0059201

SAF-B02-065
618-5 Burial Ground – Anomalous Waste (Solids)
FINAL DATA PACKAGE

FAX RESULTS TO:

Jeff Lerch 373-5373 N/A
INITIAL/DATE

VERIFICATION OF CLIENT RECEIPT:

Phone or CC:Mail to Jeff Lerch N/A
INITIAL/DATE

MAIL COMPLETE COPY OF DATA PACKAGE TO:

Jeff Lerch L6-06 N/A
INITIAL/DATE

Doug Bowers H9-09 N/A
INITIAL/DATE

COMMENTS: (PLEASE INCLUDE THE FOLLOWING ON THE FAX COVER SHEET)

SDG H2060 SAF-B02-065

Rad only X Chem only Rad & Chem

X Complete Partial

RECEIVED
APR 28 2003
EDMC

LIONVILLE LABORATORY INC.

14 February 2003

Joan Kessner
Bechtel-Hanford, Inc.
3190 Washington Way
MSIN H9-03
Richland, WA 99352

Subject: Contract No. 630
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 #	0301L592
SDG #	H2060
SAF #	B02-065
Date Received	1-28-03
# Samples	7
Matrix	Other Solid
Volatiles	
Semivolatiles	
Pest/PCB	
DRO	
GRO	
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

FEB 2003

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

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

FEB 2003

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B02-065 H2060

DATE RECEIVED: 01/28/03 LVL LOT # :0301L592

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00CL3						
TCLP	001	SO	03LTO012	01/23/03	01/29/03	01/30/03
J00CL4						
TCLP	002	SO	03LTO012	01/23/03	01/29/03	01/30/03
J00CL5						
TCLP	003	SO	03LTO012	01/23/03	01/29/03	01/30/03
J00CL7						
TCLP	004	SO	03LTO012	01/23/03	01/29/03	01/30/03
J00CL9						
TCLP	005	SO	03LTO012	01/23/03	01/29/03	01/30/03
J00CM0						
TCLP	006	SO	03LTO012	01/23/03	01/29/03	01/30/03
J00CM1						
TCLP	007	SO	03LTO012	01/23/03	01/29/03	01/30/03
J00CL3						
SILVER, TCLP LEACHAT	008	W	03L0052	01/30/03	01/30/03	01/30/03
SILVER, TCLP LEACHAT	008 REP	W	03L0052	01/30/03	01/30/03	01/30/03
ARSENIC, TCLP LEACHA	008	W	03L0052	01/30/03	01/30/03	01/30/03
ARSENIC, TCLP LEACHA	008 REP	W	03L0052	01/30/03	01/30/03	01/30/03
BARIUM, TCLP LEACHAT	008	W	03L0052	01/30/03	01/30/03	01/30/03
BARIUM, TCLP LEACHAT	008 REP	W	03L0052	01/30/03	01/30/03	01/30/03
CADMIUM, TCLP LEACHA	008	W	03L0052	01/30/03	01/30/03	01/30/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B02-065 H2060

