H1461

0056946

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B01-103
LVL#: 0108L587
SDG/SAF#: H1461/B01-103

W.O.#: 11343-606-001-9999-00
Date Received: 08-16-01

RECEIVED
APR 19 2002
EDMC

****Revision****

METALS CASE NARRATIVE

This report has been revised to include the addition of Arsenic.

1. This narrative covers the analyses of 2 soil samples and 2 TCLP leachate samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. All TCLP leachate samples were reported with a six fold dilution for ICP analytes due to sample matrix.

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

4. The cooler temperature has been recorded on the Chain of Custody.

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. The preparation/method blank for 1 analyte was outside 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.

   a). The soil MB, 01L0562, result for Tin was greater than the Practical Quantitation Limit (PQL) {3 x the (IDL) Instrument Detection Level} and all samples for Tin 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.

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 20 pages.

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

10. The matrix spike (MS) recoveries for 2 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
B12MB7	Aluminum	20,000	99.5
	Iron	20,000	106.9

12. The TCLP leachate duplicate analyses for 2 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

13. The TCLP extract from samples B12MB7 for ICP analytes and B12MB8 for Mercury were selected for the matrix spike (MS) for this analytical batch. All MS recoveries were greater than 50% as per method criteria.

14. 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.

15. 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
Deputy Laboratory Manager
Lionville Laboratory Incorporated

11-28-01
Date

gmb/m08-587r

LIONVILLE LABORATORY INC.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 01PM 095

Initiator: C Johnson Batch: 01082587 Parameter: Metals
Date: 11/16/01 Samples: All Matrix: soil
Client: TNu Hanford H1461 Method: SW846/MCAWW/CLP/ Prep Batch: _____

1. Reason for SDR

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

b. General Discrepancy

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

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

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

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description:

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

Add Arsenic, TCLP

4. Project Manager Instructions...signature/date: C. Ann Johnson 11/16/01

__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
✓ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: [illegible] 11/26/01 Other Explanation:

__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative [illegible] 11/28/01
✓ Hard Copy COC Revised
✓ Electronic COC Revised
__ EDD Corrections Completed

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

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	2	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
__	X Project Mgr: Stone/Johnson/Haslett	__	__ GC/LC: Kiger
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rychlak/Layman
__	X QA (file): Alberts	1	✓ Log-in: Keppel [illegible]
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 0108L587

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:_____

L-WI-033/M-03/01

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.

B = Indicates that the parameter was between the Instrument Detection Limit (IDL) and the Contract Required Detection Limit (CRDL)

Q QUALIFIERS

E = The reported value is estimated because of the presence of interference.

M = Duplicate injection precision not met.

N = Spiked sample recovery not within control limits.

S = The reported value was determined by the Method of Standard Additions (MSA).

W = Post Digestion spike for Furnace AA analysis is out of control limits (85 -115 %), while sample absorbance is less than 50% of spike absorbance.

* = Duplicate analysis not within control limits.

+ = Correlation coefficient for the MSA is less than 0.995.

ABBREVIATIONS

PB = Method or Preparation Blank.
S = Matrix Spike.
T = Matrix Spike Duplicate.
R or D = Sample Replicate

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.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 11/28/01

