0074393

SAF-RC-073
100-D/DR Burial Grounds & Remaining Sites – Other Solid Quick Turn
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Jeanette Duncan H4-21 KW 11/6/07
INITIAL/DATE

RECEIVED
NOV 14 2007
EDMC

COMMENTS:

SDG K1002 SAF-RC-073

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: 126-DR-1

LIONVILLE LABORATORY INC.

2 November 2007

RECEIVED NOV 2007

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 #	0710L047
SDG #	K1002
SAF #	RC-073
Date Received	10/16/07
# Samples	1
Matrix	OTHER SOLID
Volatiles	
Semivolatiles	X
Pest/PCB	
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

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-073 K1002

RECEIVED NOV 2007

DATE RECEIVED: 10/16/07 LVL LOT # :0710L047

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15PV3						
TCLP	001	SO	07LTO130	10/11/07	10/17/07	10/18/07
SILVER, TCLP LEACHAT	002	W	07L0560	10/17/07	10/31/07	10/31/07
SILVER, TCLP LEACHAT	002 REP	W	07L0560	10/17/07	10/31/07	10/31/07
SILVER, TCLP LEACHAT	002 MS	W	07L0560	10/17/07	10/31/07	10/31/07
ARSENIC, TCLP LEACHA	002	W	07L0560	10/17/07	10/31/07	10/31/07
ARSENIC, TCLP LEACHA	002 REP	W	07L0560	10/17/07	10/31/07	10/31/07
ARSENIC, TCLP LEACHA	002 MS	W	07L0560	10/17/07	10/31/07	10/31/07
BARIUM, TCLP LEACHAT	002	W	07L0560	10/17/07	10/31/07	10/31/07
BARIUM, TCLP LEACHAT	002 REP	W	07L0560	10/17/07	10/31/07	10/31/07
BARIUM, TCLP LEACHAT	002 MS	W	07L0560	10/17/07	10/31/07	10/31/07
CADMIUM, TCLP LEACHA	002	W	07L0560	10/17/07	10/31/07	10/31/07
CADMIUM, TCLP LEACHA	002 REP	W	07L0560	10/17/07	10/31/07	10/31/07
CADMIUM, TCLP LEACHA	002 MS	W	07L0560	10/17/07	10/31/07	10/31/07
CHROMIUM, TCLP LEACH	002	W	07L0560	10/17/07	10/31/07	10/31/07
CHROMIUM, TCLP LEACH	002 REP	W	07L0560	10/17/07	10/31/07	10/31/07
CHROMIUM, TCLP LEACH	002 MS	W	07L0560	10/17/07	10/31/07	10/31/07
MERCURY, TCLP LEACHA	002	W	07C0199	10/17/07	10/31/07	10/31/07
MERCURY, TCLP LEACHA	002 REP	W	07C0199	10/17/07	10/31/07	10/31/07
MERCURY, TCLP LEACHA	002 MS	W	07C0199	10/17/07	10/31/07	10/31/07
LEAD, TCLP LEACHATE	002	W	07L0560	10/17/07	10/31/07	10/31/07
LEAD, TCLP LEACHATE	002 REP	W	07L0560	10/17/07	10/31/07	10/31/07
LEAD, TCLP LEACHATE	002 MS	W	07L0560	10/17/07	10/31/07	10/31/07
SELENIUM, TCLP LEACH	002	W	07L0560	10/17/07	10/31/07	10/31/07
SELENIUM, TCLP LEACH	002 REP	W	07L0560	10/17/07	10/31/07	10/31/07
SELENIUM, TCLP LEACH	002 MS	W	07L0560	10/17/07	10/31/07	10/31/07

LAB QC:

SILVER LABORATORY	LC1 BS	W	07L0560	N/A	10/31/07	10/31/07
SILVER, TCLP LEACHAT	MB1	W	07L0560	N/A	10/31/07	10/31/07
SILVER, TCLP LEACHAT	MB2	W	07L0560	N/A	10/31/07	10/31/07
ARSENIC LABORATORY	LC1 BS	W	07L0560	N/A	10/31/07	10/31/07
ARSENIC, TCLP LEACHA	MB1	W	07L0560	N/A	10/31/07	10/31/07
ARSENIC, TCLP LEACHA	MB2	W	07L0560	N/A	10/31/07	10/31/07
BARIUM LABORATORY	LC1 BS	W	07L0560	N/A	10/31/07	10/31/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-073 K1002

DATE RECEIVED: 10/16/07 LVL LOT # :0710L047

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BARIUM, TCLP LEACHAT	MB1	W	07L0560	N/A	10/31/07	10/31/07
BARIUM, TCLP LEACHAT	MB2	W	07L0560	N/A	10/31/07	10/31/07
CADMIUM LABORATORY	LC1 BS	W	07L0560	N/A	10/31/07	10/31/07
CADMIUM, TCLP LEACHA	MB1	W	07L0560	N/A	10/31/07	10/31/07
CADMIUM, TCLP LEACHA	MB2	W	07L0560	N/A	10/31/07	10/31/07
CHROMIUM LABORATORY	LC1 BS	W	07L0560	N/A	10/31/07	10/31/07
CHROMIUM, TCLP LEACH	MB1	W	07L0560	N/A	10/31/07	10/31/07
CHROMIUM, TCLP LEACH	MB2	W	07L0560	N/A	10/31/07	10/31/07
MERCURY LABORATORY	LC1 BS	W	07C0199	N/A	10/31/07	10/31/07
MERCURY, TOTAL	MB1	W	07C0199	N/A	10/31/07	10/31/07
MERCURY, TCLP LEACHA	MB2	W	07C0199	N/A	10/31/07	10/31/07
LEAD LABORATORY	LC1 BS	W	07L0560	N/A	10/31/07	10/31/07
LEAD, TCLP LEACHATE	MB1	W	07L0560	N/A	10/31/07	10/31/07
LEAD, TCLP LEACHATE	MB2	W	07L0560	N/A	10/31/07	10/31/07
SELENIUM LABORATORY	LC1 BS	W	07L0560	N/A	10/31/07	10/31/07
SELENIUM, TCLP LEACH	MB1	W	07L0560	N/A	10/31/07	10/31/07
SELENIUM, TCLP LEACH	MB2	W	07L0560	N/A	10/31/07	10/31/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-073
LVL#: 0710L047
SDG/SAF#: K1002/RC-073

W.O.#: 11343-606-001-9999-00
Date Received: 10-16-07

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.

1. This narrative covers the analysis of 1 TCLP leachate sample.

2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary.

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), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

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

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

9. The duplicate analysis for 1 analyte was outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

10. The TCLP extract from sample J15PV3 was selected for the matrix spike (MS) for this analytical batch. All MS recoveries were greater than 50% as per method criteria.

11. For the purposes of this report, the data has been reported to the Instrument Detection Limit

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 14 pages.

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

(IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

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

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

for Main Daniels
Laboratory Manager
Lionville Laboratory Incorporated

11/2/07
Date

jjw/m10-047

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#: 0710L047

Leaching Procedure: __1310 X1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A X3010A __3015 __3020A __3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	__6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X6010B		__200.7				__99
Beryllium	__6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	X6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	X6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	__6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	X6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	X7470A [3]	__7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	__6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2__200.9			__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

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 11/01/07

CLIENT: TNUHANFORD RC-073 K1002 LVL LOT #: 0710L047

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J15PV3	Silver, TCLP Leachate	4.5	u	UG/L	4.5	1.0
		Arsenic, TCLP Leachate	31.7	u	UG/L	31.7	1.0
		Barium, TCLP Leachate	6.3		UG/L	3.1	1.0
		Cadmium, TCLP Leachate	5.6	u	UG/L	5.6	1.0
		Chromium, TCLP Leachate	21.2		UG/L	4.6	1.0
		Mercury, TCLP Leachate	0.10	u	UG/L	0.10	1.0
		Lead, TCLP Leachate	34.8	u	UG/L	34.8	1.0
		Selenium, TCLP Leachate	41.3	u	UG/L	41.3	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/01/07

CLIENT: TNUHANFORD RC-073 K1002 LVL LOT #: 0710L047

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	07L0560-MB1	Silver, TCLP Leachate	4.5	u	UG/L	4.5	1.0
		Arsenic, TCLP Leachate	31.7	u	UG/L	31.7	1.0
		Barium, TCLP Leachate	3.1	u	UG/L	3.1	1.0
		Cadmium, TCLP Leachate	5.6	u	UG/L	5.6	1.0
		Chromium, TCLP Leachate	4.6	u	UG/L	4.6	1.0
		Lead, TCLP Leachate	34.8	u	UG/L	34.8	1.0
		Selenium, TCLP Leachate	41.3	u	UG/L	41.3	1.0
BLANK2	07L0560-MB2	Silver, TCLP Leachate	4.5	u	UG/L	4.5	1.0
		Arsenic, TCLP Leachate	31.7	u	UG/L	31.7	1.0
		Barium, TCLP Leachate	3.1	u	UG/L	3.1	1.0
		Cadmium, TCLP Leachate	5.6	u	UG/L	5.6	1.0
		Chromium, TCLP Leachate	4.6	u	UG/L	4.6	1.0
		Lead, TCLP Leachate	34.8	u	UG/L	34.8	1.0
		Selenium, TCLP Leachate	41.3	u	UG/L	41.3	1.0
BLANK1	07C0199-MB1	Mercury, Total	0.10	u	UG/L	0.10	1.0
BLANK2	07C0199-MB2	Mercury, TCLP Leachate	0.10	u	UG/L	0.10	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 11/01/07

CLIENT: TNUHANFORD RC-073 K1002 LVL LOT #: 0710L047

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	J15PV3	Silver, TCLP Leachate	3890	4.5 u	5000	77.8	1.0
		Arsenic, TCLP Leachate	4870	31.7 u	5000	97.4	1.0
		Barium, TCLP Leachate	97000	6.3	100000	97.0	6.0
		Cadmium, TCLP Leachate	918	5.6 u	1000	91.8	1.0
		Chromium, TCLP Leachat	4490	21.2	5000	89.4	1.0
		Mercury, TCLP Leachate	185	0.10u	200	92.3	26.0
		Lead, TCLP Leachate	4470	34.8 u	5000	89.4	1.0
		Selenium, TCLP Leachat	953	41.3 u	1000	95.3	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 11/01/07

CLIENT: TNUHANFORD RC-073 K1002 LVL LOT #: 0710L047

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	J15PV3	Silver, TCLP Leachate	4.5 u	4.5 u	NC	1.0
		Arsenic, TCLP Leachate	31.7 u	43.0	~~NC~~ 200	1.0
		Barium, TCLP Leachate	6.3	6.8	7.6	1.0
		Cadmium, TCLP Leachate	5.6 u	5.6 u	NC	1.0
		Chromium, TCLP Leachate	21.2	21.1	0.47	1.0
		Mercury, TCLP Leachate	0.10u	0.10u	NC	1.0
		Lead, TCLP Leachate	34.8 u	34.8 u	NC	1.0
		Selenium, TCLP Leachate	41.3 u	41.3 u	NC	1.0

corrected value
pw 11/1/07

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 11/01/07

CLIENT: TNUHANFORD RC-073 K1002 LVL LOT #: 0710L047

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	07L0560-LC1	Silver, LCS	474	500	UG/L	94.8
		Arsenic, LCS	10000	10000	UG/L	100.0
		Barium, LCS	4960	5000	UG/L	99.2
		Cadmium, LCS	233	250	UG/L	93.3
		Chromium, LCS	494	500	UG/L	98.8
		Lead, LCS	2480	2500	UG/L	99.4
		Selenium, LCS	9790	10000	UG/L	97.9
LCS1	07C0199-LC1	Mercury, LCS	5.0	5.0	UG/L	100.2

ville Laboratory Use Only

7/0L047

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

nt TNU HANFORD SAF# RC-073

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

ville Laboratory Project Manager O Johnson

SW846 Del STD TAT 15 days

Rec'd 10-16-07 Date Due 10-31-07

		A						B	C		D				
Refrigerator #		3						3	3		3				
#/Type Container	Liquid / Solid	1G				LEACHATE		LEACHATE	1G	1G		1P			
Volume		60							60	60		60			
Preservatives															
ANALYSES REQUESTED →		ORGANIC							INORG						
		VOA	TCLP BNA	Pest/PCB	Herb				TCLP Metal Hg	TOT CN	SULFATE	TC Anions PH			

MIX ES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only												
									TCLP			0625T		RORATCW	TCLP	TCLWTO	TSSFO	TPH TCBR	TCCL TCFL	TCNO2 TCNO3	TCSO4 TCPO4
	001	T15PV3	✓	✓	OTHER SOLID	10/11/07	0856		X						X	X	X	X	X	X	X
	002	S15PV3 TCLP of 001			L	*						X		X							

cial Instructions:

Special Instructions:

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

*See lab chron

Relinquished by	Received by	Date	Time
DEP	V Fernandez	10/16/07	0940

Relinquished by	Received by	Date	Time

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

000000012

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-073-022 | Page 1 of 1

lector D.W.Shea/SEC subcontractor Caldwell, J.	Company Contact D.W.Shea	Telephone No. 521-6014	Project Coordinator KESSNER, JH
Price Code 9K	Data Turnaround 15 days		
ject Designation 00-D/DR Burial Grounds & Remaining Sites - Other Solid	Sampling Location 126-DR-1		SAF No. RC-073
Chest No. AFS-04-053	Field Logbook No. EL-1607-2	COA R26DR12600	Method of Shipment Fed Ex
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. ~~See OSPC~~ 10-15-07 A080094		Bill of Lading/Air Bill No. See OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	G	G/P	G	Gs*							
No. of Container(s)	1	1	1	1							
Volume	60mL	60mL	60mL	60mL							

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	IC Anions - 300.0; pH - 9045	Total Cyanide - 9010 & Sulfide DWS 10/11/07	TCLP Semi-VOA - 1311/8270A						
5PV3	OTHER SOLID	10/11/07	0856	✓	✓	✓	✓						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
J. Caldwell III (SEC)	10/11/07 0856	DWShea DWSHEA	10/11/07 0856
DWShea DWShea	10/11/07 1744	Fridge 3A	10/11/07 1744
Fridge 3A	10-15-07 1031	RMSingleton	10-15-07 1031
RMSingleton	10-15-07 WCH 1500	FED EX	
Fed Ex	10-16-07 0940	Vicki Newman	10-16-07 0940

SPECIAL INSTRUCTIONS

(1) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}

Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 10/15/07.

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

000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TMC HANFORD
Project/SAF/SOW/Release #: RC-073

Date: 10/16/07

LvLI Batch #: 0710L 047

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7992 0465 3197
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 3.7 °C		Cooler # AFS-04-053
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

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NOV 2007

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-073 K1002

DATE RECEIVED: 10/16/07 LVL LOT # 071010047

CLIENT ID	LVL #	MTX	PREP #	LEACH DATE	EXTR/PREP	ANALYSIS
J15PV3	002	W	07LE0584	10/18/07	10/18/07	10/25/07
J15PV3	002 MS	W	07LE0584	10/18/07	10/18/07	10/25/07
J15PV3	002 MSD	W	07LE0584	10/18/07	10/18/07	10/25/07

LAB QC:

SBLKPJ	MB1	W	07LE0584	N/A	10/18/07	10/24/07
SBLKPJ	MB1 BS	W	07LE0584	N/A	10/18/07	10/24/07
07LTO130-LB1	LB1	W	07LE0584	N/A	10/18/07	10/24/07

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-073
LVL #: 0710L047
SDG/SAF # K1002/RC-073

W.O. #: 11343-606-001-9999-00
Date Received: 10-16-2007

SEMIVOLATILE - TCLP

One (1) leachate sample was generated on 10-18-2007 from a solid samples collected on 10-11-2007.

The sample and its associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3520C on 10-18-2007 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for client specified Semivolatile target compounds on 10-24,25-2007.

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. The sample was extracted and analyzed within required holding time.

2. Non-target compounds were detected but not reported in this package.

3. All surrogate recoveries were within acceptance criteria.

4. Two (2) of twenty-four (24) matrix spike recoveries were outside acceptance criteria.

5. All blank spike recoveries were within acceptance criteria.

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

7. 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").

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

r:\group\data\bna\tnu-hanford\0710-047kl1.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.

LIONVILLE LABORATORY INC.

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

Judy Stm

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

10/29/07
Date

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

ADDENDUM

This report provides Toxicity Characteristics Leaching Procedure (TCLP) information. Listed on the next page, the client identification on the ITCL labchron, "TCLP" represents the non-volatile leachate fraction and "TCLP LEACHATE" represents the Zero Headspace Extraction (ZHE) volatile leachate fraction. The "EXTR/PREP DATE" is the date the leachate preparation was initiated; the "ANALYSIS DATE" is the date the leachates were completed.

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-073 K1002

DATE RECEIVED: 10/16/07 LVL LOT # :0710L047

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15PV3						
TCLP	001	SO	07LTO130	10/11/07	10/17/07	10/18/07

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, TCLP Leachate

Report Date: 10/26/07 14:00

RFW Batch Number: 0710L047 Client: TNUHANFORD RC-073 K1002 Work Order: 11343606001 Page: 1a

	Cust ID:	J15PV3		J15PV3		J15PV3		SBLKPJ		SBLKPJ BS		LCHBLK	
Sample Information	RFW#:	002		002 MS		002 MSD		07LE0584-MB1		07LE0584-MB1		07LTO130-LB1	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Surrogate Recovery	Nitrobenzene-d5	98	%	65	%	54	%	64	%	72	%	76	%
	2-Fluorobiphenyl	88	%	87	%	66	%	58	%	73	%	62	%
	p-Terphenyl-d14	129	%	110	%	90	%	105	%	98	%	101	%
	Phenol-d5	88	%	87	%	66	%	62	%	79	%	78	%
	2-Fluorophenol	91	%	84	%	63	%	60	%	65	%	76	%
	2,4,6-Tribromophenol	86	%	101	%	80	%	64	%	66	%	69	%
			fl		fl		fl		fl		fl		fl
Pyridine		0.050	U	77	%	64	%	0.050	U	72	%	0.050	U
1,4-Dichlorobenzene		0.050	U	76	%	51	%	0.050	U	58	%	0.050	U
2-Methylphenol		0.050	U	88	%	68	%	0.050	U	70	%	0.050	U
3/4-Methylphenol		0.050	U	86	%	68	%	0.050	U	77	%	0.050	U
Hexachloroethane		0.050	U	76	%	50	%	0.050	U	54	%	0.050	U
Nitrobenzene		0.050	U	64	%	53	%	0.050	U	66	%	0.050	U
Hexachlorobutadiene		0.050	U	68	%	46	%	0.050	U	56	%	0.050	U
2,4,6-Trichlorophenol		0.050	U	93	%	77	%	0.050	U	55	%	0.050	U
2,4,5-Trichlorophenol		0.12	U	91	%	77	%	0.12	U	57	%	0.12	U
2,4-Dinitrotoluene		0.050	U	91	%	75	%	0.050	U	84	%	0.050	U
Hexachlorobenzene		0.050	U	91	%	74	%	0.050	U	81	%	0.050	U
Pentachlorophenol		0.12	U	145 *	%	122 *	%	0.12	U	49	%	0.12	U

*= Outside of EPA CLP QC limits.

000000009

nville Laboratory Use Only

7/0L047

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

nt TNU HANFORD SAF# RC-073

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

nville Laboratory Project Manager O. Johnson

SW846 Del STD TAT 15 days

e Rec'd 10-16-07 Date Due 10-31-07

Refrigerator #		A						B	C	D				
		3						3	3	3				
#/Type Container	Liquid / Solid	1G			LEACHATE		LEACHATE	1G	1G	1P				
Volume		60						60	60	60				
Preservatives														
ANALYSES REQUESTED		ORGANIC						INORG						
		VOA	TCLP BNA	Pest/PCB	Herb			TCLP Metal Hg	TOT. CN	SULFATE	Anions	PH		

Lionville Laboratory Use Only

RIX ES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected		TTCLP			0625T		RORATCW	TTCLP	TCNTO	TSSFO	TPH TCBR	TCCL TCFL	TCNO2 TCNO3	TCSO4 TCPO4	
Soil	001	J15PV3	/	/	OTHER SOLID	10/11/07	0856		X						X	X	X	X	X	X	X	
Sediment	002	815PV3 TCLP of 001			L	*						X		X								
Solid																						
Sludge																						
Water																						
Oil																						
Air																						
Drum Solids																						
Drum Liquids																						
EP/TCLP Leachate																						
Wipe																						
Other																						
Fish																						

cial Instructions:

Special Instructions:

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

*See Lab chron

Relinquished by	Received by	Date	Time
DEO	V Fernandez	10/16/07	0940

Relinquished by	Received by	Date	Time

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

000000010

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-073-022	Page 1 of 1

Collector: D.W.Shea/SEC subcontractor Caldwell, F.	Company Contact: D.W.Shea	Telephone No.: 521-6014	Project Coordinator: KESSNER, JH
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Other Solid	Sampling Location: 126-DR-1		SAF No.: RC-073
Ice Chest No.: AFS-04-053	Field Logbook No.: EL-1607-2	COA: R26DR12600	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: ~~See OSPC~~ A080044 10-15-07		Bill of Lading/Air Bill No.: See OSPC

Price Code: 9K

Data Turnaround: 15 days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C							
Type of Container	G	G/P	G	Gs*							
No. of Container(s)	1	1	1	1							
Volume	60mL	60mL	60mL	60mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	IC Anions - 300.0; pH - 9045	Total Cyanide - 9010 & Sulfide DWS 10/11/07	TCLP Semi-VOA - 1311/8270A							
Sample No. / Matrix * / Sample Date / Sample Time											
I15PV3 / OTHER SOLID / 10/11/07 / 0856	✓	✓	✓	✓							

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	F. Caldwell (SEC)	10/11/07 0856	D.W.Shea DWSHEA	10/11/07 0856
Relinquished By/Removed From	DWShea DWShea	10/11/07 1744	Fridge 3A	10/11/07 1744
Relinquished By/Removed From	Fridge 3A	10-15-07 1031	WWSingleton	10-15-07 1031
Relinquished By/Removed From	WWSingleton	10-15-07 1500	FED EX	
Relinquished By/Removed From	FED EX	10-16-07 0940	Neuenschwander	10-16-07 0940
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}

Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 10/15/07.

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

0000000011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-073

Date: 10/16/07

LvLI Batch #: 0710L 047

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7992 0465 3197
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 3.7	°C	Cooler # AFS-04-053
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
NOV 2007

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-073 K1002

DATE RECEIVED: 10/16/07 LVL LOT # :0710L042

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15PV3						
BROMIDE BY IC	001	SO	07LICS63	10/11/07	10/19/07	10/19/07
BROMIDE BY IC	001 REP	SO	07LICS63	10/11/07	10/19/07	10/19/07
BROMIDE BY IC	001 MS	SO	07LICS63	10/11/07	10/19/07	10/19/07
CHLORIDE BY IC	001	SO	07LICS63	10/11/07	10/19/07	10/19/07
CHLORIDE BY IC	001 REP	SO	07LICS63	10/11/07	10/19/07	10/19/07
CHLORIDE BY IC	001 MS	SO	07LICS63	10/11/07	10/19/07	10/19/07
FLUORIDE BY IC	001	SO	07LICS63	10/11/07	10/19/07	10/19/07
FLUORIDE BY IC	001 REP	SO	07LICS63	10/11/07	10/19/07	10/19/07
FLUORIDE BY IC	001 MS	SO	07LICS63	10/11/07	10/19/07	10/19/07
NITRITE BY IC	001	SO	07LICS63	10/11/07	10/19/07	10/19/07
NITRITE BY IC	001 REP	SO	07LICS63	10/11/07	10/19/07	10/19/07
NITRITE BY IC	001 MS	SO	07LICS63	10/11/07	10/19/07	10/19/07
NITRATE BY IC	001	SO	07LICS63	10/11/07	10/19/07	10/19/07
NITRATE BY IC	001 REP	SO	07LICS63	10/11/07	10/19/07	10/19/07
NITRATE BY IC	001 MS	SO	07LICS63	10/11/07	10/19/07	10/19/07
TOTAL CYANIDE	001	SO	07LC052	10/11/07	10/18/07	10/18/07
TOTAL CYANIDE	001 REP	SO	07LC052	10/11/07	10/18/07	10/18/07
TOTAL CYANIDE	001 MS	SO	07LC052	10/11/07	10/18/07	10/18/07
PHOSPHATE BY IC	001	SO	07LICS63	10/11/07	10/19/07	10/19/07
PHOSPHATE BY IC	001 REP	SO	07LICS63	10/11/07	10/19/07	10/19/07
PHOSPHATE BY IC	001 MS	SO	07LICS63	10/11/07	10/19/07	10/19/07
SULFATE BY IC	001	SO	07LICS63	10/11/07	10/19/07	10/19/07
SULFATE BY IC	001 REP	SO	07LICS63	10/11/07	10/19/07	10/19/07
SULFATE BY IC	001 MS	SO	07LICS63	10/11/07	10/19/07	10/19/07
PH	001	SO	07LPH065	10/11/07	10/17/07	10/17/07
PH	001 REP	SO	07LPH065	10/11/07	10/17/07	10/17/07
SULFIDE	001	SO	07LSD017	10/11/07	10/17/07	10/17/07
SULFIDE	001 REP	SO	07LSD017	10/11/07	10/17/07	10/17/07
SULFIDE	001 MS	SO	07LSD017	10/11/07	10/17/07	10/17/07
TCLP	001	SO	07LTO130	10/11/07	10/17/07	10/17/07

LAB QC:

BROMIDE BY IC	MB1	S	07LICS63	N/A	10/19/07	10/19/07
BROMIDE BY IC	MB1 BS	S	07LICS63	N/A	10/19/07	10/19/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-073 K1002

DATE RECEIVED: 10/16/07 LVL LOT # :0710L047

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHLORIDE BY IC	MB1	S	07LICS63	N/A	10/19/07	10/19/07
CHLORIDE BY IC	MB1 BS	S	07LICS63	N/A	10/19/07	10/19/07
FLUORIDE BY IC	MB1	S	07LICS63	N/A	10/19/07	10/19/07
FLUORIDE BY IC	MB1 BS	S	07LICS63	N/A	10/19/07	10/19/07
NITRITE BY IC	MB1	S	07LICS63	N/A	10/19/07	10/19/07
NITRITE BY IC	MB1 BS	S	07LICS63	N/A	10/19/07	10/19/07
NITRATE BY IC	MB1	S	07LICS63	N/A	10/19/07	10/19/07
NITRATE BY IC	MB1 BS	S	07LICS63	N/A	10/19/07	10/19/07
TOTAL CYANIDE	LCS L	S	07LC052	N/A	10/18/07	10/18/07
TOTAL CYANIDE	LCS L	S	07LC052	N/A	10/18/07	10/18/07
TOTAL CYANIDE	MB1	S	07LC052	N/A	10/18/07	10/18/07
PHOSPHATE BY IC	MB1	S	07LICS63	N/A	10/19/07	10/19/07
PHOSPHATE BY IC	MB1 BS	S	07LICS63	N/A	10/19/07	10/19/07
SULFATE BY IC	MB1	S	07LICS63	N/A	10/19/07	10/19/07
SULFATE BY IC	MB1 BS	S	07LICS63	N/A	10/19/07	10/19/07
SULFIDE	MB1	S	07LSD017	N/A	10/17/07	10/17/07
SULFIDE	MB1 BS	S	07LSD017	N/A	10/17/07	10/17/07
SULFIDE	MB1 BSD	S	07LSD017	N/A	10/17/07	10/17/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-073 K1002
LVL#: 0710L047

W.O.#: 11343-606-001-9999-00
Date Received: 10-16-07

INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 solid sample.

2. The sample was 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.

4. The results presented in this report are derived from a sample 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 Bromide, Chloride, Fluoride, Nitrite, Nitrate and Sulfate that were below the 90-110% control limit with recoveries ranging from 85.5% to 88.2%. The duplicate LCS for Sulfide was within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike (MS) recoveries for Bromide, Chloride, Fluoride, Nitrite, Nitrate, Total Cyanide, Phosphate and Sulfide were within the 75-125% control limits however MS recovery for Sulfate was above the control limit that may be attributed to sample inhomogeneity.

8. The replicate analyses were within the 20% Relative Percent Difference (RPD) control limit with the exception of Chloride that may be attributed to sample inhomogeneity .

9. Results for solid samples are reported on an "as received" 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

10/26/07
Date

njp\i10-047

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 14 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	__ D2216-80		
% Moisture	__ D2216-80		__ ILMO4.0 (e)
% Solids	__ D2216-80		__ ILMO4.0 (e)
% Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Chromium VI		__ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		__ 1110(mod) __ 9045C	
Cyanide, Total		✓ 9010B/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	__ EPA 418.1
pH, Soil		✓ 9045C	
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: Nitrite, Nitrate, Phosphate, Sulfate **Method**

L-WI-034/B-01/01

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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 10/24/07

CLIENT: TNUHANFORD RC-073 K1002 LVL LOT #: 0710L047

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J15PV3	Bromide by IC	2.8	u	MG/KG	2.8	1.0
		Chloride by IC	3.5		MG/KG	2.8	1.0
		Fluoride by IC	2.8	u	MG/KG	2.8	1.0
		Nitrite by IC	2.76	u	MG/KG	2.76	1.0
		Nitrate by IC	27.3		MG/KG	2.76	1.0
		Cyanide, Total	0.48	u	MG/KG	0.48	1.0
		Phosphate by IC	2.8	u	MG/KG	2.8	1.0
		Sulfate by IC	121		MG/KG	5.5	2.0
		pH	9.4		SOIL PH	0.01	1.0
		Sulfide	22.2	u	MG/KG	22.2	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/24/07

CLIENT: TNUHANFORD RC-073 K1002 LVL LOT #: 0710L047

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	07LICS63-MB1	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	2.52	u	MG/KG	2.52	1.0
		Nitrate by IC	2.52	u	MG/KG	2.52	1.0
		Phosphate by IC	2.5	u	MG/KG	2.5	1.0
		Sulfate by IC	2.5	u	MG/KG	2.5	1.0
BLANK1	07LC052-MB1	Cyanide, Total	0.47	u	MG/KG	0.47	1.0
BLANK10	07LSD017-MB1	Sulfide	21.0	u	MG/KG	21.0	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/24/07

CLIENT: TNUHANFORD RC-073 K1002 LVL LOT #: 0710L047

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J15PV3	Bromide by IC	112	0.0	114	98.1	2.0
		Chloride by IC	117	3.5	114	99.5	2.0
		Fluoride by IC	111	0.0	114	97.2	2.0
		Nitrite by IC	112	2.76u	114	98.1	2.0
		Nitrate by IC	162	27.3	114	117.9	2.0
		Cyanide, Total	5.29	0.48u	5.63	94.0	1.0
		Phosphate by IC	125	2.8 u	114	109.8	2.0
		Sulfate by IC	543	121	285	148.1	5.0
		Sulfide	241	1.7	303	79.0	1.0
BLANK10	07LICS63-MB1	Bromide by IC	39.3	2.5 u	45.0	87.4	1.0
		Chloride by IC	38.8	2.5 u	45.0	86.1	1.0
		Fluoride by IC	38.5	2.5 u	45.0	85.5	1.0
		Nitrite by IC	38.9	2.52u	45.0	86.5	1.0
		Nitrate by IC	39.1	2.52u	45.0	86.8	1.0
		Phosphate by IC	40.7	2.5 u	45.0	90.5	1.0
		Sulfate by IC	39.7	2.5 u	45.0	88.2	1.0
BLANK10	07LSD017-MB1	Sulfide	257	21.0 u	303	84.9	1.0
		Sulfide MSD	255	21.0 u	293	87.1	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 10/24/07

CLIENT: TNUHANFORD RC-073 K1002 LVL LOT #: 0710L047

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

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	07LSD017-MB1	Sulfide	84.9	87.1	2.6

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 10/24/07

CLIENT: TNUHANFORD RC-073 K1002 LVL LOT #: 0710L047

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J15PV3	Bromide by IC	2.8 u	2.9 u	NC	1.0
		Chloride by IC	3.5	5.3	41.0	1.0
		Fluoride by IC	2.8 u	2.9 u	NC	1.0
		Nitrite by IC	2.76u	2.91u	NC	1.0
		Nitrate by IC	27.3	32.4	17.3	1.0
		Cyanide, Total	0.48u	0.56u	NC	1.0
		Phosphate by IC	2.8 u	2.9 u	NC	1.0
		Sulfate by IC	121	146	19.1	2.0
		pH	9.4	9.4	0.1	1.0
		Sulfide	22.2 u	22.0 u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 10/24/07

CLIENT: TNUHANFORD RC-073 K1002 LVL LOT #: 0710L047

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCSS1	07LC052-LCS1	Cyanide, Total LCS	1.94	2.0	MG/KG	97.2
LCSS2	07LC052-LCS2	Cyanide, Total LCS	9.87	10.0	MG/KG	98.7

nville Laboratory Use Only

7710L047

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

nt TNU HANFORD SAF# RC-073

Final Proj. Sampling Date

ect# 11343-606-001-9998-00

ect Contact/Phone#

nville Laboratory Project Manager O Johnson

SW846 Del STP TAT 15 days

Rec'd 10-16-07 Date Due 10-31-07

		A						B	C		D			
Refrigerator #		3						3	3		3			
#/Type Container	Liquid / Solid	1G			LEACHATE		LEACHATE	1G	1G		1P			
Volume		60						60	60		60			
Preservatives														
ANALYSES REQUESTED		ORGANIC						INORG						
		VOA	TCLP BNA	Pest/PCB	Herb			TCLP Metal Hg	TOT CN	SULFATE	Anions PH			

MX ES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only												
									TCLP			0625T		RORATCW	TCLP	TCLNTO	TSSFO	TPH TCBR	TCCL TCFL	TCNO2 TCNO3	TCSO4 TCPO4
	001	T15PV3	/	/	OTHER SOLID	10/11/07	0856		X						X	X	X	X	X	X	X
	002	S15PV3 TCLP of 001			L	*						X		X							

cial Instructions:

Special Instructions:

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

*See Lab chron

Relinquished by	Received by	Date	Time
	V Hernandez	10/16/07	0940

Relinquished by	Received by	Date	Time

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

000000012

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-073-022	Page 1 of 1

ollector D.W.Shea/SEC subcontractor Caldwell, F.	Company Contact D.W.Shea	Telephone No. 521-6014	Project Coordinator KESSNER, JH	Price Code 9K	Data Turnaround 15 days
oject Designation 100-D/DR Burial Grounds & Remaining Sites - Other Solid	Sampling Location 126-DR-1		SAF No. RC-073		
e Chest No. AFS-04-053	Field Logbook No. EL-1607-2	COA R26DR12600	Method of Shipment Fed Ex		
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. ~~See OSPC~~ A080044 10-15-07		Bill of Lading/Air Bill No. See OSPC		

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C								
Type of Container	G	G/P	G	Gs*								
No. of Container(s)	1	1	1	1								
Volume	60mL	60mL	60mL	60mL								

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	IC Anions - 300.0; pH - 9045	Total Cyanide - 9010 & Sulfide DWS 10/11/07	TCLP Semi-VOA - 1311/8270A						
5PV3	OTHER SOLID	10/11/07	0856	✓	✓	✓	✓						

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
F. Caldwell (SEC)	10/11/07 0956	DWShea DWSHEA	10/11/07 0856
DWShea DWShea	10/11/07 1744	Fridge 3A	10/11/07 1744
Fridge 3A	10-15-07 1031	Singleton	10-15-07 1031
Singleton	10-15-07 1500	FED EX	
FED EX	10-16-07 0940	Vicki Kennedy	10-16-07 0940
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}

Sampler unavailable to relinquish samples from 3728 Ref # 3A. 3728 Custodian removed samples for shipping on 10/15/07.

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

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

CH-EE-011

000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-073

Date: 10/16/97

LvLI Batch #: 0710L 047

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7992 0465 3197
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 3.7	°C	Cooler # AFS-04-053
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