H0817

0053293

RECRA ENVIRONMENTAL INC.

Chemical and Environmental Measurement Information

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD B99-089
RFW# : 0004L068
SDG/SAF# : H0817/B99-089

W.O.# : 10985-001-001-9999-00
Date Received: 04-25-00

RECEIVED JUN 26 2000 EDMC

METALS CASE NARRATIVE

1. This narrative covers the analyses of 11 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 with the exception of Mercury. The samples were relogged after the Mercury hold time had already been exceeded.

4. All cooler temperatures have 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. The preparation/method blank for 1 analyte was outside method criteria. {less than the Practical Quantitation Limit (3X the IDL) or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

   a.) The MB result for Chromium was greater than the Practical Quantitation Limit (PQL) {3 x the (IDL) Instrument Detection Level} and samples B0X4C9 and B0X5K0 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.

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 18 pages.

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10. All matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.

11. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

5-9-00
Date

mld/m04-068

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Recra Lot#: 0004L068

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-11/99

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 05/02/00

CLIENT: TMU-HANFORD B99-089 RECRA LOT #: 0004L068

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B0WPB1	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	1.4	MG/KG	0.34	1.0
		Barium, Total	58.2	MG/KG	0.02	1.0
		Cadmium, Total	0.04	MG/KG	0.04	1.0
		Chromium, Total	11.6	MG/KG	0.07	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	3.8	MG/KG	0.27	1.0
		Selenium, Total	0.52 u	MG/KG	0.52	1.0
-002	B0WPB2	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Arsenic, Total	0.96	MG/KG	0.33	1.0
		Barium, Total	67.8	MG/KG	0.02	1.0
		Cadmium, Total	0.08	MG/KG	0.03	1.0
		Chromium, Total	10.4	MG/KG	0.07	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	3.1	MG/KG	0.26	1.0
		Selenium, Total	0.50 u	MG/KG	0.50	1.0
-003	B0WY06	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	5.1	MG/KG	0.29	1.0
		Barium, Total	60.0	MG/KG	0.02	1.0
		Cadmium, Total	0.07	MG/KG	0.03	1.0
		Chromium, Total	10.0	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	4.9	MG/KG	0.23	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0
-004	B0WY04	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	0.98	MG/KG	0.26	1.0
		Barium, Total	36.8	MG/KG	0.02	1.0
		Cadmium, Total	0.04	MG/KG	0.03	1.0
		Chromium, Total	5.9	MG/KG	0.05	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	2.0	MG/KG	0.20	1.0
		Selenium, Total	0.39 u	MG/KG	0.39	1.0

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INORGANICS DATA SUMMARY REPORT 05/02/00

CLIENT: TNU-HANFORD B99-089 RECRA LOT #: 0004L068

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	B0X4C9	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	0.32	MG/KG	0.28	1.0
		Barium, Total	13.7	MG/KG	0.02	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	3.8	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	1.4	MG/KG	0.22	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0
-006	B0X460	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	1.1	MG/KG	0.28	1.0
		Barium, Total	42.8	MG/KG	0.02	1.0
		Cadmium, Total	0.07	MG/KG	0.03	1.0
		Chromium, Total	23.2	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	2.4	MG/KG	0.22	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0
-007	B0X5J8	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	3.6	MG/KG	0.25	1.0
		Barium, Total	46.9	MG/KG	0.02	1.0
		Cadmium, Total	0.05	MG/KG	0.03	1.0
		Chromium, Total	7.5	MG/KG	0.05	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Lead, Total	3.5	MG/KG	0.20	1.0
		Selenium, Total	0.38 u	MG/KG	0.38	1.0
-008	B0X5J9	Silver, Total	0.1 u	MG/KG	0.1	1.0
		Arsenic, Total	1.1	MG/KG	0.31	1.0
		Barium, Total	45.8	MG/KG	0.02	1.0
		Cadmium, Total	0.09	MG/KG	0.03	1.0
		Chromium, Total	10.1	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	7.8	MG/KG	0.25	1.0
		Selenium, Total	0.47 u	MG/KG	0.47	1.0

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INORGANICS DATA SUMMARY REPORT 05/02/00

CLIENT: TNU-HANFORD B99-089 RECRA LOT #: 0004L068

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-009	B0X5K0	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	0.34	MG/KG	0.28	1.0
		Barium, Total	29.3	MG/KG	0.02	1.0
		Cadmium, Total	0.1	MG/KG	0.03	1.0
		Chromium, Total	3.0	MG/KG	0.06	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Lead, Total	6.1	MG/KG	0.22	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0
-010	B0X5K1	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	2.3	MG/KG	0.28	1.0
		Barium, Total	50.1	MG/KG	0.02	1.0
		Cadmium, Total	0.08	MG/KG	0.03	1.0
		Chromium, Total	13.4	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	2.9	MG/KG	0.22	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0
-011	B0X5K2	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	1.3	MG/KG	0.27	1.0
		Barium, Total	54.7	MG/KG	0.02	1.0
		Cadmium, Total	0.04	MG/KG	0.03	1.0
		Chromium, Total	12.7	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	2.6	MG/KG	0.22	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/02/00

CLIENT: TNU-HANFORD B99-089 RECRA LOT #: 0004L068

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	99L1169-MB1	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	0.29 u	MG/KG	0.29	1.0
		Barium, Total	0.07	MG/KG	0.02	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	0.29	MG/KG	0.06	1.0
		Lead, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.44 u	MG/KG	0.44	1.0
BLANK1	00C0135-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

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INORGANICS ACCURACY REPORT 05/02/00

CLIENT: TNU-HANFORD B99-089 RECRA LOT #: 0004L068

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B0WPB1	Silver, Total	5.2	0.11u	5.7	91.2	1.0
		Arsenic, Total	202	1.4	228	88.0	1.0
		Barium, Total	264	58.2	228	90.4	1.0
		Cadmium, Total	5.1	0.04	5.7	88.9	1.0
		Chromium, Total	31.6	11.6	22.8	87.7	1.0
		Mercury, Total	0.17	0.02u	0.18	97.2	1.0
		Lead, Total	53.4	3.8	56.9	87.2	1.0
		Selenium, Total	192	0.52u	228	84.5	1.0

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INORGANICS PRECISION REPORT 05/02/00

CLIENT: TNU-HANFORD B99-089 RECRA LOT #: 0004L068

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B0WPB1	Silver, Total	0.11u	0.1 u	NC	1.0
		Arsenic, Total	1.4	1.5	6.9	1.0
		Barium, Total	58.2	57.7	0.86	1.0
		Cadmium, Total	0.04	0.04	13.4	1.0
		Chromium, Total	11.6	11.4	1.7	1.0
		Mercury, Total	0.02u	0.02u	NC	1.0
		Lead, Total	3.8	3.2	17.1	1.0
		Selenium, Total	0.52u	0.48u	NC	1.0

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INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/02/00

CLIENT: TWU-HANFORD B99-089 RECRA LOT #: 0004L068

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	99L1169-LC1	Silver, LCS	49.1	50.0	MG/KG	98.2
		Arsenic, LCS	941	1000	MG/KG	94.1
		Barium, LCS	490	500	MG/KG	98.0
		Cadmium, LCS	24.2	25.0	MG/KG	96.8
		Chromium, LCS	49.6	50.0	MG/KG	99.2
		Lead, LCS	242	250	MG/KG	97.0
		Selenium, LCS	913	1000	MG/KG	91.3
LCS1	00C0135-LC1	Mercury, LCS	0.69	0.7	MG/KG	96.9

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-089

DATE RECEIVED: 04/25/00 RFW LOT # :0004L068

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	LEACH DATE	EXTR/PREP	ANALYSIS
B0WPB1						
SILVER, TOTAL	001	S	99L1169	10/22/99	04/26/00	04/27/00
SILVER, TOTAL	001 REP	S	99L1169	10/22/99	04/26/00	04/27/00
SILVER, TOTAL	001 MS	S	99L1169	10/22/99	04/26/00	04/27/00
ARSENIC, TOTAL	001	S	99L1169	10/22/99	04/26/00	04/27/00
ARSENIC, TOTAL	001 REP	S	99L1169	10/22/99	04/26/00	04/27/00
ARSENIC, TOTAL	001 MS	S	99L1169	10/22/99	04/26/00	04/27/00
BARIUM, TOTAL	001	S	99L1169	10/22/99	04/26/00	04/27/00
BARIUM, TOTAL	001 REP	S	99L1169	10/22/99	04/26/00	04/27/00
BARIUM, TOTAL	001 MS	S	99L1169	10/22/99	04/26/00	04/27/00
CADMIUM, TOTAL	001	S	99L1169	10/22/99	04/26/00	04/27/00
CADMIUM, TOTAL	001 REP	S	99L1169	10/22/99	04/26/00	04/27/00
CADMIUM, TOTAL	001 MS	S	99L1169	10/22/99	04/26/00	04/27/00
CHROMIUM, TOTAL	001	S	99L1169	10/22/99	04/26/00	04/27/00
CHROMIUM, TOTAL	001 REP	S	99L1169	10/22/99	04/26/00	04/27/00
CHROMIUM, TOTAL	001 MS	S	99L1169	10/22/99	04/26/00	04/27/00
MERCURY, TOTAL	001	S	00C0135	10/22/99	04/27/00	04/28/00
MERCURY, TOTAL	001 REP	S	00C0135	10/22/99	04/27/00	04/28/00
MERCURY, TOTAL	001 MS	S	00C0135	10/22/99	04/27/00	04/28/00
LEAD, TOTAL	001	S	99L1169	10/22/99	04/26/00	04/27/00
LEAD, TOTAL	001 REP	S	99L1169	10/22/99	04/26/00	04/27/00
LEAD, TOTAL	001 MS	S	99L1169	10/22/99	04/26/00	04/27/00
SELENIUM, TOTAL	001	S	99L1169	10/22/99	04/26/00	04/27/00
SELENIUM, TOTAL	001 REP	S	99L1169	10/22/99	04/26/00	04/27/00
SELENIUM, TOTAL	001 MS	S	99L1169	10/22/99	04/26/00	04/27/00
B0WPB2						
SILVER, TOTAL	002	S	99L1169	10/26/99	04/26/00	04/27/00
ARSENIC, TOTAL	002	S	99L1169	10/26/99	04/26/00	04/27/00
BARIUM, TOTAL	002	S	99L1169	10/26/99	04/26/00	04/27/00
CADMIUM, TOTAL	002	S	99L1169	10/26/99	04/26/00	04/27/00
CHROMIUM, TOTAL	002	S	99L1169	10/26/99	04/26/00	04/27/00
MERCURY, TOTAL	002	S	00C0135	10/26/99	04/27/00	04/28/00
LEAD, TOTAL	002	S	99L1169	10/26/99	04/26/00	04/27/00
SELENIUM, TOTAL	002	S	99L1169	10/26/99	04/26/00	04/27/00

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-089

DATE RECEIVED: 04/25/00 RFW LOT # :0004L068

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	LEACH DATE	EXTR/PREP	ANALYSIS
B0WY06						
SILVER, TOTAL	003	S	99L1169	11/03/99	04/26/00	04/27/00
ARSENIC, TOTAL	003	S	99L1169	11/03/99	04/26/00	04/27/00
BARIUM, TOTAL	003	S	99L1169	11/03/99	04/26/00	04/27/00
CADMIUM, TOTAL	003	S	99L1169	11/03/99	04/26/00	04/27/00
CHROMIUM, TOTAL	003	S	99L1169	11/03/99	04/26/00	04/27/00
MERCURY, TOTAL	003	S	00C0135	11/03/99	04/27/00	04/28/00
LEAD, TOTAL	003	S	99L1169	11/03/99	04/26/00	04/27/00
SELENIUM, TOTAL	003	S	99L1169	11/03/99	04/26/00	04/27/00
B0WY04						
SILVER, TOTAL	004	S	99L1169	11/05/99	04/26/00	04/27/00
ARSENIC, TOTAL	004	S	99L1169	11/05/99	04/26/00	04/27/00
BARIUM, TOTAL	004	S	99L1169	11/05/99	04/26/00	04/27/00
CADMIUM, TOTAL	004	S	99L1169	11/05/99	04/26/00	04/27/00
CHROMIUM, TOTAL	004	S	99L1169	11/05/99	04/26/00	04/27/00
MERCURY, TOTAL	004	S	00C0135	11/05/99	04/27/00	04/28/00
LEAD, TOTAL	004	S	99L1169	11/05/99	04/26/00	04/27/00
SELENIUM, TOTAL	004	S	99L1169	11/05/99	04/26/00	04/27/00
B0X4C9						
SILVER, TOTAL	005	S	99L1169	12/08/99	04/26/00	04/27/00
ARSENIC, TOTAL	005	S	99L1169	12/08/99	04/26/00	04/27/00
BARIUM, TOTAL	005	S	99L1169	12/08/99	04/26/00	04/27/00
CADMIUM, TOTAL	005	S	99L1169	12/08/99	04/26/00	04/27/00
CHROMIUM, TOTAL	005	S	99L1169	12/08/99	04/26/00	04/27/00
MERCURY, TOTAL	005	S	00C0135	12/08/99	04/27/00	04/28/00
LEAD, TOTAL	005	S	99L1169	12/08/99	04/26/00	04/27/00
SELENIUM, TOTAL	005	S	99L1169	12/08/99	04/26/00	04/27/00
B0X460						
SILVER, TOTAL	006	S	99L1169	12/14/99	04/26/00	04/27/00
ARSENIC, TOTAL	006	S	99L1169	12/14/99	04/26/00	04/27/00

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-089

DATE RECEIVED: 04/25/00 RFW LOT # :0004L068

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	LEACH DATE	EXTR/PREP	ANALYSIS
BARIUM, TOTAL	006	S	99L1169	12/14/99	04/26/00	04/27/00
CADMIUM, TOTAL	006	S	99L1169	12/14/99	04/26/00	04/27/00
CHROMIUM, TOTAL	006	S	99L1169	12/14/99	04/26/00	04/27/00
MERCURY, TOTAL	006	S	00C0135	12/14/99	04/27/00	04/28/00
LEAD, TOTAL	006	S	99L1169	12/14/99	04/26/00	04/27/00
SELENIUM, TOTAL	006	S	99L1169	12/14/99	04/26/00	04/27/00
B0X5J8						
SILVER, TOTAL	007	S	99L1169	12/15/99	04/26/00	04/27/00
ARSENIC, TOTAL	007	S	99L1169	12/15/99	04/26/00	04/27/00
BARIUM, TOTAL	007	S	99L1169	12/15/99	04/26/00	04/27/00
CADMIUM, TOTAL	007	S	99L1169	12/15/99	04/26/00	04/27/00
CHROMIUM, TOTAL	007	S	99L1169	12/15/99	04/26/00	04/27/00
MERCURY, TOTAL	007	S	00C0135	12/15/99	04/27/00	04/28/00
LEAD, TOTAL	007	S	99L1169	12/15/99	04/26/00	04/27/00
SELENIUM, TOTAL	007	S	99L1169	12/15/99	04/26/00	04/27/00
B0X5J9						
SILVER, TOTAL	008	S	99L1169	12/21/99	04/26/00	04/27/00
ARSENIC, TOTAL	008	S	99L1169	12/21/99	04/26/00	04/27/00
BARIUM, TOTAL	008	S	99L1169	12/21/99	04/26/00	04/27/00
CADMIUM, TOTAL	008	S	99L1169	12/21/99	04/26/00	04/27/00
CHROMIUM, TOTAL	008	S	99L1169	12/21/99	04/26/00	04/27/00
MERCURY, TOTAL	008	S	00C0135	12/21/99	04/27/00	04/28/00
LEAD, TOTAL	008	S	99L1169	12/21/99	04/26/00	04/27/00
SELENIUM, TOTAL	008	S	99L1169	12/21/99	04/26/00	04/27/00
B0X5K0						
SILVER, TOTAL	009	S	99L1169	01/06/00	04/26/00	04/27/00
ARSENIC, TOTAL	009	S	99L1169	01/06/00	04/26/00	04/27/00
BARIUM, TOTAL	009	S	99L1169	01/06/00	04/26/00	04/27/00
CADMIUM, TOTAL	009	S	99L1169	01/06/00	04/26/00	04/27/00
CHROMIUM, TOTAL	009	S	99L1169	01/06/00	04/26/00	04/27/00
MERCURY, TOTAL	009	S	00C0135	01/06/00	04/27/00	04/28/00
LEAD, TOTAL	009	S	99L1169	01/06/00	04/26/00	04/27/00

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-089

DATE RECEIVED: 04/25/00 RFW LOT # :0004L068

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	LEACH DATE	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	009	S	99L1169	01/06/00	04/26/00	04/27/00
B0X5K1						
SILVER, TOTAL	010	S	99L1169	02/02/00	04/26/00	04/27/00
ARSENIC, TOTAL	010	S	99L1169	02/02/00	04/26/00	04/27/00
BARIUM, TOTAL	010	S	99L1169	02/02/00	04/26/00	04/27/00
CADMIUM, TOTAL	010	S	99L1169	02/02/00	04/26/00	04/27/00
CHROMIUM, TOTAL	010	S	99L1169	02/02/00	04/26/00	04/27/00
MERCURY, TOTAL	010	S	00C0135	02/02/00	04/27/00	04/28/00
LEAD, TOTAL	010	S	99L1169	02/02/00	04/26/00	04/27/00
SELENIUM, TOTAL	010	S	99L1169	02/02/00	04/26/00	04/27/00
B0X5K2						
SILVER, TOTAL	011	S	99L1169	02/02/00	04/26/00	04/27/00
ARSENIC, TOTAL	011	S	99L1169	02/02/00	04/26/00	04/27/00
BARIUM, TOTAL	011	S	99L1169	02/02/00	04/26/00	04/27/00
CADMIUM, TOTAL	011	S	99L1169	02/02/00	04/26/00	04/27/00
CHROMIUM, TOTAL	011	S	99L1169	02/02/00	04/26/00	04/27/00
MERCURY, TOTAL	011	S	00C0135	02/02/00	04/27/00	04/28/00
LEAD, TOTAL	011	S	99L1169	02/02/00	04/26/00	04/27/00
SELENIUM, TOTAL	011	S	99L1169	02/02/00	04/26/00	04/27/00

LAB QC:

SILVER LABORATORY	LC1 BS	S	99L1169	N/A	04/26/00	04/27/00
SILVER, TOTAL	MB1	S	99L1169	N/A	04/26/00	04/27/00
ARSENIC LABORATORY	LC1 BS	S	99L1169	N/A	04/26/00	04/27/00
ARSENIC, TOTAL	MB1	S	99L1169	N/A	04/26/00	04/27/00
BARIUM LABORATORY	LC1 BS	S	99L1169	N/A	04/26/00	04/27/00
BARIUM, TOTAL	MB1	S	99L1169	N/A	04/26/00	04/27/00
CADMIUM LABORATORY	LC1 BS	S	99L1169	N/A	04/26/00	04/27/00
CADMIUM, TOTAL	MB1	S	99L1169	N/A	04/26/00	04/27/00
CHROMIUM LABORATORY	LC1 BS	S	99L1169	N/A	04/26/00	04/27/00
CHROMIUM, TOTAL	MB1	S	99L1169	N/A	04/26/00	04/27/00
MERCURY LABORATORY	LC1 BS	S	00C0135	N/A	04/27/00	04/28/00
MERCURY, TOTAL	MB1	S	00C0135	N/A	04/27/00	04/28/00

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-089

DATE RECEIVED: 04/25/00 RFW LOT # :0004L068

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	LEACH DATE	EXTR/PREP	ANALYSIS
LEAD LABORATORY	LC1 BS	S	99L1169	N/A	04/26/00	04/27/00
LEAD, TOTAL	MB1	S	99L1169	N/A	04/26/00	04/27/00
SELENIUM LABORATORY	LC1 BS	S	99L1169	N/A	04/26/00	04/27/00
SELENIUM, TOTAL	MB1	S	99L1169	N/A	04/26/00	04/27/00

RECRA LabNet Use Only
C004L068

Custody Transfer Record/Lab Work Request

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FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: Thu-Hanford B99-089
Est. Final Proj. Sampling Date:
Project #: 10985-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: OJ
QC: Spec Del: Std TAT: 7 day
Date Rec'd: 4-25-00 Date Due: 5-2-00
Account #:

Refrigerator #								5							
#/Type Container	Liquid														
	Solid														
Volume	Liquid														
	Solid														
Preservatives															
ANALYSES REQUESTED →		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			Metal	CN						

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	RECRA LabNet Use Only: MACRATO
001	BOWPB1			S	10-22-99	0910	✓
002	PB2				10-26-99	1205	✓
003	Y06				11-3-99	1023	✓
004	Y04				11-5-99	1030	✓
005	BOX4C9				12-8-00	1315	✓
006	460				12-14-99	1100	✓
007	5J8				12-15-99	1040	✓
008	5J9				12-21-99	1100	✓
009	5K0				1-6-00	1105	✓
010	5K1				2-2-00	0938	✓

Special Instructions: Saf B99-089

Relogs
#001 => 9910L526
#002 => 9911L599
#003 => 643
#004 => 678
#005 => 9912L023
#006 => 051
#007 => 9912L058
#008 => 115
#009 => 0001L216
#010+011 => 0002L412

DATE/REVISIONS:
1. Run Matrix QC
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Retig	TKoppel	4-25-00	-

Relinquished by	Received by	Date	Time
COMPOSITE WASTE		ORIGINAL REWRITTEN	

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

RECRA LabNet Use Only

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

COC Tape 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

RECRA LabNet Use Only

0004L068

Custody Transfer Record/Lab Work Request

Page 2 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client TNU-Hanford B99-089

Est. Final Proj. Sampling Date

Project #

Project Contact/Phone #

RECRA Project Manager

QC Del TAT

Date Rec'd Date Due

Account #

Page 1

Refrigerator #		
#/Type Container	Liquid	
	Solid	
Volume	Liquid	
	Solid	
Preservatives		

ANALYSES REQUESTED →

ORGANIC				INORG	
VOA	BNA	Pest/PCB	Herb	Metal	CN

RECRA LabNet 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								MACRATO							
011	BOX5K2			S	2200	1307								✓							

Special Instructions:

DATE/REVISIONS:

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

RECRA LabNet Use Only

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

COC Tape 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
Belog	TKeppel	42500	-

Relinquished by	Received by	Date	Time