

0054566



Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-029 H1132

DATE RECEIVED: 11/08/00

RFW LOT # :0011L195

CLIENT ID /ANALYSIS RFW # MTX PREP # COLLECTION EXTR/PREP ANALYSIS

BOXC89

SILVER, TOTAL	001	S	99L1732	11/03/00	11/21/00	11/24/00
SILVER, TOTAL	001 REP	S	99L1732	11/03/00	11/21/00	11/24/00
SILVER, TOTAL	001 MS	S	99L1732	11/03/00	11/21/00	11/24/00
ARSENIC, TOTAL	001	S	99L1732	11/03/00	11/21/00	11/24/00
ARSENIC, TOTAL	001 REP	S	99L1732	11/03/00	11/21/00	11/24/00
ARSENIC, TOTAL	001 MS	S	99L1732	11/03/00	11/21/00	11/24/00
BARIUM, TOTAL	001	S	99L1732	11/03/00	11/21/00	11/24/00
BARIUM, TOTAL	001 REP	S	99L1732	11/03/00	11/21/00	11/24/00
BARIUM, TOTAL	001 MS	S	99L1732	11/03/00	11/21/00	11/24/00
CADMIUM, TOTAL	001	S	99L1732	11/03/00	11/21/00	11/24/00
CADMIUM, TOTAL	001 REP	S	99L1732	11/03/00	11/21/00	11/24/00
CADMIUM, TOTAL	001 MS	S	99L1732	11/03/00	11/21/00	11/24/00
CHROMIUM, TOTAL	001	S	99L1732	11/03/00	11/21/00	11/24/00
CHROMIUM, TOTAL	001 REP	S	99L1732	11/03/00	11/21/00	11/24/00
CHROMIUM, TOTAL	001 MS	S	99L1732	11/03/00	11/21/00	11/24/00
MERCURY, TOTAL	001	S	00C0399	11/03/00	11/29/00	11/29/00
MERCURY, TOTAL	001 REP	S	00C0399	11/03/00	11/29/00	11/29/00
MERCURY, TOTAL	001 MS	S	00C0399	11/03/00	11/29/00	11/29/00
LEAD, TOTAL	001	S	99L1732	11/03/00	11/21/00	11/24/00
LEAD, TOTAL	001 REP	S	99L1732	11/03/00	11/21/00	11/24/00
LEAD, TOTAL	001 MS	S	99L1732	11/03/00	11/21/00	11/24/00
SELENIUM, TOTAL	001	S	99L1732	11/03/00	11/21/00	11/24/00
SELENIUM, TOTAL	001 REP	S	99L1732	11/03/00	11/21/00	11/24/00
SELENIUM, TOTAL	001 MS	S	99L1732	11/03/00	11/21/00	11/24/00

BOXC88

SILVER, TOTAL	002	S	99L1732	11/03/00	11/21/00	11/24/00
ARSENIC, TOTAL	002	S	99L1732	11/03/00	11/21/00	11/24/00
BARIUM, TOTAL	002	S	99L1732	11/03/00	11/21/00	11/24/00
CADMIUM, TOTAL	002	S	99L1732	11/03/00	11/21/00	11/24/00
CHROMIUM, TOTAL	002	S	99L1732	11/03/00	11/21/00	11/24/00
MERCURY, TOTAL	002	S	00C0399	11/03/00	11/29/00	11/29/00
LEAD, TOTAL	002	S	99L1732	11/03/00	11/21/00	11/24/00
SELENIUM, TOTAL	002	S	99L1732	11/03/00	11/21/00	11/24/00

LAB QC:

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Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD B00-029 H1132

DATE RECEIVED: 11/08/00

RFW LOT # :0011L195

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SILVER LABORATORY	LC1 BS	S	99L1732	N/A	11/21/00	11/24/00
SILVER, TOTAL	MB1	S	99L1732	N/A	11/21/00	11/24/00
ARSENIC LABORATORY	LC1 BS	S	99L1732	N/A	11/21/00	11/24/00
ARSENIC, TOTAL	MB1	S	99L1732	N/A	11/21/00	11/24/00
BARIUM LABORATORY	LC1 BS	S	99L1732	N/A	11/21/00	11/24/00
BARIUM, TOTAL	MB1	S	99L1732	N/A	11/21/00	11/24/00
CADMIUM LABORATORY	LC1 BS	S	99L1732	N/A	11/21/00	11/24/00
CADMIUM, TOTAL	MB1	S	99L1732	N/A	11/21/00	11/24/00
CHROMIUM LABORATORY	LC1 BS	S	99L1732	N/A	11/21/00	11/24/00
CHROMIUM, TOTAL	MB1	S	99L1732	N/A	11/21/00	11/24/00
MERCURY LABORATORY	LC1 BS	S	00C0399	N/A	11/29/00	11/29/00
MERCURY, TOTAL	MB1	S	00C0399	N/A	11/29/00	11/29/00
LEAD LABORATORY	LC1 BS	S	99L1732	N/A	11/21/00	11/24/00
LEAD, TOTAL	MB1	S	99L1732	N/A	11/21/00	11/24/00
SELENIUM LABORATORY	LC1 BS	S	99L1732	N/A	11/21/00	11/24/00
SELENIUM, TOTAL	MB1	S	99L1732	N/A	11/21/00	11/24/00

**Recra LabNet Philadelphia
Analytical Report**

Client: TNU-HANFORD B00-029
RFW#: 0011L195
SDG/SAF#: H1132/B00-029

W.O.#: 10985-001-001-9999-00
Date Received: 11-08-00

METALS CASE NARRATIVE

1. This narrative covers the analyses of 2 soil samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
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 (80-120% for Mercury).
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 form 7.
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 levels, due to high concentrations of the following analytes:

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.