CLIENT: TNUHANFORD B01-103 H1461 LVL LOT #: 0108L587

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B12NB7	Aluminum, Total	7200	MG/KG	1.6	1.0
		Bismuth, Total	0.31 u	MG/KG	0.31	1.0
		Calcium, Total	6680	MG/KG	0.78	1.0
		Copper, Total	12.1	MG/KG	0.05	1.0
		Iron, Total	19500	MG/KG	1.6	1.0
		Potassium, Total	1230	MG/KG	1.1	1.0
		Magnesium, Total	4840	MG/KG	0.80	1.0
		Manganese, Total	285	MG/KG	0.01	1.0
		Molybdenum, Total	1.0	MG/KG	0.10	1.0
		Sodium, Total	428	MG/KG	0.16	1.0
		Tin, Total	1.8	MG/KG	0.39	1.0
-002	B12NB8	Aluminum, Total	5210	MG/KG	1.6	1.0
		Bismuth, Total	0.32 u	MG/KG	0.32	1.0
		Calcium, Total	4470	MG/KG	0.80	1.0
		Copper, Total	12.7	MG/KG	0.05	1.0
		Iron, Total	16200	MG/KG	1.6	1.0
		Potassium, Total	643	MG/KG	1.1	1.0
		Magnesium, Total	2720	MG/KG	0.82	1.0
		Manganese, Total	213	MG/KG	0.01	1.0
		Molybdenum, Total	1.5	MG/KG	0.10	1.0
		Sodium, Total	526	MG/KG	0.16	1.0
		Tin, Total	3.5	MG/KG	0.40	1.0

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INORGANICS DATA SUMMARY REPORT 11/28/01

CLIENT: TNUHANFORD B01-103 H1461 LVL LOT #: 0108L587

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	B12MB7	Silver, TCLP Leachate	3.0	u	UG/L	3.0	6.0
		Arsenic, TCLP Leachate	23.4	u	UG/L	23.4	6.0
		Barium, TCLP Leachate	599		UG/L	0.60	6.0
		Beryllium,TCLP Leachate	1.2	u	UG/L	1.2	6.0
		Cadmium, TCLP Leachate	1.8	u	UG/L	1.8	6.0
		Chromium, TCLP Leachate	8.4	u	UG/L	8.4	6.0
		Mercury, TCLP Leachate	0.10	u	UG/L	0.10	1.0
		Nickel, TCLP Leachate	17.8		UG/L	10.2	6.0
		Lead, TCLP Leachate	14.4	u	UG/L	14.4	6.0
		Antimony, TCLP Leachate	13.8	u	UG/L	13.8	6.0
		Selenium, TCLP Leachate	19.2	u	UG/L	19.2	6.0
		Vanadium, TCLP Leachate	3.0	u	UG/L	3.0	6.0
		Zinc, TCLP Leachate	21.5		UG/L	2.4	6.0
-004	B12MB8	Silver, TCLP Leachate	3.0	u	UG/L	3.0	6.0
		Arsenic, TCLP Leachate	23.4	u	UG/L	23.4	6.0
		Barium, TCLP Leachate	289		UG/L	0.60	6.0
		Beryllium,TCLP Leachate	1.2	u	UG/L	1.2	6.0
		Cadmium, TCLP Leachate	1.8	u	UG/L	1.8	6.0
		Chromium, TCLP Leachate	8.4	u	UG/L	8.4	6.0
		Mercury, TCLP Leachate	0.10	u	UG/L	0.10	1.0
		Nickel, TCLP Leachate	10.2	u	UG/L	10.2	6.0
		Lead, TCLP Leachate	20.0		UG/L	14.4	6.0
		Antimony, TCLP Leachate	16.9		UG/L	13.8	6.0
		Selenium, TCLP Leachate	19.2	u	UG/L	19.2	6.0
		Vanadium, TCLP Leachate	3.0	u	UG/L	3.0	6.0
		Zinc, TCLP Leachate	2240		UG/L	2.4	6.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/26/01