DATE RECEIVED: 01/28/03 LVL LOT # :0301L592

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CADMIUM, TCLP LEACHA	008 REP	W	03L0052	01/30/03	01/30/03	01/30/03
CHROMIUM, TCLP LEACH	008	W	03L0052	01/30/03	01/30/03	01/30/03
CHROMIUM, TCLP LEACH	008 REP	W	03L0052	01/30/03	01/30/03	01/30/03
MERCURY, TCLP LEACHA	008	W	03C0019	01/30/03	02/03/03	02/04/03
MERCURY, TCLP LEACHA	008 REP	W	03C0019	01/30/03	02/03/03	02/04/03
LEAD, TCLP LEACHATE	008	W	03L0052	01/30/03	01/30/03	01/30/03
LEAD, TCLP LEACHATE	008 REP	W	03L0052	01/30/03	01/30/03	01/30/03
SELENIUM, TCLP LEACH	008	W	03L0052	01/30/03	01/30/03	01/30/03
SELENIUM, TCLP LEACH	008 REP	W	03L0052	01/30/03	01/30/03	01/30/03
J00CL4						
SILVER, TCLP LEACHAT	009	W	03L0052	01/30/03	01/30/03	01/30/03
SILVER, TCLP LEACHAT	009 MS	W	03L0052	01/30/03	01/30/03	01/30/03
ARSENIC, TCLP LEACHA	009	W	03L0052	01/30/03	01/30/03	01/30/03
ARSENIC, TCLP LEACHA	009 MS	W	03L0052	01/30/03	01/30/03	01/30/03
BARIUM, TCLP LEACHAT	009	W	03L0052	01/30/03	01/30/03	01/30/03
BARIUM, TCLP LEACHAT	009 MS	W	03L0052	01/30/03	01/30/03	01/30/03
CADMIUM, TCLP LEACHA	009	W	03L0052	01/30/03	01/30/03	01/30/03
CADMIUM, TCLP LEACHA	009 MS	W	03L0052	01/30/03	01/30/03	01/30/03
CHROMIUM, TCLP LEACH	009	W	03L0052	01/30/03	01/30/03	01/30/03
CHROMIUM, TCLP LEACH	009 MS	W	03L0052	01/30/03	01/30/03	01/30/03
MERCURY, TCLP LEACHA	009	W	03C0019	01/30/03	02/03/03	02/04/03
MERCURY, TCLP LEACHA	009 MS	W	03C0019	01/30/03	02/03/03	02/04/03
LEAD, TCLP LEACHATE	009	W	03L0052	01/30/03	01/30/03	01/30/03
LEAD, TCLP LEACHATE	009 MS	W	03L0052	01/30/03	01/30/03	01/30/03
SELENIUM, TCLP LEACH	009	W	03L0052	01/30/03	01/30/03	01/30/03
SELENIUM, TCLP LEACH	009 MS	W	03L0052	01/30/03	01/30/03	01/30/03
J00CL5						
SILVER, TCLP LEACHAT	010	W	03L0052	01/30/03	01/30/03	01/30/03
ARSENIC, TCLP LEACHA	010	W	03L0052	01/30/03	01/30/03	01/30/03
BARIUM, TCLP LEACHAT	010	W	03L0052	01/30/03	01/30/03	01/30/03
CADMIUM, TCLP LEACHA	010	W	03L0052	01/30/03	01/30/03	01/30/03
CHROMIUM, TCLP LEACH	010	W	03L0052	01/30/03	01/30/03	01/30/03
MERCURY, TCLP LEACHA	010	W	03C0019	01/30/03	02/03/03	02/04/03
LEAD, TCLP LEACHATE	010	W	03L0052	01/30/03	01/30/03	01/30/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B02-065 H2060

DATE RECEIVED: 01/28/03 LVL LOT # :0301L592

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TCLP LEACH	010	W	03L0052	01/30/03	01/30/03	01/30/03
J00CL7						
SILVER, TCLP LEACHAT	011	W	03L0052	01/30/03	01/30/03	01/30/03
ARSENIC, TCLP LEACHA	011	W	03L0052	01/30/03	01/30/03	01/30/03
BARIUM, TCLP LEACHAT	011	W	03L0052	01/30/03	01/30/03	01/30/03
CADMIUM, TCLP LEACHA	011	W	03L0052	01/30/03	01/30/03	01/30/03
CHROMIUM, TCLP LEACH	011	W	03L0052	01/30/03	01/30/03	01/30/03
MERCURY, TCLP LEACHA	011	W	03C0019	01/30/03	02/03/03	02/04/03
LEAD, TCLP LEACHATE	011	W	03L0052	01/30/03	01/30/03	01/30/03
SELENIUM, TCLP LEACH	011	W	03L0052	01/30/03	01/30/03	01/30/03
J00CL9						
SILVER, TCLP LEACHAT	012	W	03L0052	01/30/03	01/30/03	01/30/03
ARSENIC, TCLP LEACHA	012	W	03L0052	01/30/03	01/30/03	01/30/03
BARIUM, TCLP LEACHAT	012	W	03L0052	01/30/03	01/30/03	01/30/03
CADMIUM, TCLP LEACHA	012	W	03L0052	01/30/03	01/30/03	01/30/03
CHROMIUM, TCLP LEACH	012	W	03L0052	01/30/03	01/30/03	01/30/03
MERCURY, TCLP LEACHA	012	W	03C0019	01/30/03	02/03/03	02/04/03
LEAD, TCLP LEACHATE	012	W	03L0052	01/30/03	01/30/03	01/30/03
SELENIUM, TCLP LEACH	012	W	03L0052	01/30/03	01/30/03	01/30/03
J00CM0						
SILVER, TCLP LEACHAT	013	W	03L0052	01/30/03	01/30/03	01/30/03
ARSENIC, TCLP LEACHA	013	W	03L0052	01/30/03	01/30/03	01/30/03
BARIUM, TCLP LEACHAT	013	W	03L0052	01/30/03	01/30/03	01/30/03
CADMIUM, TCLP LEACHA	013	W	03L0052	01/30/03	01/30/03	01/30/03
CHROMIUM, TCLP LEACH	013	W	03L0052	01/30/03	01/30/03	01/30/03
MERCURY, TCLP LEACHA	013	W	03C0019	01/30/03	02/03/03	02/04/03
LEAD, TCLP LEACHATE	013	W	03L0052	01/30/03	01/30/03	01/30/03
SELENIUM, TCLP LEACH	013	W	03L0052	01/30/03	01/30/03	01/30/03
J00CM1						
SILVER, TCLP LEACHAT	014	W	03L0052	01/30/03	01/30/03	01/30/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B02-065 H2060

DATE RECEIVED: 01/28/03 LVL LOT # :0301L592

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ARSENIC, TCLP LEACHA	014	W	03L0052	01/30/03	01/30/03	01/30/03
BARIUM, TCLP LEACHAT	014	W	03L0052	01/30/03	01/30/03	01/30/03
CADMIUM, TCLP LEACHA	014	W	03L0052	01/30/03	01/30/03	01/30/03
CHROMIUM, TCLP LEACH	014	W	03L0052	01/30/03	01/30/03	01/30/03
MERCURY, TCLP LEACHA	014	W	03C0019	01/30/03	02/03/03	02/04/03
LEAD, TCLP LEACHATE	014	W	03L0052	01/30/03	01/30/03	01/30/03
SELENIUM, TCLP LEACH	014	W	03L0052	01/30/03	01/30/03	01/30/03

LAB QC:

SILVER LABORATORY	LC1 BS	W	03L0052	N/A	01/30/03	01/30/03
SILVER, TCLP LEACHAT	MB1	W	03L0052	N/A	01/30/03	01/30/03
SILVER, TCLP LEACHAT	MB2	W	03L0052	N/A	01/30/03	01/30/03
ARSENIC LABORATORY	LC1 BS	W	03L0052	N/A	01/30/03	01/30/03
ARSENIC, TCLP LEACHA	MB1	W	03L0052	N/A	01/30/03	01/30/03
ARSENIC, TCLP LEACHA	MB2	W	03L0052	N/A	01/30/03	01/30/03
BARIUM LABORATORY	LC1 BS	W	03L0052	N/A	01/30/03	01/30/03
BARIUM, TCLP LEACHAT	MB1	W	03L0052	N/A	01/30/03	01/30/03
BARIUM, TCLP LEACHAT	MB2	W	03L0052	N/A	01/30/03	01/30/03
CADMIUM LABORATORY	LC1 BS	W	03L0052	N/A	01/30/03	01/30/03
CADMIUM, TCLP LEACHA	MB1	W	03L0052	N/A	01/30/03	01/30/03
CADMIUM, TCLP LEACHA	MB2	W	03L0052	N/A	01/30/03	01/30/03
CHROMIUM LABORATORY	LC1 BS	W	03L0052	N/A	01/30/03	01/30/03
CHROMIUM, TCLP LEACH	MB1	W	03L0052	N/A	01/30/03	01/30/03
CHROMIUM, TCLP LEACH	MB2	W	03L0052	N/A	01/30/03	01/30/03
MERCURY LABORATORY	LC1 BS	W	03C0019	N/A	02/03/03	02/04/03
MERCURY, TOTAL	MB1	W	03C0019	N/A	02/03/03	02/04/03
MERCURY, TCLP LEACHA	MB2	W	03C0019	N/A	02/03/03	02/04/03
MERCURY, TCLP LEACHA	MB3	W	03C0019	N/A	02/03/03	02/04/03
LEAD LABORATORY	LC1 BS	W	03L0052	N/A	01/30/03	01/30/03
LEAD, TCLP LEACHATE	MB1	W	03L0052	N/A	01/30/03	01/30/03
LEAD, TCLP LEACHATE	MB2	W	03L0052	N/A	01/30/03	01/30/03
SELENIUM LABORATORY	LC1 BS	W	03L0052	N/A	01/30/03	01/30/03
SELENIUM, TCLP LEACH	MB1	W	03L0052	N/A	01/30/03	01/30/03
SELENIUM, TCLP LEACH	MB2	W	03L0052	N/A	01/30/03	01/30/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B02-065
LVL#: 0301L592
SDG/SAF#: H2060/B02-065