<u>Sample ID</u>	<u>Element</u>	<u>PDS Concentration (ppb)</u>	<u>PDS % Recovery</u>
B0XC89	Chromium	250	115.8
	Lead	250	105.3

12. The duplicate analyses for 3 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
13. 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.
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.



J. Michael Taylor
 VP, Laboratory General Manager
 Lionville Laboratory
 gmb/m11-195

12-14-00
 Date



METALS METHOD GLOSSARY

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

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	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Antimony	<u> 6010B </u> <u> 7041⁵ </u>	<u> 200.7 </u> <u> 204.2 </u>			<u> 99 </u>
Arsenic	<u> 6010B </u> <u> 7060A⁵ </u>	<u> 200.7 </u> <u> 206.2 </u>	<u> 3113B </u>		<u> 99 </u>
Barium	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Beryllium	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Bismuth	<u> 6010B¹ </u>	<u> 200.7¹ </u>		<u> 1620 </u>	<u> 99 </u>
Boron	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Cadmium	<u> 6010B </u> <u> 7131A⁵ </u>	<u> 200.7 </u> <u> 213.2 </u>			<u> 99 </u>
Calcium	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Chromium	<u> 6010B </u> <u> 7191⁵ </u>	<u> 200.7 </u> <u> 218.2 </u>			<u> SS17 </u>
Cobalt	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Copper	<u> 6010B </u> <u> 7211⁵ </u>	<u> 200.7 </u> <u> 220.2 </u>			<u> 99 </u>
Iron	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Lead	<u> 6010B </u> <u> 7421⁵ </u>	<u> 200.7 </u> <u> 239.2 </u>	<u> 3113B </u>		<u> 99 </u>
Lithium	<u> 6010B </u> <u> 7430⁴ </u>	<u> 200.7 </u>		<u> 1620 </u>	<u> 99 </u>
Magnesium	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Manganese	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Mercury	<u> 7470A³ </u> <u> 7471A³ </u>	<u> 245.1² </u> <u> 245.5² </u>			<u> 99 </u>
Molybdenum	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Nickel	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Potassium	<u> 6010B </u> <u> 7610⁴ </u>	<u> 200.7 </u> <u> 258.1⁴ </u>			<u> 99 </u>
Rare Earths	<u> 6010B¹ </u>	<u> 200.7¹ </u>		<u> 1620 </u>	<u> 99 </u>
Selenium	<u> 6010B </u> <u> 7740⁵ </u>	<u> 200.7 </u> <u> 270.2 </u>	<u> 3113B </u>		<u> 99 </u>
Silicon	<u> 6010B¹ </u>	<u> 200.7 </u>		<u> 1620 </u>	<u> 99 </u>
Silica	<u> 6010B </u>	<u> 200.7 </u>		<u> 1620 </u>	<u> 99 </u>
Silver	<u> 6010B </u> <u> 7761⁵ </u>	<u> 200.7 </u> <u> 272.2 </u>			<u> 99 </u>
Sodium	<u> 6010B </u> <u> 7770⁴ </u>	<u> 200.7 </u> <u> 273.1⁴ </u>			<u> 99 </u>
Strontium	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Thallium	<u> 6010B </u> <u> 7841⁵ </u>	<u> 200.7 </u> <u> 279.2 </u> <u> 200.9 </u>			<u> 99 </u>
Tin	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Titanium	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Uranium	<u> 6010B¹ </u>	<u> 200.7¹ </u>		<u> 1620 </u>	<u> 99 </u>
Vanadium	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Zinc	<u> 6010B </u>	<u> 200.7 </u>			<u> 99 </u>
Zirconium	<u> 6010B¹ </u>	<u> 200.7¹ </u>		<u> 1620 </u>	<u> 99 </u>

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

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INORGANICS DATA SUMMARY REPORT 11/30/00

CLIENT: TNUHANFORD B00-029 H1132
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0011L195

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-001	BOXC89	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	2.8	MG/KG	0.23	1.0
		Barium, Total	840	MG/KG	0.02	1.0
		Cadmium, Total	0.23	MG/KG	0.03	1.0
		Chromium, Total	2080	MG/KG	0.06	1.0
		Mercury, Total	0.06	MG/KG	0.02	1.0
		Lead, Total	8850	MG/KG	0.20	1.0
		Selenium, Total	0.32 u	MG/KG	0.32	1.0
-002	BOXC88	Silver, Total	0.62 u	MG/KG	0.62	5.0
		Arsenic, Total	17.3	MG/KG	1.4	5.0
		Barium, Total	508	MG/KG	0.11	5.0
		Cadmium, Total	0.71	MG/KG	0.17	5.0
		Chromium, Total	18.1	MG/KG	0.34	5.0
		Mercury, Total	0.07	MG/KG	0.02	1.0
		Lead, Total	214	MG/KG	1.2	5.0
		Selenium, Total	1.9 u	MG/KG	1.9	5.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/30/00

CLIENT: TNUHANFORD B00-029 H1132
 WORK ORDER: I0985-001-001-9999-00

RECRA LOT #: 0011L195

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING	DILUTION
					LIMIT	FACTOR
BLANK1	99L1732-MB1	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	0.24 u	MG/KG	0.24	1.0
		Barium, Total	0.03	MG/KG	0.02	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	0.11	MG/KG	0.06	1.0
		Lead, Total	0.21 u	MG/KG	0.21	1.0
		Selenium, Total	0.33 u	MG/KG	0.33	1.0
BLANK1	00C0399-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

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INORGANICS ACCURACY REPORT 11/30/00

CLIENT: TNUHANFORD B00-029 H1132
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0011L195

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	BOXC89	Silver, Total	4.7	0.11u	4.8	97.9	1.0
		Arsenic, Total	181	2.8	193	92.2	1.0
		Barium, Total	1050	840	193	108.2*	1.0
		Cadmium, Total	4.5	0.23	4.8	88.9	1.0
		Chromium, Total	2340	2080	19.3	1364 *	1.0
		Mercury, Total	0.24	0.06	0.17	104.0	1.0
		Lead, Total	9960	8850	48.3	2316 *	1.0
		Selenium, Total	178	0.32u	193	92.2	1.0

Recra LabNet - Lionville

INORGANICS PRECISION REPORT 11/30/00

CLIENT: TNUHANFORD B00-029 H1132
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0011L195

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE	RPD	
-001REP	BOXC89	Silver, Total	0.11u	0.11u	NC	1.0
		Arsenic, Total	2.8	2.8	0.00	1.0
		Barium, Total	840	954	12.8	1.0
		Cadmium, Total	0.23	0.21	9.1	1.0
		Chromium, Total	2080	2620	22.9	1.0
		Mercury, Total	0.06	0.04	44.4	1.0
		Lead, Total	8850	11200	23.2	1.0
		Selenium, Total	0.32u	0.32u	NC	1.0

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INORGANICS LABORATORY CONTROL STANDARDS REPORT 11/30/00

CLIENT: TNUHANFORD B00-029 H1132
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0011L195

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RECOV
			SAMPLE	AMOUNT		
LCS1	99L1732-LC1	Silver, LCS	49.3	50.0	MG/KG	98.6
		Arsenic, LCS	955	1000	MG/KG	95.5
		Barium, LCS	491	500	MG/KG	98.2
		Cadmium, LCS	24.6	25.0	MG/KG	98.4
		Chromium, LCS	49.5	50.0	MG/KG	99.0
		Lead, LCS	243	250	MG/KG	97.3
		Selenium, LCS	938	1000	MG/KG	93.8
LCS1	00C0399-LC1	Mercury, LCS	0.64	0.7	MG/KG	89.5

0011C195

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				Page of				
Collector Nielson/Stankovich/Johansen		Company Contact Mike Stankovich		Telephone No. 531-7620		Project Coordinator TRENT, SJ	Price Code 2E	Data Turnaround		
Project Designation 100F Area		Sampling Location 100F Area Parking Lot			SAF No. 800-029	Air Quality <input type="checkbox"/>	15 days			
Ice Chest No. GWS-14Z (10F1)		Field Logbook No. EL-1535	COA R11FX12000	Method of Shipment Federal Express						
Shipped To TMA/RETRA		Offsite Property No. A010004			Bill of Lading/Air Bill No. 42357953-036					
POSSIBLE SAMPLE HAZARDS/REMARKS SEE ATTACHED MEMO			Preservation	NONE						
			Type of Container	a G						
			No. of Container(s)	1						
			Volume	250ml						
Special Handling and/or Storage			SAMPLE ANALYSIS	ICP Metals						
				*6010A and 7471 Supertrace						
Sample No.	Matrix *	Sample Date	Sample Time							
B0XC89	Soil	11/3/00	1400	X						
CHAIN OF POSSESSION			Sign/Print Names		SPECIAL INSTRUCTIONS			Matrix *		
Relinquished By	Date/Time	0830	Received By	Date/Time	0830	* method 6010A Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver * Method 7471 Mercury		S=Soil SE=Sediment SO=Solid S=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trace WL=Wipe L=Liquid V=Vegetation X=Other		
R. Nielson	11/7/00	R. Green	11/7/00							
Relinquished By	Date/Time	0900	Received By	Date/Time	0900					
R. F. Johnson	11/7/00	FedEx	11/7/00							
Relinquished By	Date/Time	11-800-1015	Received By	Date/Time	11800 1015					
FedEx										
Relinquished By	Date/Time		Received By	Date/Time						
Relinquished By	Date/Time		Received By	Date/Time						
Relinquished By	Date/Time		Received By	Date/Time						
LABORATORY SECTION	Received By	Title			Date/Time					
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By			Date/Time					

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						Page 1 of 1													
Collector Nielson/Stankovich/Johansen		Company Contact Mike Stankovich		Telephone No. 531-7620		Project Coordinator TRENT, SJ		Price Code 2E	Data Turnaround												
Project Designation 100 F Area		Sampling Location 100F Area Parking Lot			SAF No. B00-029		Air Quality <input type="checkbox"/>		15 days												
Ice Chest No. GWS-142 (10F1)		Field Logbook No. EL-1535		COA RIIFX12000		Method of Shipment Federal Express															
Shipped To TMA/REIRA		Offsite Property No. A-010004			BHL of Lading/Air BHL No. 42357953-0360																
POSSIBLE SAMPLE HAZARDS/REMARKS SEE ATTACHED MEMO				Preservation		None	None														
				Type of Container		AG	AG														
				No. of Container(s)		1	0														
				Special Handling and/or Storage		Volume	60ml	60ml													
SAMPLE ANALYSIS				ICP Metals 6010A and 7471 Supertrace * See below		Semi- VOA															
Sample No.	Matrix *	Sample Date	Sample Time																		
B0XC88	Soil	11/3/00	1315	X	X																
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						Matrix *							
Relinquished By R. Nielsen		Date/Time 11/7/00 0830		Received By R. Fallberg		Date/Time 11/7/00 0830		* Method 6010A Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver						B-Soil SE-Sediment SO-Solid S-Sludge W-Water O-OM A-Air DS-Drum Solids DL-Drum Liquid T-Tissue W-Wipe L-Liquid V-Vegetation X-Other							
Relinquished By R. Fallberg		Date/Time 11-7-00 0900		Received By Fed Ex		Date/Time 11-7-00 0900															
Relinquished By Fed Ex		Date/Time 11-8-00 1015		Received By Thoppel		Date/Time 11-8-00 1015															
Relinquished By		Date/Time		Received By		Date/Time															
Relinquished By		Date/Time		Received By		Date/Time		* Method 7471 Mercury													
Relinquished By		Date/Time		Received By		Date/Time															
Relinquished By		Date/Time		Received By		Date/Time															
Relinquished By		Date/Time		Received By		Date/Time		* Semi VOA													
Relinquished By		Date/Time		Received By		Date/Time															
LABORATORY SECTION		Received By		Title		Date/Time															
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By						Date/Time											

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD B00-029 H1132

DATE RECEIVED: 12/12/00

RFW LOT # :0012L559

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
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BOXC89

TCLP	001	S	00LTO141	11/03/00	12/14/00	12/15/00
------	-----	---	----------	----------	----------	----------

BOXC88

TCLP	002	S	00LTO141	11/03/00	12/14/00	12/15/00
------	-----	---	----------	----------	----------	----------

BOXC89

CHROMIUM, TCLP LEACH	003	W	99L1822	12/15/00	12/15/00	12/18/00
CHROMIUM, TCLP LEACH	003 REP	W	99L1822	12/15/00	12/15/00	12/18/00
CHROMIUM, TCLP LEACH	003 MS	W	99L1822	12/15/00	12/15/00	12/18/00
LEAD, TCLP LEACHATE	003	W	99L1822	12/15/00	12/15/00	12/18/00
LEAD, TCLP LEACHATE	003 REP	W	99L1822	12/15/00	12/15/00	12/18/00
LEAD, TCLP LEACHATE	003 MS	W	99L1822	12/15/00	12/15/00	12/18/00

BOXC88

LEAD, TCLP LEACHATE	004	W	99L1822	12/15/00	12/15/00	12/18/00
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LAB QC:

CHROMIUM LABORATORY	LC1 BS	W	99L1822	N/A	12/15/00	12/18/00
CHROMIUM, TCLP LEACH	MB1	W	99L1822	N/A	12/15/00	12/18/00
CHROMIUM, TCLP LEACH	MB2	W	99L1822	N/A	12/15/00	12/18/00
LEAD LABORATORY	LC1 BS	W	99L1822	N/A	12/15/00	12/18/00
LEAD, TCLP LEACHATE	MB1	W	99L1822	N/A	12/15/00	12/18/00
LEAD, TCLP LEACHATE	MB2	W	99L1822	N/A	12/15/00	12/18/00



**Recra LabNet Philadelphia
Analytical Report**

Client: TNU-HANFORD B00-029
RFW#: 0012L559
SDG/SAF#: H1132/B00-029

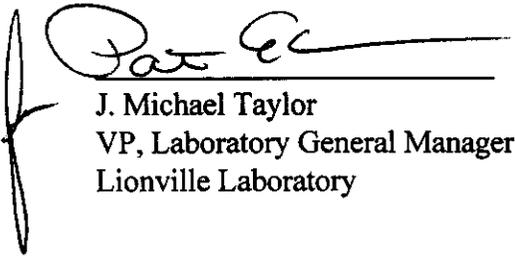
W.O.#: 10985-001-001-9999-00
Date Received: 12-12-00

METALS CASE NARRATIVE

1. This narrative covers the analyses of 2 TCLP leachate samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. This is a relog of Recra batch# 0011L195.
3. All analyses were performed within the required holding times.
4. The cooler temperature has been recorded on the original Chain of Custody.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
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 form 7.
10. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
11. The TCLP extract from sample B0XC89 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 11 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.


J. Michael Taylor
VP, Laboratory General Manager
Lionville Laboratory

12-27-00
Date

gmb/m12-559



METALS METHOD GLOSSARY

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

Recra Lot#: 0012L559

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	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Antimony	<u> </u> 6010B <u> </u> 7041 ⁵	<u> </u> 200.7 <u> </u> 204.2			<u> </u> 99
Arsenic	<u> </u> 6010B <u> </u> 7060A ⁵	<u> </u> 200.7 <u> </u> 206.2	<u> </u> 3113B		<u> </u> 99
Barium	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Beryllium	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Bismuth	<u> </u> 6010B ¹	<u> </u> 200.7 ¹		<u> </u> 1620	<u> </u> 99
Boron	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Cadmium	<u> </u> 6010B <u> </u> 7131A ⁵	<u> </u> 200.7 <u> </u> 213.2			<u> </u> 99
Calcium	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Chromium	<input checked="" type="checkbox"/> <u> </u> 6010B <u> </u> 7191 ⁵	<u> </u> 200.7 <u> </u> 218.2			<u> </u> SS17
Cobalt	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Copper	<u> </u> 6010B <u> </u> 7211 ⁵	<u> </u> 200.7 <u> </u> 220.2			<u> </u> 99
Iron	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Lead	<input checked="" type="checkbox"/> <u> </u> 6010B <u> </u> 7421 ⁵	<u> </u> 200.7 <u> </u> 239.2	<u> </u> 3113B		<u> </u> 99
Lithium	<u> </u> 6010B <u> </u> 7430 ⁴	<u> </u> 200.7		<u> </u> 1620	<u> </u> 99
Magnesium	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Manganese	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Mercury	<u> </u> 7470A ³ <u> </u> 7471A ³	<u> </u> 245.1 ² <u> </u> 245.5 ²			<u> </u> 99
Molybdenum	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Nickel	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Potassium	<u> </u> 6010B <u> </u> 7610 ⁴	<u> </u> 200.7 <u> </u> 258.1 ⁴			<u> </u> 99
Rare Earths	<u> </u> 6010B ¹	<u> </u> 200.7 ¹		<u> </u> 1620	<u> </u> 99
Selenium	<u> </u> 6010B <u> </u> 7740 ⁵	<u> </u> 200.7 <u> </u> 270.2	<u> </u> 3113B		<u> </u> 99
Silicon	<u> </u> 6010B ¹	<u> </u> 200.7		<u> </u> 1620	<u> </u> 99
Silica	<u> </u> 6010B	<u> </u> 200.7		<u> </u> 1620	<u> </u> 99
Silver	<u> </u> 6010B <u> </u> 7761 ⁵	<u> </u> 200.7 <u> </u> 272.2			<u> </u> 99
Sodium	<u> </u> 6010B <u> </u> 7770 ⁴	<u> </u> 200.7 <u> </u> 273.1 ⁴			<u> </u> 99
Strontium	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Thallium	<u> </u> 6010B <u> </u> 7841 ⁵	<u> </u> 200.7 <u> </u> 279.2 <u> </u> 200.9			<u> </u> 99
Tin	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Titanium	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Uranium	<u> </u> 6010B ¹	<u> </u> 200.7 ¹		<u> </u> 1620	<u> </u> 99
Vanadium	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Zinc	<u> </u> 6010B	<u> </u> 200.7			<u> </u> 99
Zirconium	<u> </u> 6010B ¹	<u> </u> 200.7 ¹		<u> </u> 1620	<u> </u> 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

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 12/21/00

CLIENT: TNUHANFORD B00-029 H1132
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0012L559

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	BOXC89	Chromium, TCLP Leachate	102	UG/L	4.9	1.0
		Lead, TCLP Leachate	1170	UG/L	25.0	1.0
-004	BOXC88	Lead, TCLP Leachate	25.0	u UG/L	25.0	1.0

Recra LabNet - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 12/21/00

CLIENT: TNUHANFORD 800-029 H1132
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0012L559

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	99L1822-MB1	Chromium, TCLP Leachate	4.9	u UG/L	4.9	1.0
		Lead, TCLP Leachate	25.0	u UG/L	25.0	1.0
BLANK2	99L1822-MB2	Chromium, TCLP Leachate	4.9	u UG/L	4.9	1.0
		Lead, TCLP Leachate	25.0	u UG/L	25.0	1.0

Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 12/21/00

CLIENT: TNUHANFORD B00-029 H1132
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0012L559

SAMPLE	SITE ID	ANALYTE	SPIKED	INITIAL	SPIKED	%RECOV	DILUTION
			SAMPLE	RESULT	AMOUNT		FACTOR (SPK)
-003	BOXC89	Chromium, TCLP Leachate	4250	102	5000	82.9	1.0
		Lead, TCLP Leachate	5560	1170	5000	87.8	1.0

Recra LabNet - Lionville

INORGANICS PRECISION REPORT 12/21/00

CLIENT: TNUHANFORD B00-029 H1132
WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0012L559

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE	RED	
-003REP	BOXC89	Chromium, TCLP Leachate	102	105	2.4	1.0
		Lead, TCLP Leachate	1170	1190	2.4	1.0

Recra LabNet - Lionville

INORGANICS LABORATORY CONTROL STANDARDS REPORT 12/21/00

CLIENT: TNUHANFORD B00-029 H1132
WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0012L559

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RECOV
			SAMPLE	AMOUNT		
LCS1	99L1822-LC1	Chromium, LCS	476	500	UG/L	95.2
		Lead, LCS	2380	2500	UG/L	95.4

Recra LabNet - Lionville Laboratory
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-029 H1132

DATE RECEIVED: 11/08/00

RFW LOT # :0011L195

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BOXC88	002	S	00LE1457	11/03/00	11/09/00	11/27/00

LAB QC:

SBLKGH	MB1	S	00LE1457	N/A	11/09/00	11/26/00
SBLKGH	MB1 BS	S	00LE1457	N/A	11/09/00	11/26/00





Chemical and Environmental Measurement Information
Recra LabNet Philadelphia
Analytical Report

Client: TNU-HANFORD B00-029
RFW #: 0011L195
SDG/SAF #: H1132/B00-029

W.O. #: 10985-001-001-9999-00
Date Received: 11-08-00

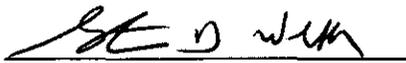
SEMIVOLATILE

One (1) soil sample was collected on 11-03-00.

The sample and its associated QC samples were extracted on 11-09-00 and analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 11-26,27-00.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. The cooler temperature upon receipt has been recorded on the chain-of-custody.
2. The sample was extracted and analyzed within required holding times.
3. Non-target compounds were identified in these samples.
4. The sample required 10-fold dilution due to dark and viscous nature of the extracts.
5. All surrogate recoveries were within acceptance criteria.
6. One (1) of eleven (11) blank spike recoveries was outside EPA QC limits.
7. The method blank contained the common laboratory contaminants Di-n-butylphthalate and Bis(2-Ethylhexyl)phthalate at levels less than the CRQL.
8. There was insufficient sample for matrix spike analyses. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
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."

by 
J. Michael Taylor
VP, Laboratory General Manager
Lionville Laboratory

12-11-00
Date

som\group\data\bna\tnu-hanford-11-195.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 15 pages.

15

RECRA

Sample Discrepancy Report (SDR)

SDR #: 00MS33D

Initiator: S Layman Batch: 004L195 Parameter: BNA
Date: 11-28-00 Samples: Matrix: Soil
Client: JWW Hand Method: SW846/MCAWW/CLP Prep Batch: 00LE 157

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. QC Problem (include all relevant specific results; attach data if necessary)

Recovery of PCP down in Blank spike

2. Known or Probable Causes(s) (To be used for trend analysis)

Lack of Organization Lack of Training Lack of Discipline Lack of Resources Lack of Time Lack of Management Support
Other (Please explain): Peaks in the chromatogram indicate pentachlorophenol is being converted during the extraction process. Spectra and quantitative report for the conversion product are provided with the Blank Spike

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)

narrate

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

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

Handwritten signature and date

5. Final Action...signature/date:

Other Explanation:

Verified re-[log][leach][extract][digest][analysis] (circle)
Included in Case Narrative
Hard Copy COC Revised
Electronic COC Revised
EDD Corrections Completed

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

Route/Distribution of SDR

Route

Distribution of Completed SDR

Initiator
Lab Manager: M. Taylor
Project Mgr: Stone/Carey/Johnson
Section Mgr: Wesson/Daniels
QA (file): Schrenkel
Data Management: Feldman
Sample Prep: Bickel/Kauffman

Metals: Doughty
Inorganic: Perrone
GC/LC: Pastor
MS: Layman/Rycklak
Log-in: Keppel
Admin: Soos
Other:

Received
DEC 04 2000
RECRA LABNET
Quality Assurance Unit
3

GLOSSARY OF BNA DATA

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.



GLOSSARY OF BNA DATA

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.



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.

Recra LabNet - Lionville Laboratory

Semivolatiles by GC/MS, HSL List

Report Date: 12/02/00 08:34

RFW Batch Number: 0011L195

Client: TNUHANFORD B00-029 H1132

Work Order: 10985001001

Page: 1a

Sample Information	Cust ID:	BOXC88	SBLKGH	SBLKGH BS
RFW#:	002	00LE1457-MB1	00LE1457-MB1	
Matrix:	SOIL	SOIL	SOIL	
D.F.:	10.0	1.00	1.00	
Units:	UG/KG	UG/KG	UG/KG	
<hr/>				
Surrogate	Nitrobenzene-d5	82 %	104 %	84 %
Recovery	2-Fluorobiphenyl	99 %	77 %	64 %
	Terphenyl-d14	109 %	100 %	77 %
	Phenol-d5	82 %	82 %	69 %
	2-Fluorophenol	61 %	73 %	63 %
	2,4,6-Tribromophenol	53 %	67 %	68 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl				
Phenol	4200 U	330 U	69 %	
bis(2-Chloroethyl) ether	4200 U	330 U	330 U	
2-Chlorophenol	4200 U	330 U	63 %	
1,3-Dichlorobenzene	4200 U	330 U	330 U	
1,4-Dichlorobenzene	4200 U	330 U	60 %	
1,2-Dichlorobenzene	4200 U	330 U	330 U	
2-Methylphenol	4200 U	330 U	330 U	
2,2'-oxybis(1-Chloropropane)	4200 U	330 U	330 U	
4-Methylphenol	4200 U	330 U	330 U	
N-Nitroso-di-n-propylamine	4200 U	330 U	87 %	
Hexachloroethane	4200 U	330 U	330 U	
Nitrobenzene	4200 U	330 U	330 U	
Isophorone	4200 U	330 U	330 U	
2-Nitrophenol	4200 U	330 U	330 U	
2,4-Dimethylphenol	4200 U	330 U	330 U	
bis(2-Chloroethoxy)methane	4200 U	330 U	330 U	
2,4-Dichlorophenol	4200 U	330 U	330 U	
1,2,4-Trichlorobenzene	4200 U	330 U	59 %	
Naphthalene	4200 U	330 U	330 U	
4-Chloroaniline	4200 U	330 U	330 U	
Hexachlorobutadiene	4200 U	330 U	330 U	
4-Chloro-3-methylphenol	4200 U	330 U	63 %	
2-Methylnaphthalene	4200 U	330 U	330 U	
Hexachlorocyclopentadiene	4200 U	330 U	330 U	
2,4,6-Trichlorophenol	4200 U	330 U	330 U	
2,4,5-Trichlorophenol	11000 U	830 U	830 U	

*= Outside of EPA CLP QC limits.

Cust ID: BOXC88 SBLKGH SBLKGH BS

RFW#: 002 00LE1457-MB1 00LE1457-MB1

60

2-Chloronaphthalene	4200	U	330	U	330	U
2-Nitroaniline	11000	U	830	U	830	U
Dimethylphthalate	4200	U	330	U	330	U
Acenaphthylene	4200	U	330	U	330	U
2,6-Dinitrotoluene	4200	U	330	U	330	U
3-Nitroaniline	11000	U	830	U	830	U
Acenaphthene	4200	U	330	U	63	%
2,4-Dinitrophenol	11000	U	830	U	830	U
4-Nitrophenol	11000	U	830	U	60	%
Dibenzofuran	4200	U	330	U	330	U
2,4-Dinitrotoluene	4200	U	330	U	84	%
Diethylphthalate	4200	U	330	U	330	U
4-Chlorophenyl-phenylether	4200	U	330	U	330	U
Fluorene	4200	U	330	U	330	U
4-Nitroaniline	11000	U	830	U	830	U
4,6-Dinitro-2-methylphenol	11000	U	830	U	830	U
N-Nitrosodiphenylamine (1)	4200	U	330	U	330	U
4-Bromophenyl-phenylether	4200	U	330	U	330	U
Hexachlorobenzene	4200	U	330	U	330	U
Pentachlorophenol	11000	U	830	U	15 *	%
Phenanthrene	4200	U	330	U	330	U
Anthracene	4200	U	330	U	330	U
Carbazole	4200	U	330	U	330	U
Di-n-butylphthalate	4200	U	28	J	330	U
Fluoranthene	4200	U	330	U	330	U
Pyrene	4200	U	330	U	73	%
Butylbenzylphthalate	4200	U	330	U	330	U
3,3'-Dichlorobenzidine	4200	U	330	U	330	U
Benzo(a)anthracene	4200	U	330	U	330	U
Chrysene	4200	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	340	JB	93	J	75	JB
Di-n-octyl phthalate	4200	U	330	U	330	U
Benzo(b)fluoranthene	4200	U	330	U	330	U
Benzo(k)fluoranthene	4200	U	330	U	330	U
Benzo(a)pyrene	4200	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	4200	U	330	U	330	U
Dibenz(a,h)anthracene	4200	U	330	U	330	U
Benzo(g,h,i)perylene	4200	U	330	U	330	U

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

1F
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BOXC88

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNUHANFORD B00-029 H1132

Matrix: (soil/water) SOIL Lab Sample ID: 0011L195-002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E112616

Level: (low/med) LOW Date Received: 11/08/00

% Moisture: 21 decanted: (Y/N) Date Extracted: 11/09/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/27/00

Injection Volume: 2.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 0 CONCENTRATION UNITS:
 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLKGH

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNUHANFORD B00-029 H1132

Matrix: (soil/water) SOIL

Lab Sample ID: 00LE1457-MB1

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

Lab File ID: E112604

Level: (low/med) LOW

Date Received: 11/09/00

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

Date Extracted: 11/09/00

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 11/26/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

CONCENTRATION UNITS:

Number TICs found: 2

(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.444	300	J
2.	UNKNOWN	20.491	200	J

0011C195

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				Page of				
Collector Nielson/Stankovich/Johansen		Company Contact Mike Stankovich		Telephone No. 531-7620		Project Coordinator TRENT, SJ	Price Code 2E	Data Turnaround		
Project Designation 100F Area		Sampling Location 100F Area Parking Lot			SAF No. 800-029	Air Quality <input type="checkbox"/>	15 days			
Ice Chest No. GWS-14Z (10F1)		Field Logbook No. EL-1535	COA R11FX12000	Method of Shipment Federal Express						
Shipped To TMA/REIRA		Offsite Property No. A010004			Bill of Lading/Air Bill No. 42357953-0369					
POSSIBLE SAMPLE HAZARDS/REMARKS SEE ATTACHED MEMO			Preservation	None						
			Type of Container	a G						
			No. of Container(s)	1						
			Special Handling and/or Storage	Volume	250ml					
SAMPLE ANALYSIS			ICP Metals							
			* 6010A and 7471 Supertrace							
Sample No.	Matrix *	Sample Date	Sample Time							
B0XC89	Soil	11/3/00	1400	X						
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *		
Relinquished By R. Nielson 11/7/00		Date/Time 0830		Received By R. Free 11/7/00		Date/Time 0830		* Method 6010A Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver * Method 7471 Mercury	S=Soil SE=Sediment SO=Solid S=Sediment W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Trace Wl=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By R. Free 11/7/00		Date/Time 0900		Received By Fed Ex 11/7/00		Date/Time 0900				
Relinquished By Fed Ex 11/8/00		Date/Time 1015		Received By Thompson 11/8/00		Date/Time 1015				
Relinquished By		Date/Time		Received By		Date/Time				
Relinquished By		Date/Time		Received By		Date/Time				
LABORATORY SECTION	Received By	Title	Date/Time							
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time							

Bechtel Hanford Inc. CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST Page 1 of 1

Collector Nielson/Stankovich/Johansen	Company Contact Mike Stankovich	Telephone No. 531-7620	Project Coordinator TRENT, SJ	Price Code 2E	Data Turnaround 15 days
Project Designation 100 F Area	Sampling Location 100F Area Parking Lot	SAF No. B00-029	Air Quality <input type="checkbox"/>		
Ice Chest No. GWS-142 (10F1)	Field Logbook No. EL-1535	COA R11FX12000	Method of Shipment Federal Express		
Shipped To TMA/RECPA	Offsite Property No. A010004	Bill of Lading/Air Bill No. 42357953-0369			

POSSIBLE SAMPLE HAZARDS/REMARKS SEE ATTACHED MEMO Special Handling and/or Storage	Preservation	None	None							
	Type of Container	AG	AG							
	No. of Container(s)	1	0							
	Volume	60ml	60ml							

SAMPLE ANALYSIS				ICP Metals	Semi-VOA							
Sample No.	Matrix *	Sample Date	Sample Time									
B0XC88	Soil	11/3/00	1315	X	X							

ICP Metals
6010A and
7471
Super trace
* See below

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix *
Relinquished By <i>R. Nielson</i>	Date/Time 0830	Received By <i>R. Fehlberg</i>	Date/Time 0830	* Method 6010A Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver * Method 7471 Mercury * Semi VOA		S-Soil SE-Sediment SO-Solid S - Sludge W - Water O-Oil A-Air DS-Drum Solids DL-Drum Liquids T-Tissue W-Wipe L-Liquid V-Vegetation X-Other
Relinquished By <i>R. Fehlberg</i>	Date/Time 0900	Received By <i>Fed Ex</i>	Date/Time 0900			
Relinquished By <i>Fed Ex</i>	Date/Time 11:800 1015	Received By <i>Thrippel</i>	Date/Time 11:800 1015			
Relinquished By	Date/Time	Received By	Date/Time			
Relinquished By	Date/Time	Received By	Date/Time			
Relinquished By	Date/Time	Received By	Date/Time			

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

Figure 1. Sample Check-in List

Date/Time Received: 11-800 / 1015

SDG#: 0011L195

Work Order Number: -

SAF# B00-029

Shipping Container ID: GLWS 142

Chain of Custody # B Not listed
TR 11-8-00

- 1. Custody Seals on shipping container intact? Yes No
- 2. Custody Seals dated and signed? Yes No
- 3. Chain-of-Custody record present? Yes No
- 4. Cooler temperature 4.0°C
- 5. Vermiculite/packing materials is Wet Dry
- 6. Number of samples in shipping container: 2
- 7. Sample holding times exceeded? Yes No

8. Samples have: <input checked="" type="checkbox"/> tape <input type="checkbox"/> hazard labels <input type="checkbox"/> custody seals <input checked="" type="checkbox"/> appropriate sample labels
9. Samples are: <input checked="" type="checkbox"/> in good condition <input type="checkbox"/> leaking <input type="checkbox"/> broken <input type="checkbox"/> have air bubbles

10. Were any anomalies identified in sample receipt? Yes No

11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Theresa Beera Date: 11-800

Telephoned to: _____ On _____ By _____

Nielson, Renee J

From: Stankovich, Michael T
Sent: Monday, November 06, 2000 8:50 AM
To: Trent, Stephen J
Cc: Nielson, Renee J; Buckmaster, Mark A; Gale, Stuart J (Jeff); Thoren, Rikki A; St John, David A
Subject: More discovery samples

Steve per our phone conversation:

Two samples will be transported to 3728 today (11/6/2000) for shipment tomorrow (11/7/2000). These sample will be analyzed using 800-029. Renee will provide the sample numbers later this afternoon after she generates the paperwork. The 60-ml container (reddish orange soil, suspected septic system waste) will be analyzed for RCRA Metals, Mercury and Semi-VOAs. The 250-ml container (yellow soil, suspected paint) will be analyzed for RCRA metals only. The samples will be done on a 15 day turn around using QTL protocol.

Ship these samples as non-rad samples. These samples are from a non-rad area. There is no process history that leads me to believe that this area has ever been a radiation contaminated area and the RCT did not find any detectable levels of contamination on the samples or sampling area.

**Steve, if the lab has enough material left, please have them run a GEA.

Michael T Stankovich

Group 4 Remedial Action Analytical Lead
MO220/100-H Area X9-10
(509) 531-7620
(509) 521-8001 FAX
MTStanko@mail.bhi-erc.com



CH2MHILL

TIE TO:
BOX 489
BOX 488