CLIENT: TNUHANFORD B01-103 H1461 LVL LOT #: 0108L587

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	01L0562-MB1	Aluminum, Total	2.1	MG/KG	1.6	1.0
		Bismuth, Total	0.31 u	MG/KG	0.31	1.0
		Calcium, Total	3.0	MG/KG	0.78	1.0
		Copper, Total	0.05	MG/KG	0.05	1.0
		Iron, Total	6.3	MG/KG	1.6	1.0
		Potassium, Total	2.2	MG/KG	1.1	1.0
		Magnesium, Total	0.95	MG/KG	0.80	1.0
		Manganese, Total	0.02	MG/KG	0.01	1.0
		Molybdenum, Total	0.10 u	MG/KG	0.10	1.0
		Sodium, Total	9.7	MG/KG	0.16	1.0
		Tin, Total	1.4	MG/KG	0.39	1.0
BLANK1	01L0544-MB1	Silver, TCLP Leachate	0.50 u	UG/L	0.50	1.0
		Arsenic, TCLP Leachate	3.9 u	UG/L	3.9	1.0
		Barium, TCLP Leachate	0.49	UG/L	0.10	1.0
		Beryllium,TCLP Leachate	0.20 u	UG/L	0.20	1.0
		Cadmium, TCLP Leachate	0.30 u	UG/L	0.30	1.0
		Chromium, TCLP Leachate	1.4 u	UG/L	1.4	1.0
		Nickel, TCLP Leachate	1.7 u	UG/L	1.7	1.0
		Lead, TCLP Leachate	2.4 u	UG/L	2.4	1.0
		Antimony, TCLP Leachate	2.3 u	UG/L	2.3	1.0
		Selenium, TCLP Leachate	3.2	UG/L	3.2	1.0
		Vanadium, TCLP Leachate	0.50 u	UG/L	0.50	1.0
		Zinc, TCLP Leachate	2.7	UG/L	0.40	1.0
BLANK2	01L0544-MB2	Silver, TCLP Leachate	3.0 u	UG/L	3.0	6.0
		Arsenic, TCLP Leachate	23.4 u	UG/L	23.4	6.0
		Barium, TCLP Leachate	1.4	UG/L	0.60	6.0
		Beryllium,TCLP Leachate	1.2 u	UG/L	1.2	6.0
		Cadmium, TCLP Leachate	1.8 u	UG/L	1.8	6.0
		Chromium, TCLP Leachate	8.4 u	UG/L	8.4	6.0
		Nickel, TCLP Leachate	10.2 u	UG/L	10.2	6.0
		Lead, TCLP Leachate	14.4 u	UG/L	14.4	6.0
		Antimony, TCLP Leachate	13.8 u	UG/L	13.8	6.0
		Selenium, TCLP Leachate	19.2 u	UG/L	19.2	6.0
		Vanadium, TCLP Leachate	3.0 u	UG/L	3.0	6.0
		Zinc, TCLP Leachate	6.0	UG/L	2.4	6.0
BLANK3	01L0544-MB3	Silver, TCLP Leachate	3.0 u	UG/L	3.0	6.0
		Arsenic, TCLP Leachate	23.4 u	UG/L	23.4	6.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/28/01

CLIENT: TNUHANFORD B01-103 H1461 LVL LOT #: 0108L587

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK3	01L0544-MB3	Barium, TCLP Leachate	1.7		UG/L	0.60	6.0
		Beryllium,TCLP Leachate	1.2	u	UG/L	1.2	6.0
		Cadmium, TCLP Leachate	1.8	u	UG/L	1.8	6.0
		Chromium, TCLP Leachate	8.4	u	UG/L	8.4	6.0
		Nickel, TCLP Leachate	10.2	u	UG/L	10.2	6.0
		Lead, TCLP Leachate	14.4	u	UG/L	14.4	6.0
		Antimony, TCLP Leachate	13.8	u	UG/L	13.8	6.0
		Selenium, TCLP Leachate	19.2	u	UG/L	19.2	6.0
		Vanadium, TCLP Leachate	3.0	u	UG/L	3.0	6.0
		Zinc, TCLP Leachate	5.8		UG/L	2.4	6.0
BLANK1	01C0271-MB1	Mercury, Total	0.10	u	UG/L	0.10	1.0
BLANK2	01C0271-MB2	Mercury, TCLP Leachate	0.10	u	UG/L	0.10	1.0
BLANK3	01C0271-MB3	Mercury, TCLP Leachate	1.3		UG/L	0.10	1.0

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INORGANICS ACCURACY REPORT 11/28/01

CLIENT: TNUHANFORD B01-103 H1461 LVL LOT #: 0108L587

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B12MB7	Aluminum, Total	7730	7200	201	263.7*	1.0
		Calcium, Total	9380	6680	2510	107.4	1.0
		Copper, Total	33.2	12.1	25.1	84.5	1.0
		Iron, Total	18500	19500	100	-1100. *	1.0
		Potassium, Total	3770	1230	2510	100.9	1.0
		Magnesium, Total	7190	4840	2510	93.4	1.0
		Manganese, Total	329	285	50.2	88.2*	1.0
		Molybdenum, Total	91.9	1.0	100	90.4	1.0
		Sodium, Total	2880	428	2510	97.4	1.0
		Tin, Total	92.6	1.8	100	90.3	1.0
-003	B12MB7	Silver, TCLP Leachate	4660	3.0 u	5000	93.2	6.0
		Arsenic, TCLP Leachate	5040	23.4 u	5000	100.9	6.0
		Barium, TCLP Leachate	97100	599	100000	96.5	6.0
		Beryllium, TCLP Leacha	1020	1.2 u	1000	102.4	6.0
		Cadmium, TCLP Leachate	998	1.8 u	1000	99.8	6.0
		Chromium, TCLP Leachat	5020	8.4 u	5000	100.3	6.0
		Nickel, TCLP Leachate	1040	17.8	1000	102.0	6.0
		Lead, TCLP Leachate	4960	14.4 u	5000	99.2	6.0
		Antimony, TCLP Leachat	1030	13.8 u	1000	103.2	6.0
		Selenium, TCLP Leachat	1020	19.2 u	1000	102.2	6.0
		Vanadium, TCLP Leachat	1010	3.0 u	1000	101.4	6.0
		Zinc, TCLP Leachate	1060	21.5	1000	103.5	6.0

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INORGANICS ACCURACY REPORT 11/28/01

CLIENT: TNUHANFORD B01-103 H1461 LVL LOT #: 0108L587

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-004	B12MB6	Mercury, TCLP Leachate	148	0.10u	200	74.0	50.0

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INORGANICS PRECISION REPORT 11/28/01

CLIENT: TNUHANFORD B01-103 H1461 LVL LOT #: 0108LS87

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B12MB7	Aluminum, Total	7200	7220	0.35	1.0
		Calcium, Total	6680	6860	2.6	1.0
		Copper, Total	12.1	11.2	7.7	1.0
		Iron, Total	19500	18700	4.4	1.0
		Potassium, Total	1230	1320	6.4	1.0
		Magnesium, Total	4840	4820	0.45	1.0
		Manganese, Total	285	283	0.70	1.0
		Molybdenum, Total	1.0	0.85	15.8	1.0
		Sodium, Total	428	425	0.89	1.0
		Tin, Total	1.8	1.6	11.8	1.0
-003REP	B12MB7	Silver, TCLP Leachate	3.0 u	3.0 u	NC	6.0
		Arsenic, TCLP Leachate	23.4 u	23.4 u	NC	6.0
		Barium, TCLP Leachate	599	602	0.53	6.0
		Beryllium TCLP Leachate	1.2 u	1.2 u	NC	6.0
		Cadmium, TCLP Leachate	1.8 u	1.8 u	NC	6.0
		Chromium, TCLP Leachate	8.4 u	8.4 u	NC	6.0
		Nickel, Leachate	17.8	25.9	37.1	6.0
		Lead, TCLP Leachate	14.4 u	14.4 u	NC	6.0
		Antimony, Leachate	13.8 u	13.8 u	NC	6.0
		Selenium, TCLP Leachate	19.2 u	19.2 u	NC	6.0
		Vanadium, TCLP Leachate	3.0 u	3.0 u	NC	6.0
		Zinc, Leachate	21.5	16.7	25.1	6.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 11/28/01

CLIENT: TNUHANFORD B01-103 H1461 LVL LOT #: 0108L587

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-004REP	B12MB6	Mercury, TCLP Leachate	0.10u	0.10u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 11/28/01

CLIENT: TNUHANFORD B01-103 H1461 LVL LOT #: 0108L587

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	01L0562-LC1	Aluminum, LCS	496	500	MG/KG	99.1
		Bismuth, LCS	484	500	MG/KG	96.9
		Calcium, LCS	2430	2500	MG/KG	97.1
		Copper, LCS	123	125	MG/KG	98.1
		Iron, LCS	493	500	MG/KG	98.6
		Potassium, LCS	2520	2500	MG/KG	100.8
		Magnesium, LCS	2500	2500	MG/KG	99.8
		Manganese, LCS	75.5	75.0	MG/KG	100.7
		Molybdenum, LCS	494	500	MG/KG	98.8
		Sodium, LCS	2450	2500	MG/KG	98.0
		Tin, LCS	489	500	MG/KG	97.8
LCS1	01L0544-LC1	Silver, LCS	497	500	UG/L	99.4
		Arsenic, LCS	9710	10000	UG/L	97.1
		Barium, LCS	4910	5000	UG/L	98.1
		Beryllium, LCS	252	250	UG/L	100.9
		Cadmium, LCS	249	250	UG/L	99.6
		Chromium, LCS	509	500	UG/L	101.9
		Nickel, LCS	2000	2000	UG/L	100.0
		Lead, LCS	2440	2500	UG/L	97.7
		Antimony, LCS	2980	3000	UG/L	99.3
		Selenium, LCS	9410	10000	UG/L	94.1
		Vanadium, LCS	2580	2500	UG/L	103.2
		Zinc, LCS	1000	1000	UG/L	100.2
LCS1	01C0271-LC1	Mercury, LCS	4.9	5.0	UG/L	98.3

(8) Metals DIGT

Lionville Laboratory Use Only

0108L587

Custody Transfer Record/Lab Work Request

Page 1 of 1

ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

Client: TNU-Hanford B01-103

Est. Final Proj. Sampling Date:

Project #: 11343-6006.001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: OJ

QC: Spec Del: Std TAT: 30 day

Date Rec'd: 8-16-01 Date Due: 9-15-01

		A	B	C		D		E	F		G	H				
Refrigerator #		1	5	5		1		5	5		5	5			S	
#/Type Container	Liquid														e	
	Solid	1AG	1AG	1AG		1AG		1AG	1AG		1AG	1AG			t	
Volume	Liquid														o	
	Solid	120	500	250		120		500	500		60	500			c	
Preservatives		-	-	-		-		-	-		-	-			h	
ANALYSES REQUESTED →		ORGANIC VOA	BNA	Pest/PCB	Herb	Alc. Gly. Ket.		TCLP Met.	INORG Metal	CN		IC			Leachate	

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

Lionville Laboratory Use Only

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0C24H	0C25X	OPCB		ODPO OGPC		ITCLP	Met①		ICPC	Inorg①			Met②	
001	B12MB7			S	8-13-01	1110	✓	✓	✓		✓		✓	✓		✓	✓				
002	8			⊥	⊥	1138	✓	✓	✓		✓		✓	✓		✓	✓				
003	7 tclp of 001			L	*	-														✓	
004	8 ⊥ 002			⊥	⊥	⊥														✓	

Special Instructions: Saf B01-103

Run Matrix QC

* See lab chron

DATE/REVISIONS:

Met① 1. Al, Ca, Cu, Fe, Mg, Mn, K, Na, Bi, Mo, Sn

Inorg① 2. ICNO2, ICNO3, INH3N, ICNTO, IPH

⊥ 3. ISFD

Met② 4. Ba, Cd, Cr, Pb, Se, Ag, Sb, Be, Ni, V

⊥ 5. Zn, Hg (leachates) + As

11-26-01 6. Add As to tclp Met ②

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___ Airbill # SEE below
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. 4.4° °C

Relinquished by	Received by	Date	Time
FEDEX	Carla Hanf	8-16-01	9:40

Relinquished by	Received by	Date	Time
COMPOSITE		ORIGINAL	

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: