTASSIUM, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
MAGNESIUM, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
MANGANESE, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
MOLYBDENUM, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
SODIUM, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
NICKEL, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
LEAD, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
ANTIMONY, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
SELENIUM, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
SILICON, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
VANADIUM, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
ZINC, TOTAL	006	S	07L0637	12/17/07	12/21/07	12/28/07
J16354						
SILVER, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
ALUMINUM, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
ARSENIC, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
BORON, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
BARIUM, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
BERYLLIUM, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
CALCIUM, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CADMIUM, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
COBALT, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
CHROMIUM, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
COPPER, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
IRON, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
MERCURY, TOTAL	007	S	07C0227	12/17/07	12/20/07	12/26/07
POTASSIUM, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
MAGNESIUM, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
MANGANESE, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
MOLYBDENUM, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
SODIUM, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
NICKEL, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
LEAD, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
ANTIMONY, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
SELENIUM, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
SILICON, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
VANADIUM, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07
ZINC, TOTAL	007	S	07L0637	12/17/07	12/21/07	12/28/07

LAB QC:

SILVER LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
SILVER, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
ALUMINUM LABORTORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
ALUMINUM, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
ARSENIC LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
ARSENIC, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
BORON LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
BORON, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
BARIUM LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
BARIUM, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
BERYLLIUM LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
BERYLLIUM, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
CALCIUM LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
CALCIUM, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
CADMIUM LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
CADMIUM, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
COBALT LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :0712L342

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COBALT, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
CHROMIUM LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
CHROMIUM, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
COPPER LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
COPPER, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
IRON LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
IRON, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
MERCURY LABORATORY	LC1 BS	S	07C0227	N/A	12/20/07	12/26/07
MERCURY, TOTAL	MB1	S	07C0227	N/A	12/20/07	12/26/07
POTASSIUM LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
POTASSIUM, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
MAGNESIUM LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
MAGNESIUM, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
MANGANESE LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
MANGANESE, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
MOLYBDENUM LABORATOR	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
MOLYBDENUM, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
SODIUM LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
SODIUM, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
NICKEL LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
NICKEL, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
LEAD LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
LEAD, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
ANTIMONY LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
ANTIMONY, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
SELENIUM LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
SELENIUM, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
SILICON LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
SILICON, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
VANADIUM LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
VANADIUM, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07
ZINC LABORATORY	LC1 BS	S	07L0637	N/A	12/21/07	12/28/07
ZINC, TOTAL	MB1	S	07L0637	N/A	12/21/07	12/28/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-032
LVL#: 0712L342
SDG/SAF#: /RC-032

W.O.#: 11343-606-001-9999-00
Date Received: 12-19-07

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 7 soil samples.

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

   All ICP metal samples were run with a 3-fold dilutions with the exception of sample J16354. All dilutions were 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).

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

6. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL). 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 3 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

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 31 pages.

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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
J16337	Aluminum	60,000	109
	Iron	60,000	106
	Silicon	6,000	97

11. The duplicate analyses for 3 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.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

1/4/08
Date

tlb/m12-342

LvLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

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

Lot#: 0712L342

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	X 6010B		__200.7				__99
Antimony	X 6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X 6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X 6010B		__200.7				__99
Beryllium	X 6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	X 6010B		__200.7				__99
Cadmium	X 6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	X 6010B		__200.7				__99
Chromium	X 6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	X 6010B		__200.7				__99
Copper	X 6010B	__7211 [5]	__200.7	__220.2			__99
Iron	X 6010B		__200.7				__99
Lead	X 6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	X 6010B		__200.7				__99
Manganese	X 6010B		__200.7				__99
Mercury	__7470A [3]	X 7471A [3]	__245.1 [3]	__245.5 [3]			__99
Molybdenum	X 6010B		__200.7				__99
Nickel	X 6010B		__200.7				__99
Potassium	X 6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X 6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	X 6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X 6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	X 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	X 6010B		__200.7				__99
Zinc	X 6010B		__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 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16337	Silver, Total	0.28 u	MG/KG	0.28	3.0
		Aluminum, Total	5070	MG/KG	11.4	3.0
		Arsenic, Total	3.2	MG/KG	1.4	3.0
		Boron, Total	5.6	MG/KG	1.4	3.0
		Barium, Total	36.0	MG/KG	0.28	3.0
		Beryllium, Total	0.58	MG/KG	0.14	3.0
		Calcium, Total	3440	MG/KG	11.4	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	4.6	MG/KG	0.57	3.0
		Chromium, Total	7.3	MG/KG	0.57	3.0
		Copper, Total	13.3	MG/KG	0.57	3.0
		Iron, Total	12900	MG/KG	12.8	3.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Potassium, Total	678	MG/KG	11.4	3.0
		Magnesium, Total	4020	MG/KG	7.1	3.0
		Manganese, Total	229	MG/KG	0.11	3.0
		Molybdenum, Total	0.85 u	MG/KG	0.85	3.0
		Sodium, Total	430	MG/KG	5.7	3.0
		Nickel, Total	8.8	MG/KG	0.57	3.0
		Lead, Total	2.6	MG/KG	0.85	3.0
		Antimony, Total	0.85 u	MG/KG	0.85	3.0
		Selenium, Total	1.7 u	MG/KG	1.7	3.0
		Silicon, Total	2320	MG/KG	11.4	3.0
		Vanadium, Total	33.3	MG/KG	0.40	3.0
		Zinc, Total	28.1	MG/KG	1.7	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J16338	Silver, Total	0.27 u	MG/KG	0.27	3.0
		Aluminum, Total	5100	MG/KG	11.0	3.0
		Arsenic, Total	2.3	MG/KG	1.4	3.0
		Boron, Total	1.4 u	MG/KG	1.4	3.0
		Barium, Total	36.3	MG/KG	0.27	3.0
		Beryllium, Total	0.47	MG/KG	0.14	3.0
		Calcium, Total	7250	MG/KG	11.0	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	4.3	MG/KG	0.55	3.0
		Chromium, Total	7.6	MG/KG	0.55	3.0
		Copper, Total	11.4	MG/KG	0.55	3.0
		Iron, Total	11000	MG/KG	12.4	3.0
		Mercury, Total	0.01	MG/KG	0.01	1.0
		Potassium, Total	704	MG/KG	11.0	3.0
		Magnesium, Total	3610	MG/KG	6.9	3.0
		Manganese, Total	206	MG/KG	0.11	3.0
		Molybdenum, Total	0.82 u	MG/KG	0.82	3.0
		Sodium, Total	152	MG/KG	5.5	3.0
		Nickel, Total	9.9	MG/KG	0.55	3.0
		Lead, Total	2.8	MG/KG	0.82	3.0
		Antimony, Total	0.82 u	MG/KG	0.82	3.0
		Selenium, Total	1.6 u	MG/KG	1.6	3.0
		Silicon, Total	1650	MG/KG	11.0	3.0
		Vanadium, Total	25.7	MG/KG	0.38	3.0
		Zinc, Total	28.4	MG/KG	1.6	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J16339	Silver, Total	0.30 u	MG/KG	0.30	3.0
		Aluminum, Total	5430	MG/KG	12.0	3.0
		Arsenic, Total	2.4	MG/KG	1.5	3.0
		Boron, Total	1.8	MG/KG	1.5	3.0
		Barium, Total	52.3	MG/KG	0.30	3.0
		Beryllium, Total	0.70	MG/KG	0.15	3.0
		Calcium, Total	3880	MG/KG	12.0	3.0
		Cadmium, Total	0.15 u	MG/KG	0.15	3.0
		Cobalt, Total	4.9	MG/KG	0.60	3.0
		Chromium, Total	7.3	MG/KG	0.60	3.0
		Copper, Total	11.1	MG/KG	0.60	3.0
		Iron, Total	15000	MG/KG	13.5	3.0
		Mercury, Total	0.02	MG/KG	0.01	1.0
		Potassium, Total	954	MG/KG	12.0	3.0
		Magnesium, Total	3710	MG/KG	7.5	3.0
		Manganese, Total	247	MG/KG	0.12	3.0
		Molybdenum, Total	0.90 u	MG/KG	0.90	3.0
		Sodium, Total	172	MG/KG	6.0	3.0
		Nickel, Total	8.4	MG/KG	0.60	3.0
		Lead, Total	5.5	MG/KG	0.90	3.0
		Antimony, Total	0.90 u	MG/KG	0.90	3.0
		Selenium, Total	1.8 u	MG/KG	1.8	3.0
		Silicon, Total	2420	MG/KG	12.0	3.0
		Vanadium, Total	38.3	MG/KG	0.42	3.0
		Zinc, Total	39.0	MG/KG	1.8	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J16340	Silver, Total	0.27 u	MG/KG	0.27	3.0
		Aluminum, Total	4910	MG/KG	10.6	3.0
		Arsenic, Total	2.4	MG/KG	1.3	3.0
		Boron, Total	1.3 u	MG/KG	1.3	3.0
		Barium, Total	29.3	MG/KG	0.27	3.0
		Beryllium, Total	0.54	MG/KG	0.13	3.0
		Calcium, Total	3100	MG/KG	10.6	3.0
		Cadmium, Total	0.13 u	MG/KG	0.13	3.0
		Cobalt, Total	4.2	MG/KG	0.53	3.0
		Chromium, Total	8.1	MG/KG	0.53	3.0
		Copper, Total	13.1	MG/KG	0.53	3.0
		Iron, Total	12300	MG/KG	12.0	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	784	MG/KG	10.6	3.0
		Magnesium, Total	3580	MG/KG	6.6	3.0
		Manganese, Total	216	MG/KG	0.11	3.0
		Molybdenum, Total	0.80 u	MG/KG	0.80	3.0
		Sodium, Total	193	MG/KG	5.3	3.0
		Nickel, Total	9.1	MG/KG	0.53	3.0
		Lead, Total	2.6	MG/KG	0.80	3.0
		Antimony, Total	0.80 u	MG/KG	0.80	3.0
		Selenium, Total	1.6 u	MG/KG	1.6	3.0
		Silicon, Total	1860	MG/KG	10.6	3.0
		Vanadium, Total	31.4	MG/KG	0.37	3.0
		Zinc, Total	30.9	MG/KG	1.6	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J16341	Silver, Total	0.31 u	MG/KG	0.31	3.0
		Aluminum, Total	5130	MG/KG	12.4	3.0
		Arsenic, Total	2.5	MG/KG	1.5	3.0
		Boron, Total	2.4	MG/KG	1.5	3.0
		Barium, Total	70.2	MG/KG	0.31	3.0
		Beryllium, Total	0.77	MG/KG	0.15	3.0
		Calcium, Total	4050	MG/KG	12.4	3.0
		Cadmium, Total	0.15 u	MG/KG	0.15	3.0
		Cobalt, Total	5.4	MG/KG	0.62	3.0
		Chromium, Total	5.7	MG/KG	0.62	3.0
		Copper, Total	10.4	MG/KG	0.62	3.0
		Iron, Total	16300	MG/KG	13.9	3.0
		Mercury, Total	0.06	MG/KG	0.009	1.0
		Potassium, Total	1160	MG/KG	12.4	3.0
		Magnesium, Total	3430	MG/KG	7.7	3.0
		Manganese, Total	270	MG/KG	0.12	3.0
		Molybdenum, Total	0.93 u	MG/KG	0.93	3.0
		Sodium, Total	154	MG/KG	6.2	3.0
		Nickel, Total	7.7	MG/KG	0.62	3.0
		Lead, Total	9.6	MG/KG	0.93	3.0
		Antimony, Total	0.93 u	MG/KG	0.93	3.0
		Selenium, Total	1.9 u	MG/KG	1.9	3.0
		Silicon, Total	2900	MG/KG	12.4	3.0
		Vanadium, Total	36.4	MG/KG	0.43	3.0
		Zinc, Total	47.1	MG/KG	1.9	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J16342	Silver, Total	0.32 u	MG/KG	0.32	3.0
		Aluminum, Total	6320	MG/KG	12.7	3.0
		Arsenic, Total	2.8	MG/KG	1.6	3.0
		Boron, Total	1.6 u	MG/KG	1.6	3.0
		Barium, Total	72.0	MG/KG	0.32	3.0
		Beryllium, Total	0.99	MG/KG	0.16	3.0
		Calcium, Total	3650	MG/KG	12.7	3.0
		Cadmium, Total	0.16 u	MG/KG	0.16	3.0
		Cobalt, Total	6.1	MG/KG	0.64	3.0
		Chromium, Total	6.6	MG/KG	0.64	3.0
		Copper, Total	10.0	MG/KG	0.64	3.0
		Iron, Total	19900	MG/KG	14.3	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	1210	MG/KG	12.7	3.0
		Magnesium, Total	4100	MG/KG	7.9	3.0
		Manganese, Total	314	MG/KG	0.13	3.0
		Molybdenum, Total	0.95 u	MG/KG	0.95	3.0
		Sodium, Total	180	MG/KG	6.4	3.0
		Nickel, Total	8.9	MG/KG	0.64	3.0
		Lead, Total	3.3	MG/KG	0.95	3.0
		Antimony, Total	0.95 u	MG/KG	0.95	3.0
		Selenium, Total	1.9 u	MG/KG	1.9	3.0
		Silicon, Total	3200	MG/KG	12.7	3.0
		Vanadium, Total	49.7	MG/KG	0.44	3.0
		Zinc, Total	39.4	MG/KG	1.9	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J16354	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Aluminum, Total	80.7	MG/KG	3.7	1.0
		Arsenic, Total	0.46 u	MG/KG	0.46	1.0
		Boron, Total	0.46 u	MG/KG	0.46	1.0
		Barium, Total	1.7	MG/KG	0.09	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	23.9	MG/KG	3.7	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.19 u	MG/KG	0.19	1.0
		Chromium, Total	0.19 u	MG/KG	0.19	1.0
		Copper, Total	0.25	MG/KG	0.19	1.0
		Iron, Total	156	MG/KG	4.2	1.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Potassium, Total	37.3	MG/KG	3.7	1.0
		Magnesium, Total	10.3	MG/KG	2.3	1.0
		Manganese, Total	4.2	MG/KG	0.04	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	9.2	MG/KG	1.9	1.0
		Nickel, Total	0.19 u	MG/KG	0.19	1.0
		Lead, Total	0.34	MG/KG	0.28	1.0
		Antimony, Total	0.28 u	MG/KG	0.28	1.0
		Selenium, Total	0.56 u	MG/KG	0.56	1.0
		Silicon, Total	102	MG/KG	3.7	1.0
		Vanadium, Total	0.21	MG/KG	0.13	1.0
		Zinc, Total	0.63	MG/KG	0.56	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	07L0637-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	4.0 u	MG/KG	4.0	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Boron, Total	0.50 u	MG/KG	0.50	1.0
		Barium, Total	0.10 u	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	8.5	MG/KG	4.0	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.20 u	MG/KG	0.20	1.0
		Chromium, Total	0.20 u	MG/KG	0.20	1.0
		Copper, Total	0.20 u	MG/KG	0.20	1.0
		Iron, Total	4.5 u	MG/KG	4.5	1.0
		Potassium, Total	4.0 u	MG/KG	4.0	1.0
		Magnesium, Total	2.5 u	MG/KG	2.5	1.0
		Manganese, Total	0.04 u	MG/KG	0.04	1.0
		Molybdenum, Total	0.30 u	MG/KG	0.30	1.0
		Sodium, Total	6.6	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	0.95	MG/KG	0.60	1.0
BLANK1	07C0227-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032

LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	J16337	Silver, Total	4.3	0.28u	4.7	91.5	3.0
		Aluminum, Total	5390	5070	190	168.5*	3.0
		Arsenic, Total	184	3.2	190	95.4	3.0
		Boron, Total	93.6	5.6	94.9	92.7	3.0
		Barium, Total	216	36.0	190	94.8	3.0
		Beryllium, Total	5.2	0.58	4.7	98.2	3.0
		Calcium, Total	5780	3440	2370	98.9	3.0
		Cadmium, Total	4.5	0.14u	4.7	95.7	3.0
		Cobalt, Total	50.5	4.6	47.5	96.6	3.0
		Chromium, Total	25.7	7.3	19.0	96.8	3.0
		Copper, Total	36.3	13.3	23.7	97.0	3.0
		Iron, Total	13300	12900	94.9	443.9*	3.0
		Mercury, Total	0.14	0.00u	0.13	104.5	1.0
		Potassium, Total	2900	678	2370	93.7	3.0
		Magnesium, Total	6400	4020	2370	100.2	3.0
		Manganese, Total	279	229	47.5	106.5*	3.0
		Molybdenum, Total	87.2	0.85u	94.9	91.9	3.0
		Sodium, Total	2600	430	2370	91.6	3.0
		Nickel, Total	54.9	8.8	47.5	97.1	3.0
		Lead, Total	48.4	2.6	47.5	96.4	3.0
		Antimony, Total	40.0	0.85u	47.5	84.2	3.0
		Selenium, Total	158	1.7 u	190	83.5	3.0
		Silicon, Total	2260	2320	94.9	-66. *	3.0
		Vanadium, Total	78.9	33.3	47.5	96.0	3.0
		Zinc, Total	73.7	28.1	47.5	96.0	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16337	Silver, Total	0.28u	0.28u	NC	3.0
		Aluminum, Total	5070	5180	2.2	3.0
		Arsenic, Total	3.2	3.6	11.8	3.0
		Boron, Total	5.6	1.9	98.7	3.0
		Barium, Total	36.0	38.7	7.2	3.0
		Beryllium, Total	0.58	0.63	8.0	3.0
		Calcium, Total	3440	4010	15.5	3.0
		Cadmium, Total	0.14u	0.14u	NC	3.0
		Cobalt, Total	4.6	5.0	8.3	3.0
		Chromium, Total	7.3	7.2	1.4	3.0
		Copper, Total	13.3	13.6	2.2	3.0
		Iron, Total	12900	13900	7.8	3.0
		Mercury, Total	0.00u	0.01u	NC	1.0
		Potassium, Total	678	785	14.6	3.0
		Magnesium, Total	4020	4410	9.2	3.0
		Manganese, Total	229	250	9.0	3.0
		Molybdenum, Total	0.85u	0.85u	NC	3.0
		Sodium, Total	430	432	0.37	3.0
		Nickel, Total	8.8	9.7	9.7	3.0
		Lead, Total	2.6	3.4	26.7	3.0
		Antimony, Total	0.85u	0.92	NC	3.0
		Selenium, Total	1.7 u	1.7 u	NC	3.0
		Silicon, Total	2320	2110	9.7	3.0
		Vanadium, Total	33.3	35.0	5.0	3.0
		Zinc, Total	28.1	30.0	6.5	3.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 01/03/08

CLIENT: TNU-HANFORD RC-032 LVL LOT #: 0712L342

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	07L0637-LC1	Silver, LCS	46.7	50.0	MG/KG	93.4
		Aluminum, LCS	489	500	MG/KG	97.7
		Arsenic, LCS	944	1000	MG/KG	94.4
		Boron, LCS	470	500	MG/KG	94.0
		Barium, LCS	481	500	MG/KG	96.2
		Beryllium, LCS	24.4	25.0	MG/KG	97.6
		Calcium, LCS	2430	2500	MG/KG	97.1
		Cadmium, LCS	24.2	25.0	MG/KG	96.8
		Cobalt, LCS	242	250	MG/KG	97.0
		Chromium, LCS	48.6	50.0	MG/KG	97.2
		Copper, LCS	121	125	MG/KG	96.9
		Iron, LCS	486	500	MG/KG	97.1
		Potassium, LCS	2330	2500	MG/KG	93.3
		Magnesium, LCS	2390	2500	MG/KG	95.7
		Manganese, LCS	73.6	75.0	MG/KG	98.1
		Molybdenum, LCS	460	500	MG/KG	92.1
		Sodium, LCS	2310	2500	MG/KG	92.5
		Nickel, LCS	194	200	MG/KG	97.2
		Lead, LCS	243	250	MG/KG	97.3
		Antimony, LCS	273	300	MG/KG	91.1
		Selenium, LCS	908	1000	MG/KG	90.8
		Silicon, LCS	456	500	MG/KG	91.3
		Vanadium, LCS	239	250	MG/KG	95.8
		Zinc, LCS	95.7	100	MG/KG	95.7
LCS1	07C0227-LC1	Mercury, LCS	4.8	4.7	MG/KG	102.4

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 07L0637
Date/Time Initiated: 12/21/07 8:45 AM
Date/Time Completed: 12/21/07 11:30 AM
Analyst(s): MW/MC
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: [illegible]

Digested / Undigested (circle one)
Balance #: 130
Balance Cal Verif: (Y) NA
Hot Plate Temp: 90°

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 [illegible]

TLL

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
07DL340-001		1.1g	50mL	N/A	TO	Unfiltered	brown soil/sand	stones	N/A
-001B		1.1g							
-001C	1.0mL	1.1g							
-002		1.5g							
-003		1.5g							
-004		1.1g							
-005		1.0g							
-006		1.0g							
-007		1.0g					stones		
07L0632-MB1		1.0g				N/A	Boiling chips	N/A	
-001	1.0mL	1g							

MMC 12/21/07

Spiking IDs: 3100-04-01
MS #: [illegible]
LCS #: 0072-077-01

Reagent IDs:
HNO_3 E26035
HCL E33033
H_2O_2 E70A03
1:1 HNO_3 058406-02
1:1 HCL

File ID#: IC063701
LIMS Transfer: (Y) N
Data Review By/Date: [illegible] 12/21/07

ville Laboratory
rporated

MERCURY PREPARATION

Logbook # 0326

st: TCB
12/20/07
Time/Temp: 1620 | 93
Time/Temp: 1650 | 99°

Instrument ID: HG3.1
Balance #: 1329 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 07C0227
Worksheet: HG122601
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	478			10mL	50mL	
0.2 µg/L	3C	0.100				
1.0	P5	0.500				
2.0	U0	1.000				
5.0	GR	2.500				
10.0	H3	5.000				
ICV	Gd	0.125	2.5			
CCV	B6	0.250	5.0			
ICB/CCB	A9					95.02
MB1	AHA			0.30		*DS127 100.00
LC1	111E	*	*	0.30		LCSS127
0712L342-001	290			0.35		95.84
001R	C48			0.30		
001S	HT	0.500	1.0	0.39		
002	S			0.32		94.86
003	1721			0.32		95.39
004	857			0.33		95.55
005	X3			0.38		91.48
006	95			0.31		90.82
007	I94			0.35		99.96
0712L348-001	C7 A94			0.31 0.35		90.17
001R	AN A27			0.35 0.33		
001S	R2 R4	0.500	1.0	0.31 0.35		
002	N1 J5			0.34 0.35		86.96
003	K35 D4			0.33 0.31		88.88
004	AH 27			0.35 0.35		86.75
005	PT NB			0.39 0.38		84.33

Standard:	ID	Prep Date/Time
A MS	R1 6072-75-07B	12/20/07 1315
CCV/LCS	US 6072-75-08A	

Reviewed By/Date: [signature] 12/27/07

see book # 9368 for std traceability information

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

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

CVAA-Prep1007

Page #:

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MERCURY PREPARATION

Logbook # 0326

yst: TCB
12/20/07
Time/Temp: See page
Time/Temp: 125

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

Prep Batch: 07C0227
Worksheet: HG122601
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.
0712348006	700			0.33	50mL	74.32
007	222			0.30		92.90
008	C15			0.31		88.04
009	555			0.39		91.31
010	AIR			0.33		94.01
011	6T			0.30		85.86
012	CB2			0.31		85.36
013	41			0.33		99.95

TCB 12/20/07

ard:	ID	Prep Date/Time
MS		
CCV/LCS	See page 125	

Reviewed By/Date: 12/27/07

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

st: TEB
12/20/07

Instrument ID: HG2.1
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 07C0228
Worksheet: HG122601
OP No. ME-HgCVAA, Rev. 02

Time/Temp: 1620 | 93°
Time/Temp: 1650 | 99°

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	478			10mL	50mL	
0.2 µg/L	3C	0.100				
1.0	P5	0.500				
2.0	40	1.000				
5.0	GR	2.500				
10.0	H3	5.000				
ICV	Gd	0.125	2.5			
CCV	B6	0.250	5.0			
ICB/CCB	A9					9.50L
MB1	JI			0.30		PBS128 100.00
LC1	500	*	*	0.34		LCSS128 ⊥
07121347-001	A94C7			.31		96.81
001R	A27A9			.35		⊥
001S	RUR2			.31		
002	JS NJ			.34		96.48
003	D4 K35			.33		96.59
004	27 AH			.35		96.90
005	NB PT			.39		93.23
TE 12/20/07						

TE 12/20/07

Spiked:	ID	Prep Date/Time
MS	R1 6072-75-07A	12/20/07 1315
CV/LCS	US 6072-75-08A	⊥

Reviewed By/Date: [signature] 12/27/07

see book # 9368 for std traceability information

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

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

CVAA-Prep1007

Page #:

onville Laboratory Use Only

07121342

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000028

ent TNU HANFORD SAF# RC-032

. Final Proj. Sampling Date

ject# 11343-606-001-9999-00

ject Contact/Phone#

nville Laboratory Project Manager U. JOHNSON

SW8446 Del STD TAT 14 DAY

te Rec'd 12-19-07 Date Due 1-3-08

		A	B	C	D	EF	G	H
Refrigerator #		2	2	2	2	2	2	2
#/Type Container	Liquid / Solid	1G	1G	1G	1G	1P	1G	1P
Volume		120	60	120	120	125	120	125
Preservatives		—	—	—	—	—	—	—
ANALYSES REQUESTED		VOA	ORGANIC: TCL BNA 8270A, PCB 8082, Pest-Herb 8081		TOT. TPH 418.1	INORG: TCP Metals 6010, TOT CN 9010	Sulfide 9030	IC Anions 300.0; pH (Soil) 9045

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

Lionville Laboratory Use Only

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected		0625H	0PCB	0608H	ITPH	Met①	ICNTO	ISFO	IC①	IPH			
001	J 163 37			SOIL	12-17-07	0855		X	X	X	X	X	X	X	X	X			
002	J 163 38			SOIL	12-17-07	1240		X	X	X	X	X	X	X	X	X			
003	J 163 39			SOIL	12-17-07	0905		X	X	X	X	X	X	X	X	X			
004	J 163 40			SOIL	12-17-07	0915		X	X	X	X	X	X	X	X	X			
005	J 163 41			SOIL	12-17-07	0925		X	X	X	X	X	X	X	X	X			
006	J 163 42			SOIL	12-17-07	0930		X	X	X	X	X	X	X	X	X			
007	J 163 54			SOIL	12-17-07	0940													

ecial Instructions:

Met① = HSL + B, Mo, Si (NO TL)

IC① = ICBR, ICCL, ICFL, ICNO2, ICNO3, ICSO4, ICPO4

Special Instructions:

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

Relinquished by	Received by	Date	Time
rd E.	[illegible]	12-19-07	1500

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-032-177	Page 2 of 3

Collector T. Welch-Koelling	**Company Contact** R.T. Coffman **Telephone No.** 528-6409	**Project Coordinator** KESSNER, JH	**Price Code** 8B **Data Turnaround** 7DAY
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	**Sampling Location** 120-F-1 Glass Dump SE Verification	**SAF No.** RC-032	
Ice Chest No. ERC-99-046	**Field Logbook No.** EFL-1174-4 **COA** R120F12000	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A080108	**Bill of Lading/Air Bill No.** See OSIC	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	P	aG	aG	P	aG	aG	aG			
No. of Container(s)	2	1	1	1	1	1	1			
Volume	125mL	60mL	120mL	125mL	120mL	120mL	120mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	IC Anions - 300.0; pH (Soil) - 9045	Total Cyanide - 9010; Sulfides - 9030	Pesticides - 8081	TPH (Total) - 418.1			

Sample No.	Matrix *	Sample Date	Sample Time										
J16337	SOIL	12-17-07	0855	X	X	X	X	X	X	X			5
J16338	SOIL	12-17-07	1240	X	X	X	X	X	X	X			6
J16339	SOIL	12-17-07	0905	X	X	X	X	X	X	X			7
J16340	SOIL	12-17-07	0915	X	X	X	X	X	X	X			8
J16341	SOIL	12-17-07	0925	X	X	X	X	X	X	X			9

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	12-17-07 1354	JR DeBuigne [signature]	1354 12-17-07
JR DeBuigne [signature]	1445 12-17-07	3728/2C	1445 12-17-07
3728/2C	12-18-07 0900	[signature]	12-18-07 0900
[signature]	12-18-07 1500	FED EX	
Fed Ex	12-19-07	[signature]	12-19-07 1500
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (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)

samples from 3728 Ref # 2C
3728 Custodian removed samples for shipping on 12/18/07.
Sampler unavailable to relinquish

Matrix *

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

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

WCH-EE-011

000000029

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-177	Page 3 of 3

Collector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 120-F-1 Glass Dump SE Verification		SAF No. RC-032
Ice Chest No. ERC-99-046	Field Logbook No. EFL-1174-4	COA R120F12000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A080108		Bill of Lading/Air Bill No. See OSPC

Price Code: 8B

Data Turnaround: 7DAY

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	P	aG	aG	P	aG	aG	aG				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	60mL	120mL	125mL	120mL	120mL	120mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	IC Anions - 300.0; pH (Soil) - 9045	Total Cyanide - 9010; Sulfides - 9030	Pesticides - 8081	TPH (Total) - 418.1				

Sample No.	Matrix *	Sample Date	Sample Time										
J16342	SOIL	12-17-07	0930	X	X	X	X	X	X	X			10
J16354	SOIL	12-17-07	0940	X									EB

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
TWELCH-KOELLING	12-17-07 1354	JR DeBurgue JR DeBurgue	1354 12-17-07
JR DeBurgue JR DeBurgue	Date/Time 1445 12-17-07	3728/2C	Date/Time 1445 12-17-07
3728/2C	12-18-07 0900	KM Singleton	12-18-07 0900
KM Singleton	12-18-07 1500	FED EX	
FED EX	12-19-07	Victor Hernandez	12-19-07 1500

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (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)

samples from 3728 Ref # 2C.
3728 Custodian removed samples for shipping on 12/18/07.
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

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

NCH-EE-011

00000030

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #: RC-032

Date: 12-19-07

LvLI Batch #: 0712L342

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7914 5895 7232
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4.1°	°C	Cooler # ERC-99-046
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 _____

lvl

RECEIVED
2008

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-032 K1066

DATE RECEIVED: 12/19/07 LVL LOT # :07121342

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16337	001	S	07LE0721	12/17/07	12/26/07	12/31/07
J16337	001 MS	S	07LE0721	12/17/07	12/26/07	12/31/07
J16337	001 MSD	S	07LE0721	12/17/07	12/26/07	12/31/07
J16338	002	S	07LE0721	12/17/07	12/26/07	12/31/07
J16339	003	S	07LE0721	12/17/07	12/26/07	12/31/07
J16340	004	S	07LE0721	12/17/07	12/26/07	12/31/07
J16341	005	S	07LE0721	12/17/07	12/26/07	12/31/07
J16342	006	S	07LE0721	12/17/07	12/26/07	01/02/08

LAB QC:

SBLKRF	MB1	S	07LE0721	N/A	12/26/07	12/28/07
SBLKRF	MB1 BS	S	07LE0721	N/A	12/26/07	12/28/07

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-032
LVL #: 0712L342
SDG/SAF # K1066/RC-032

W.O. #: 11343-606-001-9999-00
Date Received: 12-19-2007

SEMIVOLATILE

Six (6) soil samples were collected on 12-17-2007.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 12-26-2007 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 12-28,31-2007 and 01-02-2008.

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 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. Non-target compounds were detected in the samples.

3. All surrogate recoveries were within acceptance criteria.

4. Two (2) of one hundred and twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

5. All blank spike recoveries were within acceptance criteria.

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

7. All calibration criteria were met.

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

r:\group\data\2007\bna\tnu-hanford\0712-342ks2.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 22 pages.

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

LIONVILLE LABORATORY INC.

9. 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").

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

1/4/08
Date

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

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 07MS275

Initiator: Sharon Sylo
Date: 1-2-08
Client: TWU RC032

Batch: 07LL342
Samples: 001ms, 001msd
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: SOLID
Prep Batch: 07LG721

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)

low recovery of bis(2-chloroisopropyl)ether in the ms + msd but BS is ok
(2,2'-oxybis(1-chloropropane))

2. Known or Probable Causes(s) sporadic all other spikes/surrogates ok
PLE 1/4/08

3. Discussion and Proposed Action Other Description: namate

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

4. Project Manager Instructions...signature/date: 1/4/08

__ 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: 1/4/08 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 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
1	X Project Mgr: Stone/Johnson	__	__ GC/LC: Kiger
__	__ Data Management: Stilwell	2	X MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

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: 01/03/08 11:19

RFW Batch Number: 0712L342 Client: TNU-HANFORD RC-032 Work Order: 11343606001 Page: 1a

	Cust ID:	J16337		J16337		J16337		J16338		J16339		J16340	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	64	%	69	%	61	%	68	%	60	%	53	%
	2-Fluorobiphenyl	64	%	67	%	62	%	67	%	61	%	55	%
	Terphenyl-d14	85	%	94	%	85	%	114	%	88	%	104	%
	Phenol-d5	74	%	82	%	71	%	83	%	72	%	70	%
	2-Fluorophenol	80	%	85	%	74	%	90	%	69	%	70	%
	2,4,6-Tribromophenol	75	%	53	%	42	%	67	%	36	%	49	%
			fl		fl		fl		fl		fl		fl
Phenol		350	U	86	%	80	%	350	U	350	U	350	U
bis(2-Chloroethyl)ether		350	U	65	%	62	%	350	U	350	U	350	U
2-Chlorophenol		350	U	89	%	83	%	350	U	350	U	350	U
1,3-Dichlorobenzene		350	U	70	%	68	%	350	U	350	U	350	U
1,4-Dichlorobenzene		350	U	72	%	67	%	350	U	350	U	350	U
1,2-Dichlorobenzene		350	U	75	%	68	%	350	U	350	U	350	U
2-Methylphenol		350	U	85	%	79	%	350	U	350	U	350	U
2,2'-oxybis(1-Chloropropane)		350	U	49 *	%	45 *	%	350	U	350	U	350	U
3/4 Methylphenol		350	U	88	%	81	%	350	U	350	U	350	U
N-Nitroso-di-n-propylamine		350	U	76	%	69	%	350	U	350	U	350	U
Hexachloroethane		350	U	61	%	57	%	350	U	350	U	350	U
Nitrobenzene		350	U	69	%	66	%	350	U	350	U	350	U
Isophorone		350	U	83	%	79	%	350	U	350	U	350	U
2-Nitrophenol		350	U	83	%	82	%	350	U	350	U	350	U
2,4-Dimethylphenol		350	U	67	%	64	%	350	U	350	U	350	U
bis(2-Chloroethoxy)methane		350	U	75	%	75	%	350	U	350	U	350	U
2,4-Dichlorophenol		350	U	83	%	87	%	350	U	350	U	350	U
1,2,4-Trichlorobenzene		350	U	72	%	72	%	350	U	350	U	350	U
Naphthalene		350	U	74	%	72	%	350	U	350	U	350	U
4-Chloroaniline		350	U	59	%	77	%	350	U	350	U	350	U
Hexachlorobutadiene		350	U	78	%	74	%	350	U	350	U	350	U
4-Chloro-3-methylphenol		350	U	104	%	100	%	350	U	350	U	350	U
2-Methylnaphthalene		350	U	80	%	79	%	350	U	350	U	350	U
Hexachlorocyclopentadiene		350	U	61	%	55	%	350	U	350	U	350	U
2,4,6-Trichlorophenol		350	U	58	%	56	%	350	U	350	U	350	U
2,4,5-Trichlorophenol		870	U	79	%	80	%	880	U	870	U	870	U

*= Outside of EPA CLP QC limits.

00000008

Cust ID:	J16337		J16337		J16337		J16338		J16339		J16340	
RFW#:	001		001 MS		001 MSD		002		003		004	
2-Chloronaphthalene	350	U	74	%	73	%	350	U	350	U	350	U
2-Nitroaniline	870	U	78	%	80	%	880	U	870	U	870	U
Dimethylphthalate	350	U	81	%	79	%	350	U	350	U	350	U
Acenaphthylene	350	U	73	%	72	%	350	U	350	U	350	U
2,6-Dinitrotoluene	350	U	78	%	88	%	350	U	350	U	350	U
3-Nitroaniline	870	U	74	%	82	%	880	U	870	U	870	U
Acenaphthene	350	U	74	%	69	%	350	U	350	U	350	U
2,4-Dinitrophenol	870	U	48	%	27	%	880	U	870	U	870	U
4-Nitrophenol	870	U	52	%	51	%	880	U	870	U	870	U
Dibenzofuran	350	U	80	%	80	%	350	U	350	U	350	U
2,4-Dinitrotoluene	350	U	96	%	89	%	350	U	350	U	350	U
Diethylphthalate	350	U	80	%	79	%	350	U	350	U	350	U
4-Chlorophenyl-phenylether	350	U	77	%	76	%	350	U	350	U	350	U
Fluorene	350	U	73	%	73	%	350	U	350	U	350	U
4-Nitroaniline	870	U	90	%	95	%	880	U	870	U	870	U
4,6-Dinitro-2-methylphenol	870	U	66	%	49	%	880	U	870	U	870	U
N-Nitrosodiphenylamine (1)	350	U	66	%	66	%	350	U	350	U	350	U
4-Bromophenyl-phenylether	350	U	80	%	71	%	350	U	350	U	350	U
Hexachlorobenzene	350	U	94	%	89	%	350	U	350	U	350	U
Pentachlorophenol	870	U	68	%	53	%	880	U	870	U	870	U
Phenanthrene	350	U	85	%	78	%	350	U	350	U	350	U
Anthracene	350	U	82	%	77	%	350	U	350	U	350	U
Carbazole	350	U	90	%	86	%	350	U	350	U	350	U
Di-n-butylphthalate	350	U	88	%	80	%	350	U	350	U	350	U
Fluoranthene	350	U	90	%	86	%	350	U	350	U	350	U
Pyrene	350	U	80	%	78	%	350	U	350	U	350	U
Butylbenzylphthalate	350	U	85	%	82	%	350	U	350	U	350	U
3,3'-Dichlorobenzidine	350	U	67	%	74	%	350	U	350	U	350	U
Benzo(a)anthracene	350	U	82	%	78	%	350	U	350	U	350	U
Chrysene	350	U	81	%	80	%	350	U	350	U	350	U
bis(2-Ethylhexyl)phthalate	350	U	86	%	82	%	28	JB	20	JB	200	JB
Di-n-octyl phthalate	350	U	102	%	84	%	350	U	350	U	350	U
Benzo(b)fluoranthene	350	U	92	%	94	%	350	U	350	U	350	U
Benzo(k)fluoranthene	350	U	95	%	80	%	350	U	350	U	350	U
Benzo(a)pyrene	350	U	94	%	87	%	350	U	350	U	350	U
Indeno(1,2,3-cd)pyrene	350	U	84	%	74	%	350	U	350	U	350	U
Dibenz(a,h)anthracene	350	U	82	%	73	%	350	U	350	U	350	U
Benzo(g,h,i)perylene	350	U	80	%	72	%	350	U	350	U	350	U

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

000000009

000000010

	Cust ID:	J16341		J16342		SBLKRF		SBLKRF BS	
Sample Information	RFW#:	005		006		07LE0721-MB1		07LE0721-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	56	%	66	%	85	%	76	%
	2-Fluorobiphenyl	61	%	64	%	81	%	81	%
	Terphenyl-d14	97	%	120	%	110	%	96	%
	Phenol-d5	73	%	70	%	103	%	85	%
	2-Fluorophenol	75	%	78	%	109	%	95	%
	2,4,6-Tribromophenol	37	%	50	%	82	%	103	%
Phenol		360	U	370	U	330	U	85	%
bis(2-Chloroethyl)ether		360	U	370	U	330	U	69	%
2-Chlorophenol		360	U	370	U	330	U	87	%
1,3-Dichlorobenzene		360	U	370	U	330	U	74	%
1,4-Dichlorobenzene		360	U	370	U	330	U	72	%
1,2-Dichlorobenzene		360	U	370	U	330	U	72	%
2-Methylphenol		360	U	370	U	330	U	88	%
2,2'-oxybis(1-Chloropropane)		360	U	370	U	330	U	52	%
3/4 Methylphenol		360	U	370	U	330	U	79	%
N-Nitroso-di-n-propylamine		360	U	370	U	330	U	72	%
Hexachloroethane		360	U	370	U	330	U	59	%
Nitrobenzene		360	U	370	U	330	U	67	%
Isophorone		360	U	370	U	330	U	82	%
2-Nitrophenol		360	U	370	U	330	U	86	%
2,4-Dimethylphenol		360	U	370	U	330	U	69	%
bis(2-Chloroethoxy)methane		360	U	370	U	330	U	77	%
2,4-Dichlorophenol		360	U	370	U	330	U	84	%
1,2,4-Trichlorobenzene		360	U	370	U	330	U	74	%
Naphthalene		360	U	370	U	330	U	75	%
4-Chloroaniline		360	U	370	U	330	U	80	%
Hexachlorobutadiene		360	U	370	U	330	U	80	%
4-Chloro-3-methylphenol		360	U	370	U	330	U	101	%
2-Methylnaphthalene		360	U	370	U	330	U	82	%
Hexachlorocyclopentadiene		360	U	370	U	330	U	61	%
2,4,6-Trichlorophenol		360	U	370	U	330	U	93	%
2,4,5-Trichlorophenol		910	U	920	U	830	U	92	%

*= Outside of EPA CLP QC limits.

Cust ID:	J16341		J16342		SBLKRF		SBLKRF BS	
RFW#:	005		006		07LE0721-MB1		07LE0721-MB1	
2-Chloronaphthalene	360	U	370	U	330	U	79	%
2-Nitroaniline	910	U	920	U	830	U	85	%
Dimethylphthalate	360	U	370	U	330	U	84	%
Acenaphthylene	360	U	370	U	330	U	81	%
2,6-Dinitrotoluene	360	U	370	U	330	U	90	%
3-Nitroaniline	910	U	920	U	830	U	93	%
Acenaphthene	360	U	370	U	330	U	79	%
2,4-Dinitrophenol	910	U	920	U	830	U	28	%
4-Nitrophenol	910	U	920	U	830	U	59	%
Dibenzofuran	360	U	370	U	330	U	83	%
2,4-Dinitrotoluene	360	U	370	U	330	U	90	%
Diethylphthalate	360	U	370	U	330	U	81	%
4-Chlorophenyl-phenylether	360	U	370	U	330	U	81	%
Fluorene	360	U	370	U	330	U	78	%
4-Nitroaniline	910	U	920	U	830	U	91	%
4,6-Dinitro-2-methylphenol	910	U	920	U	830	U	47	%
N-Nitrosodiphenylamine (1)	360	U	370	U	330	U	72	%
4-Bromophenyl-phenylether	360	U	370	U	330	U	85	%
Hexachlorobenzene	360	U	370	U	330	U	103	%
Pentachlorophenol	910	U	920	U	830	U	48	%
Phenanthrene	360	U	370	U	330	U	91	%
Anthracene	360	U	370	U	330	U	86	%
Carbazole	360	U	370	U	330	U	84	%
Di-n-butylphthalate	360	U	370	U	330	U	87	%
Fluoranthene	360	U	370	U	330	U	83	%
Pyrene	360	U	370	U	330	U	81	%
Butylbenzylphthalate	360	U	370	U	330	U	90	%
3,3'-Dichlorobenzidine	360	U	370	U	330	U	86	%
Benzo(a)anthracene	360	U	370	U	330	U	89	%
Chrysene	360	U	370	U	330	U	93	%
bis(2-Ethylhexyl)phthalate	27	JB	25	JB	23	J	90	%
Di-n-octyl phthalate	360	U	370	U	330	U	91	%
Benzo(b)fluoranthene	360	U	370	U	330	U	84	%
Benzo(k)fluoranthene	360	U	370	U	330	U	95	%
Benzo(a)pyrene	360	U	370	U	330	U	93	%
Indeno(1,2,3-cd)pyrene	360	U	370	U	330	U	98	%
Dibenz(a,h)anthracene	360	U	370	U	330	U	98	%
Benzo(g,h,i)perylene	360	U	370	U	330	U	97	%

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16337

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-032 K1066

Matrix: (soil/water) SOIL

Lab Sample ID: 0712L342-001

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

Lab File ID: N123104

Level: (low/med) LOW

Date Received: 12/19/07

% Moisture: 4 decanted: (Y/N)__

Date Extracted: 12/26/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 12/31/07

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	2.352	600	JAB
2.	ALKANE	2.474	1000	JB
3.	UNKNOWN	2.997	50000	JB
4.	UNKNOWN	3.023	8000	J
5.	ALDOL CONDENSATE	4.043	400	JA

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16338

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-032 K1066

Matrix: (soil/water) SOIL

Lab Sample ID: 0712L342-002

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

Lab File ID: N123107

Level: (low/med) LOW

Date Received: 12/19/07

% Moisture: 5 decanted: (Y/N)__

Date Extracted: 12/26/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 12/31/07

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	2.360	600	JAB
2.	ALKANE	2.474	800	JB
3.	ALKANE	2.578	500	JB
4.	UNKNOWN	3.040	70000	JB
5.	UNKNOWN	22.463	600	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16339

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-032 K1066

Matrix: (soil/water) SOIL

Lab Sample ID: 0712L342-003

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

Lab File ID: N123108

Level: (low/med) LOW

Date Received: 12/19/07

% Moisture: 5 decanted: (Y/N)__

Date Extracted: 12/26/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 12/31/07

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	2.369	1000	JAB
2.	UNKNOWN	2.962	40000	JB
3.	ALDOL CONDENSATE	4.043	300	JA
4.	UNKNOWN	16.613	700	JB
5.	UNKNOWN	22.463	600	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16340

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-032 K1066

Matrix: (soil/water) SOIL

Lab Sample ID: 0712L342-004

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

Lab File ID: N123109

Level: (low/med) LOW

Date Received: 12/19/07

% Moisture: 4 decanted: (Y/N)__

Date Extracted: 12/26/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 12/31/07

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	2.361	600	JAB
2.	ALKANE	2.448	700	JB
3.	ALKANE	2.588	200	JB
4.	UNKNOWN	2.962	40000	JB
5.	ALDOL CONDENSATE	4.043	300	JA

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16341

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-032 K1066

Matrix: (soil/water) SOIL

Lab Sample ID: 0712L342-005

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

Lab File ID: N123110

Level: (low/med) LOW

Date Received: 12/19/07

% Moisture: 9 decanted: (Y/N)__

Date Extracted: 12/26/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 12/31/07

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	2.358	400	JAB
2.	UNKNOWN	2.436	900	J
3.	UNKNOWN	2.959	50000	JB
4.	UNKNOWN	16.619	600	JB
5.	UNKNOWN	22.460	700	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16342

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-032 K1066

Matrix: (soil/water) SOIL

Lab Sample ID: 0712L342-006

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

Lab File ID: N010204

Level: (low/med) LOW

Date Received: 12/19/07

% Moisture: 9 decanted: (Y/N)__

Date Extracted: 12/26/07

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/02/08

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	2.294	600	JAB
2.	ALKANE	2.399	400	JB
3.	UNKNOWN	2.887	50000	JB
4.	UNKNOWN	16.530	400	JB
5.	UNKNOWN	22.397	400	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKRF

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-032 K1066

Matrix: (soil/water) SOIL

Lab Sample ID: 07LE0721-MB1

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

Lab File ID: N122803

Level: (low/med) LOW

Date Received: 12/26/07

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

Date Extracted: 12/26/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 12/28/07

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	2.508	600	JA
2.	ALKANE	2.613	300	J
3.	ALKANE	2.735	400	J
4.	UNKNOWN	3.058	40000	J
5.	UNKNOWN	16.814	200	J

Lionville Laboratory Use Only
07121342

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU HANFORD SAF# RC-032
Final Proj. Sampling Date
Project# 11343-606-001-9999-00
Project Contact/Phone#
Lionville Laboratory Project Manager: U. JOHNSON
SW846 Del STD TAT 28Day
Date Rec'd 12-19-07 Date Due 1-3-08

		A	B	C	D	EF	G	H
Refrigerator #		2	2	2	2	2	2	2
#/Type Container	Liquid							
	Solid	1G	1G	1G	1G	1P	1G	1P
Volume		120	60	120	120	125	120	125
Preservatives		—	—	—	—	—	—	—
ANALYSES REQUESTED		ORGANIC			Tot. TPH 418.1	INORG		IC Anions 300.0; pH (soil) 9045
		VOA	7/8 BNA 8270A	PCB 8082		Metals 6010	CN 9010	Fluoride 9056

Lionville Laboratory Use Only

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	8270A	0625H	0PCB	0608H		ITPH		Met①	ICNTO	ISFO	IC①	IPH			
	001	J163737			SOIL	12-17-07	0855		X	X	X		X		X	X	X	X	X			
	002	J163738			SOIL	12-17-07	1240		X	X	X		X		X	X	X	X	X			
	003	J163739			SOIL	12-17-07	0905		X	X	X		X		X	X	X	X	X			
	004	J163740			SOIL	12-17-07	0915		X	X	X		X		X	X	X	X	X			
	005	J163741			SOIL	12-17-07	0925		X	X	X		X		X	X	X	X	X			
	006	J163742			SOIL	12-17-07	0930		X	X	X		X		X	X	X	X	X			
	007	J163754			SOIL	12-17-07	0940								/							

Special Instructions:
Met① = HSL + B, Mo, Si (NO TL)
IC① = ICBR, ICCL, ICFL, ICNO2, ICNO3, ICSO4, ICPO4

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	12-19-07	1500

Relinquished by	Received by	Date	Time

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

000000019

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-177	Page 2 of 2

Collector T. Welch-Koelling	Company Contact R.T. Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Price Code 8B	Data Turnaround 7DAY		
Project Designation 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 120-F-1 Glass Dump SE Verification		SAF No. RC-032
Ice Chest No. ERC-99-046	Field Logbook No. EFL-1174-4	COA R120F12000	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080108		Bill of Lading/Air Bill No. See OSIC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	P	aG	aG	P	aG	aG	aG				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	60mL	120mL	125mL	120mL	120mL	120mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	IC Anions - 300.0; pH (Soil) - 9045	Total Cyanide - 9010; Sulfides - 9030	Pesticides - 8081	TPH (Total) - 418.1				
Sample No. / Matrix * / Sample Date / Sample Time											
J16337 / SOIL / 12-17-07 / 0855	X	X	X	X	X	X	X				5
J16338 / SOIL / 12-17-07 / 1240	X	X	X	X	X	X	X				6
J16339 / SOIL / 12-17-07 / 0905	X	X	X	X	X	X	X				7
J16340 / SOIL / 12-17-07 / 0915	X	X	X	X	X	X	X				8
J16341 / SOIL / 12-17-07 / 0925	X	X	X	X	X	X	X				9

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	12-17-07 1354	JR DeBuique JR DeBuique	1354 12-17-07
JR DeBuique JR DeBuique	12-17-07 1445	3728/2C	1446 12-17-07
3728/2C 12-18-07	0900	[illegible] 12-18-07	0900
[illegible] 12-18-07	LOCH 1500	FED EX	
Fed Ex	12-18-07	[illegible] 12-18-07	1500

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (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)

samples from 3728 Ref # 2C
3728 Custodian removed samples for
shipping on 12/18/07.
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

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

VCH-EE-011

000000020

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-032-177	Page 3 of 3

Collector: T. Welch-Koelling	Company Contact: R.T. Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Project Designation: 100-F Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 120-F-1 Glass Dump SE Verification		SAF No.: RC-032
Ice Chest No.: ERC-99-046	Field Logbook No.: EFL-1174-4	COA: R120F12000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A080108		Bill of Lading/Air Bill No.: See OSPC

Price Code: 8B

Data Turnaround: 7DAY

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	P	aG	aG	P	aG	aG	aG				
No. of Container(s)	2	1	1	1	1	1	1				
Volume	125mL	60mL	120mL	125mL	120mL	120mL	120mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	IC Anions - 300.0; pH (Soil) - 9045	Total Cyanide - 9010; Sulfides - 9030	Pesticides - 8081	TPH (Total) - 418.1				
Sample No. / Matrix * / Sample Date / Sample Time											
116342 / SOIL / 12-17-07 / 0930	X	X	X	X	X	X	X				10
116354 / SOIL / 12-17-07 / 0940	X										EB

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: T. Welch-Koelling	12-17-07 1354	Received By/Stored In: JR DeBusque	1354 12-17-07
Relinquished By/Removed From: JR DeBusque	1445 12-17-07	Received By/Stored In: 3728/2C	1445 12-17-07
Relinquished By/Removed From: 3728/2C	12-18-07 0900	Received By/Stored In: K M Singleton	12-18-07 0900
Relinquished By/Removed From: K M Singleton	12-18-07 1500	Received By/Stored In: FED EX	
Relinquished By/Removed From: FED EX	12-19-07	Received By/Stored In: Vicki Hennerty	12-19-07 1500
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (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)

samples from 3728 Ref # 2C
3728 Custodian removed samples for shipping on 12/18/07.
Sampler unavailable to relinquish

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

VCH-EE-011

000000021

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAP/SOW/Release #: RC-032

Date: 12-19-07

LvLI Batch #: 0712L342

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier: Fed Ex		Airbill # 7914 5895 7232
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4.1°	°C	Cooler # ERC-99-046
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 _____

lvl