W.O.#: 11343-606-001-9999-00
Date Received: 01-28-03

METALS CASE NARRATIVE

1. This narrative covers the analyses of 7 TCLP leachate samples.

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

   All samples for ICP metals were run and reported at a six fold dilution due sample matrix.

3. All analyses were performed within the required holding times.

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

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.

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

7. 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.

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

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

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

11. The TCLP extract from sample J00CL4 was selected for the matrix spike (MS) for this analytical batch. All MS recoveries were greater than 50% as per method criteria.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 19 pages.

12. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

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.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

jjw/m01-592

02-06-03
Date

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 1301L592

Leaching Procedure: __1310 ✓1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A ✓3010A __3015 __3020A __3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	__6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	__6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	__6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	✓7470A [3]	__7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	__6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	✓6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

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, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. 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, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).

4. Flame AA.

5. Graphite Furnace AA.

RFW 21-21L-033/N-10/96

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/04/03

CLIENT: TNUHANFORD B02-065 H2060 LVL LOT #: 0301L592

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-008	J00CL3	Silver, TCLP Leachate	4.8	u	UG/L	4.8	6.0
		Arsenic, TCLP Leachate	21.0	u	UG/L	21.0	6.0
		Barium, TCLP Leachate	352		UG/L	0.60	6.0
		Cadmium, TCLP Leachate	621		UG/L	2.4	6.0
		Chromium, TCLP Leachate	3.6	u	UG/L	3.6	6.0
		Mercury, TCLP Leachate	1.0		UG/L	0.10	1.0
		Lead, TCLP Leachate	6190		UG/L	15.6	6.0
		Selenium, TCLP Leachate	21.6	u	UG/L	21.6	6.0
-009	J00CL4	Silver, TCLP Leachate	4.8	u	UG/L	4.8	6.0
		Arsenic, TCLP Leachate	21.0	u	UG/L	21.0	6.0
		Barium, TCLP Leachate	209		UG/L	0.60	6.0
		Cadmium, TCLP Leachate	611		UG/L	2.4	6.0
		Chromium, TCLP Leachate	4.3		UG/L	3.6	6.0
		Mercury, TCLP Leachate	0.14		UG/L	0.10	1.0
		Lead, TCLP Leachate	508		UG/L	15.6	6.0
		Selenium, TCLP Leachate	21.6	u	UG/L	21.6	6.0
-010	J00CL5	Silver, TCLP Leachate	4.8	u	UG/L	4.8	6.0
		Arsenic, TCLP Leachate	21.0	u	UG/L	21.0	6.0
		Barium, TCLP Leachate	501		UG/L	0.60	6.0
		Cadmium, TCLP Leachate	134		UG/L	2.4	6.0
		Chromium, TCLP Leachate	3.6	u	UG/L	3.6	6.0
		Mercury, TCLP Leachate	0.10	u	UG/L	0.10	1.0
		Lead, TCLP Leachate	108		UG/L	15.6	6.0
		Selenium, TCLP Leachate	21.6	u	UG/L	21.6	6.0
-011	J00CL7	Silver, TCLP Leachate	6.4		UG/L	4.8	6.0
		Arsenic, TCLP Leachate	21.0	u	UG/L	21.0	6.0
		Barium, TCLP Leachate	242		UG/L	0.60	6.0
		Cadmium, TCLP Leachate	296		UG/L	2.4	6.0
		Chromium, TCLP Leachate	3.6	u	UG/L	3.6	6.0
		Mercury, TCLP Leachate	0.20		UG/L	0.10	1.0
		Lead, TCLP Leachate	338		UG/L	15.6	6.0
		Selenium, TCLP Leachate	21.6	u	UG/L	21.6	6.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/04/03

CLIENT: TNUHANFORD B02-065 H2060 LVL LOT #: 0301L592

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-012	J00CL9	Silver, TCLP Leachate	4.8	u	UG/L	4.8	6.0
		Arsenic, TCLP Leachate	21.0	u	UG/L	21.0	6.0
		Barium, TCLP Leachate	652		UG/L	0.60	6.0
		Cadmium, TCLP Leachate	111		UG/L	2.4	6.0
		Chromium, TCLP Leachate	3.6	u	UG/L	3.6	6.0
		Mercury, TCLP Leachate	0.10	u	UG/L	0.10	1.0
		Lead, TCLP Leachate	46.4		UG/L	15.6	6.0
		Selenium, TCLP Leachate	21.6	u	UG/L	21.6	6.0
-013	J00CM0	Silver, TCLP Leachate	4.8	u	UG/L	4.8	6.0
		Arsenic, TCLP Leachate	21.0	u	UG/L	21.0	6.0
		Barium, TCLP Leachate	284		UG/L	0.60	6.0
		Cadmium, TCLP Leachate	739		UG/L	2.4	6.0
		Chromium, TCLP Leachate	3.6	u	UG/L	3.6	6.0
		Mercury, TCLP Leachate	0.24		UG/L	0.10	1.0
		Lead, TCLP Leachate	456		UG/L	15.6	6.0
		Selenium, TCLP Leachate	21.6	u	UG/L	21.6	6.0
-014	J00CM1	Silver, TCLP Leachate	4.8	u	UG/L	4.8	6.0
		Arsenic, TCLP Leachate	21.0	u	UG/L	21.0	6.0
		Barium, TCLP Leachate	510		UG/L	0.60	6.0
		Cadmium, TCLP Leachate	18.9		UG/L	2.4	6.0
		Chromium, TCLP Leachate	3.6	u	UG/L	3.6	6.0
		Mercury, TCLP Leachate	0.10	u	UG/L	0.10	1.0
		Lead, TCLP Leachate	29.1		UG/L	15.6	6.0
		Selenium, TCLP Leachate	21.6	u	UG/L	21.6	6.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/04/03

CLIENT: TNUHANFORD B02-065 H2060 LVL LOT #: 0301L592

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	03L0052-MB1	Silver, TCLP Leachate	0.80	u	UG/L	0.80	1.0
		Arsenic, TCLP Leachate	3.5	u	UG/L	3.5	1.0
		Barium, TCLP Leachate	0.24		UG/L	0.10	1.0
		Cadmium, TCLP Leachate	0.40	u	UG/L	0.40	1.0
		Chromium, TCLP Leachate	0.60	u	UG/L	0.60	1.0
		Lead, TCLP Leachate	2.6	u	UG/L	2.6	1.0
		Selenium, TCLP Leachate	3.6	u	UG/L	3.6	1.0
BLANK2	03L0052-MB2	Silver, TCLP Leachate	4.8	u	UG/L	4.8	6.0
		Arsenic, TCLP Leachate	21.0	u	UG/L	21.0	6.0
		Barium, TCLP Leachate	1.3		UG/L	0.60	6.0
		Cadmium, TCLP Leachate	2.4	u	UG/L	2.4	6.0
		Chromium, TCLP Leachate	3.6	u	UG/L	3.6	6.0
		Lead, TCLP Leachate	15.6	u	UG/L	15.6	6.0
		Selenium, TCLP Leachate	21.6	u	UG/L	21.6	6.0
BLANK1	03C0019-MB1	Mercury, Total	0.10	u	UG/L	0.10	1.0
BLANK2	03C0019-MB2	Mercury, TCLP Leachate	0.10	u	UG/L	0.10	1.0
BLANK3	03C0019-MB3	Mercury, TCLP Leachate	0.10	u	UG/L	0.10	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/04/03

CLIENT: TNUHANFORD B02-065 H2060

LVL LOT #: 0301L592

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-009	J00CL4	Silver, TCLP Leachate	4730	4.8 u	5000	94.6	6.0
		Arsenic, TCLP Leachate	4960	21.0 u	5000	99.1	6.0
		Barium, TCLP Leachate	97800	209	100000	97.6	6.0
		Cadmium, TCLP Leachate	1600	611	1000	98.7	6.0
		Chromium, TCLP Leachat	4920	4.3	5000	98.3	6.0
		Mercury, TCLP Leachate	181	0.14	200	90.6	50.0
		Lead, TCLP Leachate	5500	508	5000	99.8	6.0
		Selenium, TCLP Leachat	986	21.6 u	1000	98.6	6.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/04/03

CLIENT: TNUHANFORD B02-065 H2060

LVL LOT #: 0301L592

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-008REP	J00CL3	Silver, TCLP Leachate	4.8 u	4.8 u	NC	6.0
		Arsenic, TCLP Leachate	21.0 u	21.8	NC	6.0
		Barium, TCLP Leachate	352	351	0.31	6.0
		Cadmium, TCLP Leachate	621	625	0.66	6.0
		Chromium, TCLP Leachate	3.6 u	3.6 u	NC	6.0
		Mercury, TCLP Leachate	1.0	0.99	3.4	1.0
		Lead, TCLP Leachate	6190	6240	0.66	6.0
		Selenium, TCLP Leachate	21.6 u	21.6 u	NC	6.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/04/03

CLIENT: TNUHANFORD B02-065 H2060 LVL LOT #: 0301L592

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	03L0052-LC1	Silver, LCS	496	500	UG/L	99.2
		Arsenic, LCS	9570	10000	UG/L	95.7
		Barium, LCS	4900	5000	UG/L	98.0
		Cadmium, LCS	246	250	UG/L	98.4
		Chromium, LCS	502	500	UG/L	100.4
		Lead, LCS	2450	2500	UG/L	97.8
		Selenium, LCS	9410	10000	UG/L	94.1
LCS1	03C0019-LC1	Mercury, LCS	5.0	5.0	UG/L	99.3

Lionville Laboratory Use Only
03012592

Custody Transfer Record/Lab Work Request

Page 1 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLT LIONVILLE LABORATORY INC

Client: TNU Hanford B02-065
Est. Final Proj. Sampling Date:
Project #:
Project Contact/Phone #:
Lionville Laboratory Project Manager: OJ
QC: Del: TAT: 7 days

Date Rec'd: 1/28/03 Date Due: 2-4-03

		A														
Refrigerator #		5														
#/Type Container	Liquid	1AGL														
	Solid	↓														
Volume	Liquid															
	Solid	60mL														
Preservatives		/														
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb				INORG: Metal	CN			LEACHATES			
		Lionville Laboratory Use Only														
									ITCLP				RCRATCW			
001	J00CL3				SO	1/23/03	1400		1							
002	J00CL4				↓	↓	1402		1							
003	J00CL5				↓	↓	1406		1							
004	J00CL7				↓	↓	1410		1							
005	J00CL9				↓	↓	1416		1							
006	J00CM0				↓	↓	1418		1							
007	J00CM1				↓	↓	1422		1							
008	J00CL3 telp of 001				L	*							✓			
009	↓ L4 ↓ 002				↓	↓							✓			
010	↓ L5 ↓ 003				↓	↓							✓			

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

Special Instructions: SAF # B02-065

Run Matrix QC

DATE/REVISIONS:
* 1. See labchron
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # 79019272 5405
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. 0.4 °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
FedEx	JRemy	1/28/03	1000

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

15

Lionville Laboratory Use Only

0301L592

Custody Transfer Record/Lab Work Request

Page 1 of ___

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVL Lionville Laboratory Inc

Client: TNU- Hanford

Est. Final Proj. Sampling Date: ___

Project #: ___

Project Contact/Phone #: see page 1

Lionville Laboratory Project Manager: ___

QC ___ Del ___ TAT ___

Date Rec'd ___ Date Due ___

Refrigerator #: ___

#/Type Container: Liquid ___ Solid ___

Volume: Liquid ___ Solid ___

Preservatives: ___

ANALYSES REQUESTED →

ORGANIC				INORG		
VOA	BNA	Pest/PCB	Herb	Metal	CN	LEACHATES

Lionville Laboratory Use Only

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Leachates
011	JOOCL7 tclp JF004			L	*		✓
012	L9 005						✓
013	MO 006						✓
014	M1 007						✓

Special Instructions:

DATE/REVISIONS:

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

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. ___ °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		
Collector Doug Bowers	Company Contact Jeff Lerch	Telephone No. 373-5904	Project Coordinator KESSNER, JH	Price Code 9J	Data Turnaro... 7 day
Project Designation 618-5 Burial Ground - Anomalous Waste (Solids)	Sampling Location 300-FF-1 618-5 Burial Ground		SAF No. B02-065	Air Quality ☐
Ice Chest No. GRC- 01 · 038	Field Logbook No. EL 1395-6	COA RG61852600	Method of Shipment Federal Express	
Shipped To TMA/RECRA	Offsite Property No. A030122		Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	~~None~~ Cool 4C										
Type of Container	aG										
No. of Container(s)	1										
Volume	60mL										
SAMPLE ANALYSIS	See item (1) in Special Instructions.										

Sample No.	Matrix *	Sample Date	Sample Time	
J00CL3	OTHER SOLID	1-23-03	1400	Y
J00CL4	OTHER SOLID	1-23-03	1402	Y
J00CL5	OTHER SOLID	1-23-03	1406	Y
~~J00CL6~~	~~OTHER SOLID~~	~~1-23-03~~	~~1408~~	~~Y~~ JP 12703
J00CL7	OTHER SOLID	1-23-03	1410	Y

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From 0025	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Bowers	1-23-03/1600	Acf 1A 3728	1-23-03/1600
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
REF 1A 3728 12703	1100	S Gale	12703 1100
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
S Gale	12703 1100	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex		JPeng	1/28/03 1000
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
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

Personnel not available to relinquish samples from the 3728 Ref # 1A on 1/27/03

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

BHI-EE-011 (03/01/2002)

11

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B02-065-09	Page 1 of 1
Collector: Doug Bowers	Company Contact: Jeff Lerch	Telephone No.: 373-5904	Project Coordinator: KESSNER, JH	Price Code: 9 J; Data Turnaround: 7 day; Air Quality ☐
Project Designation: 618-5 Burial Ground - Anomalous Waste (Solids)	Sampling Location: 300-FF-1 618-5 Burial Ground		SAF No.: B02-065	
Ice Chest No.: ERC-01.038	Field Logbook No.: EL 1395-6	COA: RG61852600	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: A030122		Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	1/24/2003 COOL 4 C ~~None~~									
Type of Container	aG									
No. of Container(s)	1									
Volume	60mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.									

Sample No.	Matrix *	Sample Date	Sample Time										
~~J00CL8~~	~~OTHER SOLID~~	~~1-23-03~~	~~1412~~	X	MD 12703								
J00CL9	OTHER SOLID	1-23-03	1416	X									
J00CM0	OTHER SOLID	1-23-03	1418	X									
J00CM1	OTHER SOLID	1-23-03	1422	X									
~~J00CM2~~	~~OTHER SOLID~~	~~1-23-03~~	~~1424~~	X	MD 12703								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Doug Bowers Bowers	Date/Time: 1-23-03 1600	Received By/Stored In: R.F 1A 3728	Date/Time: 1-23-03 1600
Relinquished By/Removed From: REF 1A 3728	Date/Time: 12703 1100	Received By/Stored In: SJGAW [signature]	Date/Time: 12703 1100
Relinquished By/Removed From: SJGAW [signature]	Date/Time: 12703 1100	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: FedEx	Date/Time:	Received By/Stored In: JPerry	Date/Time: 1/28/03 1000
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
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

Personnel not available to relinquish samples from the 3728 Ref # 1A on 1/27/03

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

BHI-EE-011 (03/01/2002)

18

LIONVILLE LABORATORY INCORPORATED

SAMPLE RECEIPT CHECKLIST

NT: TNU Hanford

ase Order/Project:

DATE: 1/28/03

/ SOW# / Release #: B02-065

ratory SDG #: 0301L592

TE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded? 790192725405	☑ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☑ N/A	☐ see Comment #
10. Shipment meets LvL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☑ N/A	☐ see Comment #
12. coc signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☑ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERC-01-038 / 0.4°C

Laboratory Sample Custodian: J Perry 1/28/03 1000

Laboratory Project Manager: