0076077

SAF-RC-033
100-F Remaining Sites Burial Grounds - Other Solid Quick Turn
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Randy Coffman	X9-07	KW 1/8/08 INITIAL/DATE
Kathy Wendt	H4-21	KW 1/8/08 INITIAL/DATE

RECEIVED
JAN 1 0 2008
EDMC

COMMENTS:

SDG: K1057 **SAF-RC-033**

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: **120-F-1 Glass Dump Anomalous Open Bottle**

LIONVILLE LABORATORY INC.

4 January 2008

RECEIVED JAN 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 #	0712L322
SDG #	K1057
SAF #	RC-033
Date Received	12/13/07
# Samples	1
Matrix	OTHER SOLID
Volatiles	
Semivolatiles	
Pest/PCB	
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

r:\group\pm\orlette\tnu-hanford\data\b_ltrs.doc

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

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1057

RECEIVED JAN 2008

DATE RECEIVED: 12/13/07 LVL LOT # :0712L3

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J163T2						
SILVER, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
SILVER, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
SILVER, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
ALUMINUM, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
ALUMINUM, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
ALUMINUM, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
ARSENIC, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
ARSENIC, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
ARSENIC, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
BORON, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
BORON, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
BORON, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
BARIUM, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
BARIUM, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
BARIUM, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
BERYLLIUM, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
BERYLLIUM, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
BERYLLIUM, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
CALCIUM, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
CALCIUM, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
CALCIUM, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
CADMIUM, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
CADMIUM, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
CADMIUM, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
COBALT, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
COBALT, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
COBALT, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
CHROMIUM, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
CHROMIUM, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
CHROMIUM, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
COPPER, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
COPPER, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
COPPER, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
IRON, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
IRON, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1057

DATE RECEIVED: 12/13/07 LVL LOT # :0712L322

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
MERCURY, TOTAL	001	SO	07C0226	12/11/07	12/19/07	12/20/07
MERCURY, TOTAL	001 REP	SO	07C0226	12/11/07	12/19/07	12/20/07
MERCURY, TOTAL	001 MS	SO	07C0226	12/11/07	12/19/07	12/20/07
POTASSIUM, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
POTASSIUM, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
POTASSIUM, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
MAGNESIUM, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
MAGNESIUM, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
MAGNESIUM, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
MANGANESE, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
MANGANESE, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
MANGANESE, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
MOLYBDENUM, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
MOLYBDENUM, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
MOLYBDENUM, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
SODIUM, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
SODIUM, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
SODIUM, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
NICKEL, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
NICKEL, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
NICKEL, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
LEAD, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
LEAD, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
LEAD, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
ANTIMONY, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
ANTIMONY, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
ANTIMONY, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
SELENIUM, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
SELENIUM, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
SELENIUM, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
SILICON, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
SILICON, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
SILICON, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
VANADIUM, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07
VANADIUM, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
VANADIUM, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07
ZINC, TOTAL	001	SO	07L0626	12/11/07	12/14/07	12/27/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1057

DATE RECEIVED: 12/13/07 LVL LOT # :0712L322

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, TOTAL	001 REP	SO	07L0626	12/11/07	12/14/07	12/27/07
ZINC, TOTAL	001 MS	SO	07L0626	12/11/07	12/14/07	12/27/07

LAB QC:

SILVER LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
SILVER, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
ALUMINUM LABORTORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
ALUMINUM, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
ARSENIC LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
ARSENIC, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
BORON LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
BORON, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
BARIUM LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
BARIUM, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
BERYLLIUM LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
BERYLLIUM, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
CALCIUM LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
CALCIUM, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
CADMIUM LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
CADMIUM, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
COBALT LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
COBALT, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
CHROMIUM LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
CHROMIUM, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
COPPER LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
COPPER, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
IRON LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
IRON, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
MERCURY LABORATORY	LC1 BS	S	07C0226	N/A	12/19/07	12/20/07
MERCURY, TOTAL	MB1	S	07C0226	N/A	12/19/07	12/20/07
POTASSIUM LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
POTASSIUM, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
MAGNESIUM LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
MAGNESIUM, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
MANGANESE LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
MANGANESE, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
MOLYBDENUM LABORATOR	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-033 K1057

DATE RECEIVED: 12/13/07 LVL LOT # :0712L322

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MOLYBDENUM, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
SODIUM LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
SODIUM, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
NICKEL LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
NICKEL, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
LEAD LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
LEAD, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
ANTIMONY LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
ANTIMONY, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
SELENIUM LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
SELENIUM, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
SILICON LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
SILICON, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
VANADIUM LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
VANADIUM, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07
ZINC LABORATORY	LC1 BS	S	07L0626	N/A	12/14/07	12/27/07
ZINC, TOTAL	MB1	S	07L0626	N/A	12/14/07	12/27/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-033
LVL#: 0712L322
SDG/SAF#: K1057/RC-033

W.O.#: 11343-606-001-9999-00
Date Received: 12-13-07

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 1 solid sample.

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

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. The preparation/method blanks for 3 analytes were outside method criteria. {less than the Practical Quantitation Limit (3X the IDL), or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

   a). The MB results for Calcium, Sodium, and Zinc were greater than the Practical Quantitation Limit (PQL) {3 x the (IDL) Instrument Detection Level} and all samples read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.

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

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 18 pages.

Inorganics Laboratory Control Standards Report.

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

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J16364	Silver	100	105.5
	Aluminum	5,000	106.4
	Cadmium	50	100.1
	Iron	12,000	105.2
	Silicon	2,000	112.6

11. The duplicate analyses for 4 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 Instrument Detection Limit (IDL) as LOD studies are still in progress for this instrument. Values between the IDL and the Practical Quantitation Limit (PQL) 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

jjw/m12-322

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within th
Lot#: 07/2L322

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	X6010B		__200.7				__99
Antimony	X6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X6010B		__200.7				__99
Beryllium	X6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	X6010B		__200.7				__99
Cadmium	X6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	X6010B		__200.7				__99
Chromium	X6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	X6010B		__200.7				__99
Copper	X6010B	__7211 [5]	__200.7	__220.2			__99
Iron	X6010B		__200.7				__99
Lead	X6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	X6010B		__200.7				__99
Manganese	X6010B		__200.7				__99
Mercury	__7470A [3]	X7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	X6010B		__200.7				__99
Nickel	X6010B		__200.7				__99
Potassium	X6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	X6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	X6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	X6010B		__200.7				__99
Zinc	X6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

L-W1-033/M-03/01
000000007

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 01/02/08

CLIENT: TNUHANFORD RC-033 K1057 LVL LOT #: 0712L322

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J163T2	Silver, Total	0.40 u	MG/KG	0.40	1.0
		Aluminum, Total	114	MG/KG	1.6	1.0
		Arsenic, Total	2.8 u	MG/KG	2.8	1.0
		Boron, Total	0.36	MG/KG	0.26	1.0
		Barium, Total	1.8	MG/KG	0.28	1.0
		Beryllium, Total	0.04	MG/KG	0.02	1.0
		Calcium, Total	88.6	MG/KG	1.8	1.0
		Cadmium, Total	0.50 u	MG/KG	0.50	1.0
		Cobalt, Total	0.36 u	MG/KG	0.36	1.0
		Chromium, Total	0.41 u	MG/KG	0.41	1.0
		Copper, Total	0.57	MG/KG	0.21	1.0
		Iron, Total	261	MG/KG	0.30	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Potassium, Total	56.6	MG/KG	44.0	1.0
		Magnesium, Total	47.7	MG/KG	3.3	1.0
		Manganese, Total	4.6	MG/KG	0.08	1.0
		Molybdenum, Total	0.58 u	MG/KG	0.58	1.0
		Sodium, Total	33.6	MG/KG	1.5	1.0
		Nickel, Total	1.1 u	MG/KG	1.1	1.0
		Lead, Total	3.1 u	MG/KG	3.1	1.0
		Antimony, Total	1.6 u	MG/KG	1.6	1.0
		Selenium, Total	3.7 u	MG/KG	3.7	1.0
		Silicon, Total	207	MG/KG	6.0	1.0
		Vanadium, Total	0.30 u	MG/KG	0.30	1.0
		Zinc, Total	3.1	MG/KG	0.15	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/02/08

CLIENT: TNUHANFORD RC-033 K1057

LVL LOT #: 0712L322

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	07L0626-MB1	Silver, Total	0.45	u	MG/KG	0.45	1.0
		Aluminum, Total	1.8	u	MG/KG	1.8	1.0
		Arsenic, Total	3.2	u	MG/KG	3.2	1.0
		Boron, Total	0.33		MG/KG	0.29	1.0
		Barium, Total	0.31	u	MG/KG	0.31	1.0
		Beryllium, Total	0.02	u	MG/KG	0.02	1.0
		Calcium, Total	7.5		MG/KG	2.0	1.0
		Cadmium, Total	0.56	u	MG/KG	0.56	1.0
		Cobalt, Total	0.40	u	MG/KG	0.40	1.0
		Chromium, Total	0.46	u	MG/KG	0.46	1.0
		Copper, Total	0.23	u	MG/KG	0.23	1.0
		Iron, Total	1.6		MG/KG	0.34	1.0
		Potassium, Total	49.3	u	MG/KG	49.3	1.0
		Magnesium, Total	3.7	u	MG/KG	3.7	1.0
		Manganese, Total	0.09	u	MG/KG	0.09	1.0
		Molybdenum, Total	1.0		MG/KG	0.65	1.0
		Sodium, Total	13.5		MG/KG	1.6	1.0
		Nickel, Total	1.2	u	MG/KG	1.2	1.0
		Lead, Total	3.5	u	MG/KG	3.5	1.0
		Antimony, Total	1.8	u	MG/KG	1.8	1.0
		Selenium, Total	4.1	u	MG/KG	4.1	1.0
		Silicon, Total	6.7	u	MG/KG	6.7	1.0
		Vanadium, Total	0.34	u	MG/KG	0.34	1.0
		Zinc, Total	2.2		MG/KG	0.17	1.0
BLANK1	07C0226-MB1	Mercury, Total	0.02	u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 01/02/08

CLIENT: TNUHANFORD RC-033 K1057 LVL LOT #: 0712L322

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J163T2	Silver, Total	3.2	0.40u	4.5	71.1	1.0
		Aluminum, Total	227	114	179	63.4	1.0
		Arsenic, Total	158	2.8 u	179	88.4	1.0
		Boron, Total	76.8	0.36	89.3	85.6	1.0
		Barium, Total	162	1.8	179	89.5	1.0
		Beryllium, Total	4.1	0.04	4.5	90.2	1.0
		Calcium, Total	2000	88.6	2230	85.6	1.0
		Cadmium, Total	3.1	0.50u	4.5	68.9	1.0
		Cobalt, Total	39.6	0.36u	44.6	88.8	1.0
		Chromium, Total	15.9	0.41u	17.9	88.8	1.0
		Copper, Total	20.0	0.57	22.3	87.1	1.0
		Iron, Total	229	261	89.3	-36.	1.0
		Mercury, Total	0.19	0.02	0.16	107.1	1.0
		Potassium, Total	1880	56.6	2230	81.7	1.0
		Magnesium, Total	1890	47.7	2230	82.4	1.0
		Manganese, Total	42.3	4.6	44.6	84.5	1.0
		Molybdenum, Total	73.1	0.58u	89.3	81.9	1.0
		Sodium, Total	1910	33.6	2230	84.2	1.0
		Nickel, Total	38.5	1.1 u	44.6	86.3	1.0
		Lead, Total	39.1	3.1 u	44.6	87.7	1.0
		Antimony, Total	39.0	1.6 u	44.6	87.4	1.0
		Selenium, Total	161	3.7 u	179	90.3	1.0
		Silicon, Total	227	207	89.3	22.8	1.0
		Vanadium, Total	39.0	0.30u	44.6	87.4	1.0
		Zinc, Total	41.4	3.1	44.6	85.9	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 01/02/08

CLIENT: TNUHANFORD RC-033 K1057 LVL LOT #: 0712L322

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J163T2	Silver, Total	0.40u	0.40u	NC	1.0
		Aluminum, Total	114	94.7	18.5	1.0
		Arsenic, Total	2.8 u	2.8 u	NC	1.0
		Boron, Total	0.36	0.26u	* ~~NC~~ 200	1.0
		Barium, Total	1.8	2.2	20.0	1.0
		Beryllium, Total	0.04	0.04	6.7	1.0
		Calcium, Total	88.6	70.4	22.9	1.0
		Cadmium, Total	0.50u	0.50u	NC	1.0
		Cobalt, Total	0.36u	0.36u	NC	1.0
		Chromium, Total	0.41u	0.41u	NC	1.0
		Copper, Total	0.57	0.48	18.4	1.0
		Iron, Total	261	207	22.9	1.0
		Mercury, Total	0.02	0.03	11.8	1.0
		Potassium, Total	56.6	56.9	0.53	1.0
		Magnesium, Total	47.7	40.5	16.3	1.0
		Manganese, Total	4.6	3.8	19.0	1.0
		Molybdenum, Total	0.58u	0.91	* ~~NC~~ 200	1.0
		Sodium, Total	33.6	31.8	5.5	1.0
		Nickel, Total	1.1 u	1.1 u	NC	1.0
		Lead, Total	3.1 u	3.1 u	NC	1.0
		Antimony, Total	1.6 u	1.6 u	NC	1.0
		Selenium, Total	3.7 u	3.7 u	NC	1.0
		Silicon, Total	207	188	9.4	1.0
		Vanadium, Total	0.30u	0.30u	NC	1.0
		Zinc, Total	3.1	3.3	6.2	1.0

* corrected entries
MO 1/2/08

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 01/02/08

CLIENT: TNUHANFORD RC-033 K1057 LVL LOT #: 0712L322

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	07L0626-LC1	Silver, LCS	42.5	50.0	MG/KG	85.0
		Aluminum, LCS	446	500	MG/KG	89.2
		Arsenic, LCS	899	1000	MG/KG	89.9
		Boron, LCS	442	500	MG/KG	88.3
		Barium, LCS	461	500	MG/KG	92.2
		Beryllium, LCS	23.2	25.0	MG/KG	92.8
		Calcium, LCS	2250	2500	MG/KG	89.9
		Cadmium, LCS	20.0	25.0	MG/KG	80.0
		Cobalt, LCS	228	250	MG/KG	91.3
		Chromium, LCS	45.1	50.0	MG/KG	90.2
		Copper, LCS	112	125	MG/KG	89.5
		Iron, LCS	459	500	MG/KG	91.7
		Potassium, LCS	2250	2500	MG/KG	90.1
		Magnesium, LCS	2190	2500	MG/KG	87.5
		Manganese, LCS	68.1	75.0	MG/KG	90.8
		Molybdenum, LCS	429	500	MG/KG	85.8
		Sodium, LCS	2240	2500	MG/KG	89.7
		Nickel, LCS	180	200	MG/KG	89.8
		Lead, LCS	218	250	MG/KG	87.3
		Antimony, LCS	262	300	MG/KG	87.2
		Selenium, LCS	903	1000	MG/KG	90.3
		Silicon, LCS	439	500	MG/KG	87.8
		Vanadium, LCS	225	250	MG/KG	89.9
		Zinc, LCS	88.2	100	MG/KG	88.2
LCS1	07C0226-LC1	Mercury, LCS	4.6	4.7	MG/KG	98.2

inville Laboratory
orporated

MERCURY PREPARATION

Logbook # 0326

alyst: TB / KMC
e: 12/19/07
d Time/Temp: 12:09pm / 91°
d Time/Temp: 12:39pm / 95°

Instrument ID: HG3.1
Balance #: B01 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 07C0226
Worksheet: HG122001
OP No. ME-HgCVAA, Rev.. 02

pH < 2 for Liquids? __ Yes LH 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	3H			10mL	50mL	
0.2 µg/L	A4	0.100				
1.0	GT	0.500				
2.0	N60	1.000				
5.0	SM	2.500				
10.0	C9	5.000				
ICV	9Q	0.125	2.5			
CCV	154	0.250	5.0			
ICB/CCB	LV					Reset 12/20/07 90.50L
MBI	SE			0.30		PBW126 100.00
LCI	OF			0.30		LCSS126
712L334-001	STP			0.36		100.00
-001R	A1			0.30		
-001S	L15	0.050		0.36		
-002	BB			0.34		
712L323-001	P18			0.31		93.05
-001R	508			0.35		
-001S	1C	0.500	1.0	0.31		
-002	KX			0.33		92.15
-003	B14			0.36		93.19
-004	X0			0.31		92.37
-005	2T			0.36		100.00
712L322-001	L2			0.32		
-001R	ET			0.35		
-001S	114	0.500	1.0	0.32		
		TBA 12/18/07				

Standard:	ID	Prep Date/Time
CMS	RI 6072-75-07B	12/19/07 0920
CCV/LCS	US 6072-75-08A	

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

see book # 9368 for std traceability information

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

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

HgCVAA-Prep1007

Page #:

Lionville Laboratory Incorporated Logbook #: DX 1

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 07LOC06
Date/Time Initiated: 12/14/07 9:45AM
Date/Time Completed: 12/14/07 12:00PM
Analyst(s): MW / BMC
Matrix: Soil Water Other: Solid Soil
Instr. Type: AA ICP
Parameters: SE Backlog

Digested / Undigested (circle one)
Balance #: 520
Balance Cal Verif: Y NA
Hot Plate Temp: 91°

Method: SW (circle)
3005A
3010A
3015
3020A
7060A (As/Se)
7760A (Ag)
3050B
~~3051~~

DW 200.7 (1994)
200.9
3113B

MCAWW 200.7 (1982)
200 (AA)
206.2 (As/Se)

SM 3030C (NC)

CLP ILMO3.0
ILMO4.0

Other Teflon

TNU

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
07DL322-001		1.129	100mL	N/A	TO	Not Fine	Water Solid	N/A	N/A
-001R		1.126							
-005	1.0mL	1.129							
07DL323-001		1.030					Soil/Sand	Rocks	
-001R		1.030							
-005	1.0mL	1.030							
-002		1.069							
-003		1.079							
-004		1.089							
-005		1.030					Stones	N/A	
07LOC06-MB1		1.069				N/A	Boiling chips		
-LC1	1.0mL	1g							

BMC 12/14/07

Spiking ID: 8100-04-01
MS #: -02
-03
0072-077 -04
LCS #: -02
-03
-04
-05

Reagent IDs:
HNO_3 E26035
HCL E33033
H_2O_2 E24A03
1:1 HNO_3 9784-070-06
1:1 HCL

File ID#: IC062601
LIMS Transfer: Y N
Data Review By/Date: 12/17/07

Lionville Laboratory Use Only

0712L322

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford RC-033

Est. Final Proj. Sampling Date:

Project#: 11343-606-001-9999

Project Contact/Phone#:

Lionville Laboratory Project Manager: Dr Lotter Johnson

QC: SW Del: SW TAT: 15 Days

Date Rec'd: 12.13.07 Date Due: 12/28/07

Refrigerator #									A 3							
#/Type Container	Liquid / Solid								1pl							
Volume	Solid								1L							
Preservatives									-							
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal + Hg	CN						
		Lionville Laboratory Use Only														
									MEED							

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected														
001	J1163T2	✓	✓	SO	12.11.07	0820								X						

Special Instructions:

MEED = RCRA + Al, B, Be, Ca, Co, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, SB, Si, V, Zn

Special Instructions:

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

Relinquished by	Received by	Date	Time
FedEx	[illegible]	12.13.07	0930

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-033-037	Page 1 of 1

Collector T. Welch-Koelling	Company Contact R T Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Price Code 9G	Data Turnaround 15 DAY		
Project Designation 100-F Remaining Sites Burial Grounds - Other Solid Quick T	Sampling Location 120-F-1 Glass Dump Anomalous open bottle		SAF No. RC-033
Ice Chest No. ERC-02-007	Field Logbook No. EFL-1174-4	COA R120F12000	Method of Shipment Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080106		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None											
Type of Container	P											
No. of Container(s)	1											
Volume	1000mL											
SAMPLE ANALYSIS	See item (1) in Special Instructions.											

Sample No.	Matrix *	Sample Date	Sample Time										
J163T2	OTHER SOLID	12-11-07	0820	X									

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	12/11/07 0845	JRDeBuigne JRDeBuigne	0845 12-11-07
JRDeBuigne JRDeBuigne	12-11-07 1400	3728/2C	1400 12-11-07
3728/2C	12-12-07 0830	[illegible]	12-12-07 0830
[illegible]	12-12-07 1500	FEDEX	
[illegible]	12-13-07/0930	[illegible]	12-13-07/0930

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 - 7470 - (CV)

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

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford

Project/SAF/SOW/Release #: RC.033

Date: 12-13-07

LvLI Batch #: 07121322

Sample Custodian: D. Finch

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier: Fed Ex		Airbill # 79832907 5471
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 2.0	°C	Cooler # ERC-02-007
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 _____

000000018