



0054072

Recra LabNet Philadelphia
208 Welsh Pool Road
Lionville, PA 19341-1333
Analytical Report



Client : TNU-HANFORD B00-044
RFW# : 0007L964
SDG/SAF# : H0925/B00-044

W.O.# : 10985-001-001-9999-00
Date Received: 07-25-00

RECEIVED
DEC 05 2000

METALS CASE NARRATIVE

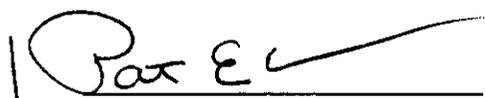
EDMC

1. This narrative covers the analyses of 1 solid sample and 1 TCLP leachate sample.
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 laboratory control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. The matrix spike (MS) recoveries for 4 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 PDS was prepared at meaningful concentration levels, due to high concentrations of the following analytes:

<u>Sample ID</u>	<u>Element</u>	<u>PDS Concentration (ppb)</u>	<u>PDS % Recovery</u>
B0Y0L9	Aluminum	20,000	94.5
	Iron	20,000	89.0
	Manganese	1,000	95.3
	Antimony	1,000	99.2

12. The duplicate analysis for Cadmium for sample B0Y0L9 (total) was outside the 20% Relative Percent Difference (RPD) control limits while all of the RPDs were within the control limits for the TCLP sample. Refer to the Inorganics Precision Report.
13. The TCLP extract from sample B0Y0L9 was 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.


 J. Michael Taylor
 Vice President
 Philadelphia Analytical Laboratory
 mld/m07-964

08-12-00
 Date



METALS METHOD GLOSSARY

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

Recra Lot#: 0007L964

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

Other: _____

Method: _____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LCS = Laboratory Control Sample.

NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).
4. Flame AA.
5. Graphite Furnace AA.

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

Recre LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 08/11/00

CLIENT: TNU-HAMFORD B00-044
 WORK ORDER: 10985-001-001-9999-00

RECRE LOT #: 0007L964

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-001	BOY0L9	Silver, Total	0.37	u MG/KG	0.37	1.0
		Aluminum, Total	8060	MG/KG	2.6	1.0
		Barium, Total	101	MG/KG	0.36	1.0
		Beryllium, Total	0.35	MG/KG	0.01	1.0
		Calcium, Total	8470	MG/KG	1.6	1.0
		Cadmium, Total	0.69	u MG/KG	0.69	1.0
		Cobalt, Total	10.9	MG/KG	0.49	1.0
		Chromium, Total	33.8	MG/KG	0.50	1.0
		Copper, Total	17.1	MG/KG	0.42	1.0
		Iron, Total	22100	MG/KG	0.76	1.0
		Mercury, Total	0.02	u MG/KG	0.02	1.0
		Potassium, Total	8660	MG/KG	50.5	1.0
		Magnesium, Total	4520	MG/KG	5.5	1.0
		Manganese, Total	367	MG/KG	0.17	1.0
		Sodium, Total	1130	MG/KG	3.9	1.0
		Nickel, Total	19.6	MG/KG	2.0	1.0
		Antimony, Total	3.9	u MG/KG	3.9	1.0
		Vanadium, Total	44.3	MG/KG	0.54	1.0
		Zinc, Total	75.3	MG/KG	0.34	1.0

Recre LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 08/11/00

CLIENT: TWU-HANFORD 800-044
WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0007L964

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	BOY019	Silver, TCLP Leachate	4.1	u UG/L	4.1	1.0
		Arsenic, TCLP Leachate	33.7	u UG/L	33.7	1.0
		Barium, TCLP Leachate	511	UG/L	2.9	1.0
		Cadmium, TCLP Leachate	4.3	u UG/L	4.3	1.0
		Chromium, TCLP Leachate	7.5	u UG/L	7.5	1.0
		Mercury, TCLP Leachate	0.50	u UG/L	0.50	5.0
		Lead, TCLP Leachate	35.1	u UG/L	35.1	1.0
		Selenium, TCLP Leachate	43.9	u UG/L	43.9	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 08/11/00

CLIENT: TWU-HANFORD B00-044

RECRA LOT #: 0007L964

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
BLANK1	99L1452-MB1	Silver, Total	0.26 u	MG/KG	0.26	1.0
		Aluminum, Total	1.8 u	MG/KG	1.8	1.0
		Barium, Total	0.25 u	MG/KG	0.25	1.0
		Beryllium, Total	0.01 u	MG/KG	0.01	1.0
		Calcium, Total	1.1	MG/KG	1.1	1.0
		Cadmium, Total	0.48 u	MG/KG	0.48	1.0
		Cobalt, Total	0.34 u	MG/KG	0.34	1.0
		Chromium, Total	0.35 u	MG/KG	0.35	1.0
		Copper, Total	0.29 u	MG/KG	0.29	1.0
		Iron, Total	0.61	MG/KG	0.53	1.0
		Potassium, Total	35.2 u	MG/KG	35.2	1.0
		Magnesium, Total	3.8 u	MG/KG	3.8	1.0
		Manganese, Total	0.12 u	MG/KG	0.12	1.0
		Sodium, Total	2.7 u	MG/KG	2.7	1.0
		Nickel, Total	1.4 u	MG/KG	1.4	1.0
		Antimony, Total	2.7 u	MG/KG	2.7	1.0
		Vanadium, Total	0.38 u	MG/KG	0.38	1.0
		Zinc, Total	0.24 u	MG/KG	0.24	1.0
BLANK1	00C0242-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0
BLANK1	99L1446-MB1	Silver, TCLP Leachate	4.1 u	UG/L	4.1	1.0
		Arsenic, TCLP Leachate	33.7 u	UG/L	33.7	1.0
		Barium, TCLP Leachate	2.9 u	UG/L	2.9	1.0
		Cadmium, TCLP Leachate	4.3 u	UG/L	4.3	1.0
		Chromium, TCLP Leachate	7.5 u	UG/L	7.5	1.0
		Lead, TCLP Leachate	35.1 u	UG/L	35.1	1.0
		Selenium, TCLP Leachate	43.9 u	UG/L	43.9	1.0
BLANK2	99L1446-MB2	Silver, TCLP Leachate	4.1 u	UG/L	4.1	1.0
		Arsenic, TCLP Leachate	33.7 u	UG/L	33.7	1.0
		Barium, TCLP Leachate	7.6	UG/L	2.9	1.0
		Cadmium, TCLP Leachate	4.3 u	UG/L	4.3	1.0
		Chromium, TCLP Leachate	7.5 u	UG/L	7.5	1.0
		Lead, TCLP Leachate	35.1 u	UG/L	35.1	1.0
		Selenium, TCLP Leachate	43.9 u	UG/L	43.9	1.0
BLANK1	00C0245-MB1	Mercury, Total	0.10 u	UG/L	0.10	1.0
BLANK2	00C0245-MB2	Mercury, TCLP Leachate	0.10 u	UG/L	0.10	1.0

Recre LabNet - Lionville

INORGANICS ACCURACY REPORT 08/11/00

CLIENT: TWU-HANFORD B00-044

RECRA LOT #: 0007L964

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	B0Y0L9	Silver, Total	6.9	0.37u	7.2	95.8	1.0
		Aluminum, Total	11000	8060	287	1025 *	1.0
		Barium, Total	374	101	287	95.2	1.0
		Beryllium, Total	6.9	0.35	7.2	91.0	1.0
		Calcium, Total	12600	8470	3580	114.1	1.0
		Cadmium, Total	6.7	0.69u	7.2	93.1	1.0
		Cobalt, Total	78.9	10.9	71.7	94.8	1.0
		Chromium, Total	64.0	33.8	28.7	105.2	1.0
		Copper, Total	50.8	17.1	35.9	93.9	1.0
		Iron, Total	25300	22100	143	2257 *	1.0
		Mercury, Total	0.24	0.02u	0.22	109.0	1.0
		Potassium, Total	12300	8660	3580	103.0	1.0
		Magnesium, Total	8440	4520	3580	109.5	1.0
		Manganese, Total	476	367	71.7	152.4*	1.0
		Sodium, Total	4350	1130	3580	89.9	1.0
		Nickel, Total	85.9	19.6	71.7	92.5	1.0
		Antimony, Total	33.5	3.9 u	71.7	46.7	1.0
		Vanadium, Total	117	44.3	71.7	101.3	1.0
		Zinc, Total	143	75.3	71.7	94.0	1.0

Regra LabNet - Lionville

INORGANICS ACCURACY REPORT 08/11/00

CLIENT: TWU-HANFORD B00-044
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0007L964

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-002	BOY0L9	Silver, TCLP Leachate	4940	4.1 u	5000	98.9	1.0
		Arsenic, TCLP Leachate	5320	33.7 u	5000	106.3	1.0
		Barium, TCLP Leachate	111000	511	100000	110.2	5.0
		Cadmium, TCLP Leachate	1010	4.3 u	1000	100.9	1.0
		Chromium, TCLP Leachat	4970	7.5 u	5000	99.3	1.0
		Mercury, TCLP Leachate	204	0.50u	200	102.1	50.0
		Lead, TCLP Leachate	5150	35.1 u	5000	103.1	1.0
		Selenium, TCLP Leachat	1090	43.9 u	1000	109.5	1.0

Recre LabNet - Lionville

INORGANICS PRECISION REPORT 08/11/00

CLIENT: TMU-HANFORD B00-044
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0007L964

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE	RPD	
-001REP	BOYOL9	Silver, Total	0.37u	0.40u	NC	1.0
		Aluminum, Total	8060	8110	0.72	1.0
		Barium, Total	101	99.7	1.5	1.0
		Beryllium, Total	0.35	0.36	3.2	1.0
		Calcium, Total	8470	7830	7.8	1.0
		Cadmium, Total	0.69u	0.77	<i>nc 200</i>	1.0
		Cobalt, Total	10.9	10.5	3.7	1.0
		Chromium, Total	33.8	32.6	3.6	1.0
		Copper, Total	17.1	16.4	4.2	1.0
		Iron, Total	22100	22000	0.30	1.0
		Mercury, Total	0.02u	0.02u	NC	1.0
		Potassium, Total	8660	8510	1.8	1.0
		Magnesium, Total	4520	4400	2.5	1.0
		Manganese, Total	367	363	1.2	1.0
		Sodium, Total	1130	1060	6.3	1.0
		Nickel, Total	19.6	18.2	7.4	1.0
		Antimony, Total	3.9 u	4.1 u	NC	1.0
		Vanadium, Total	44.3	44.3	0.00	1.0
		Zinc, Total	75.3	69.0	8.7	1.0

*Correction
 AS 8/11/00*

Recra LabNet - Lionville

INORGANICS PRECISION REPORT 06/11/00

CLIENT: TWO-HANFORD B00-044
WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0007L964

SAMPLE	SITE ID	ANALYTE	INITIAL	RESULT	REPLICATE	RPD	DILUTION
							FACTOR (REP)
-002REP	BOY019	Silver, TCLP Leachate	511	4.1 u	4.1 u	MC	1.0
		Arsenic, TCLP Leachate	511	33.7 u	33.7 u	MC	1.0
		Barium, TCLP Leachate	511	518	518	1.4	1.0
		Cadmium, TCLP Leachate	511	4.3 u	4.3 u	MC	1.0
		Chromium, TCLP Leachate	511	7.5 u	7.5 u	MC	1.0
		Mercury, TCLP Leachate	511	0.50u	0.50u	MC	5.0
		Lead, TCLP Leachate	511	35.1 u	35.1 u	MC	1.0
		Selenium, TCLP Leachate	511	43.9 u	43.9 u	MC	1.0

INORGANICS LABORATORY CONTROL STANDARDS REPORT 08/11/00

CLIENT: TWC-HANFORD 800-044
 WORK ORDER: 10985-001-001-9999-00

REGRA LOT #: 0007L964

SAMPLE	SITE ID	ANALYTE	SPINED	SPINED	SAMPLE	AMOUNT	UNITS	%RECOV
LC91	99L1452-LC1	Silver, LCS	44.7	50.0	MG/KG		89.4	
		Aluminum, LCS	465	500	MG/KG		93.1	
		Barium, LCS	453	500	MG/KG		90.5	
		Beryllium, LCS	22.6	25.0	MG/KG		90.4	
		Calcium, LCS	2300	2500	MG/KG		91.9	
		Cadmium, LCS	21.4	25.0	MG/KG		85.6	
		Cobalt, LCS	234	250	MG/KG		93.7	
		Chromium, LCS	45.8	50.0	MG/KG		91.6	
		Copper, LCS	112	125	MG/KG		89.7	
		Iron, LCS	468	500	MG/KG		93.6	
		Potassium, LCS	2250	2500	MG/KG		90.1	
		Magnesium, LCS	2290	2500	MG/KG		91.5	
		Manganese, LCS	68.9	75.0	MG/KG		91.9	
		Sodium, LCS	2260	2500	MG/KG		90.3	
		Nickel, LCS	188	200	MG/KG		94.0	
		Antimony, LCS	273	300	MG/KG		91.1	
		Vanadium, LCS	230	250	MG/KG		91.8	
		Zinc, LCS	91.2	100	MG/KG		91.2	
LC91	00C0242-LC1	Mercury, LCS	0.75	0.7	MG/KG		105.6	
LC91	99L1446-LC1	Silver, LCS	491	500	MG/L		98.3	
		Arsenic, LCS	11100	10000	MG/L		110.9	
		Barium, LCS	4980	5000	MG/L		99.7	
		Cadmium, LCS	241	250	MG/L		96.2	
		Chromium, LCS	497	500	MG/L		99.4	
		Lead, LCS	2810	2500	MG/L		100.4	
		Selenium, LCS	11100	10000	MG/L		111.0	
LC91	00C0245-LC1	Mercury, LCS	5.3	5.0	MG/L		106.7	

Recre LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B00-044

DATE RECEIVED: 07/25/00

RFW LOT # :0007L964

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BOY0L9						
TCLP	001	SO	00LTO078	07/17/00	08/02/00	08/03/00
SILVER, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
SILVER, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
SILVER, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
ALUMINUM, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
ALUMINUM, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
ALUMINUM, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
BARIUM, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
BARIUM, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
BARIUM, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
BERYLLIUM, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
BERYLLIUM, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
BERYLLIUM, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
CALCIUM, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
CALCIUM, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
CALCIUM, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
CADMIUM, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
CADMIUM, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
CADMIUM, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
COBALT, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
COBALT, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
COBALT, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
CHROMIUM, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
CHROMIUM, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
CHROMIUM, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
COPPER, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
COPPER, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
COPPER, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
IRON, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
IRON, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
IRON, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
MERCURY, TOTAL	001	SO	00C0242	07/17/00	08/07/00	08/07/00
MERCURY, TOTAL	001 REP	SO	00C0242	07/17/00	08/07/00	08/07/00
MERCURY, TOTAL	001 MS	SO	00C0242	07/17/00	08/07/00	08/07/00
POTASSIUM, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B00-044

DATE RECEIVED: 07/25/00

RFW LOT # :0007L964

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
POTASSIUM, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
POTASSIUM, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
MAGNESIUM, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
MAGNESIUM, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
MAGNESIUM, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
MANGANESE, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
MANGANESE, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
MANGANESE, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
SODIUM, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
SODIUM, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
SODIUM, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
NICKEL, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
NICKEL, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
NICKEL, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
ANTIMONY, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
ANTIMONY, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
ANTIMONY, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
VANADIUM, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
VANADIUM, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
VANADIUM, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
ZINC, TOTAL	001	SO	99L1452	07/17/00	08/08/00	08/09/00
ZINC, TOTAL	001 REP	SO	99L1452	07/17/00	08/08/00	08/09/00
ZINC, TOTAL	001 MS	SO	99L1452	07/17/00	08/08/00	08/09/00
SILVER, TCLP LEACHAT	002	W	99L1446	08/03/00	08/04/00	08/04/00
SILVER, TCLP LEACHAT	002 REP	W	99L1446	08/03/00	08/04/00	08/04/00
SILVER, TCLP LEACHAT	002 MS	W	99L1446	08/03/00	08/04/00	08/04/00
ARSENIC, TCLP LEACHA	002	W	99L1446	08/03/00	08/04/00	08/04/00
ARSENIC, TCLP LEACHA	002 REP	W	99L1446	08/03/00	08/04/00	08/04/00
ARSENIC, TCLP LEACHA	002 MS	W	99L1446	08/03/00	08/04/00	08/04/00
BARIUM, TCLP LEACHAT	002	W	99L1446	08/03/00	08/04/00	08/04/00
BARIUM, TCLP LEACHAT	002 REP	W	99L1446	08/03/00	08/04/00	08/04/00
BARIUM, TCLP LEACHAT	002 MS	W	99L1446	08/03/00	08/04/00	08/04/00
CADMIUM, TCLP LEACHA	002	W	99L1446	08/03/00	08/04/00	08/04/00
CADMIUM, TCLP LEACHA	002 REP	W	99L1446	08/03/00	08/04/00	08/04/00
CADMIUM, TCLP LEACHA	002 MS	W	99L1446	08/03/00	08/04/00	08/04/00
CHROMIUM, TCLP LEACH	002	W	99L1446	08/03/00	08/04/00	08/04/00
CHROMIUM, TCLP LEACH	002 REP	W	99L1446	08/03/00	08/04/00	08/04/00
CHROMIUM, TCLP LEACH	002 MS	W	99L1446	08/03/00	08/04/00	08/04/00

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B00-044

DATE RECEIVED: 07/25/00

RFW LOT # :0007L964

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TCLP LEACHA	002	W	00C0245	08/03/00	08/07/00	08/08/00
MERCURY, TCLP LEACHA	002 REP	W	00C0245	08/03/00	08/07/00	08/08/00
MERCURY, TCLP LEACHA	002 MS	W	00C0245	08/03/00	08/07/00	08/08/00
LEAD, TCLP LEACHATE	002	W	99L1446	08/03/00	08/04/00	08/04/00
LEAD, TCLP LEACHATE	002 REP	W	99L1446	08/03/00	08/04/00	08/04/00
LEAD, TCLP LEACHATE	002 MS	W	99L1446	08/03/00	08/04/00	08/04/00
SELENIUM, TCLP LEACH	002	W	99L1446	08/03/00	08/04/00	08/04/00
SELENIUM, TCLP LEACH	002 REP	W	99L1446	08/03/00	08/04/00	08/04/00
SELENIUM, TCLP LEACH	002 MS	W	99L1446	08/03/00	08/04/00	08/04/00

LAB QC:

SILVER LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
SILVER, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
ALUMINUM LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
ALUMINUM, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
BARIUM LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
BARIUM, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
BERYLLIUM LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
BERYLLIUM, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
CALCIUM LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
CALCIUM, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
CADMIUM LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
CADMIUM, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
COBALT LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
COBALT, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
CHROMIUM LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
CHROMIUM, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
COPPER LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
COPPER, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
IRON LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
IRON, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
MERCURY LABORATORY	LC1 BS	S	00C0242	N/A	08/07/00	08/07/00
MERCURY, TOTAL	MB1	S	00C0242	N/A	08/07/00	08/07/00
POTASSIUM LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
POTASSIUM, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
MAGNESIUM LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
MAGNESIUM, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B00-044

DATE RECEIVED: 07/25/00

RFW LOT # :0007L964

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
MANGANESE, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
SODIUM LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
SODIUM, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
NICKEL LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
NICKEL, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
ANTIMONY LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
ANTIMONY, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
VANADIUM LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
VANADIUM, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
ZINC LABORATORY	LC1 BS	S	99L1452	N/A	08/08/00	08/09/00
ZINC, TOTAL	MB1	S	99L1452	N/A	08/08/00	08/09/00
SILVER LABORATORY	LC1 BS	W	99L1446	N/A	08/04/00	08/04/00
SILVER, TCLP LEACHAT	MB1	W	99L1446	N/A	08/04/00	08/04/00
SILVER, TCLP LEACHAT	MB2	W	99L1446	N/A	08/04/00	08/04/00
ARSENIC LABORATORY	LC1 BS	W	99L1446	N/A	08/04/00	08/04/00
ARSENIC, TCLP LEACHA	MB1	W	99L1446	N/A	08/04/00	08/04/00
ARSENIC, TCLP LEACHA	MB2	W	99L1446	N/A	08/04/00	08/04/00
BARIUM LABORATORY	LC1 BS	W	99L1446	N/A	08/04/00	08/04/00
BARIUM, TCLP LEACHAT	MB1	W	99L1446	N/A	08/04/00	08/04/00
BARIUM, TCLP LEACHAT	MB2	W	99L1446	N/A	08/04/00	08/04/00
CADMIUM LABORATORY	LC1 BS	W	99L1446	N/A	08/04/00	08/04/00
CADMIUM, TCLP LEACHA	MB1	W	99L1446	N/A	08/04/00	08/04/00
CADMIUM, TCLP LEACHA	MB2	W	99L1446	N/A	08/04/00	08/04/00
CHROMIUM LABORATORY	LC1 BS	W	99L1446	N/A	08/04/00	08/04/00
CHROMIUM, TCLP LEACH	MB1	W	99L1446	N/A	08/04/00	08/04/00
CHROMIUM, TCLP LEACH	MB2	W	99L1446	N/A	08/04/00	08/04/00
MERCURY LABORATORY	LC1 BS	W	00C0245	N/A	08/07/00	08/08/00
MERCURY, TOTAL	MB1	W	00C0245	N/A	08/07/00	08/08/00
MERCURY, TCLP LEACHA	MB2	W	00C0245	N/A	08/07/00	08/08/00
LEAD LABORATORY	LC1 BS	W	99L1446	N/A	08/04/00	08/04/00
LEAD, TCLP LEACHATE	MB1	W	99L1446	N/A	08/04/00	08/04/00
LEAD, TCLP LEACHATE	MB2	W	99L1446	N/A	08/04/00	08/04/00
SELENIUM LABORATORY	LC1 BS	W	99L1446	N/A	08/04/00	08/04/00
SELENIUM, TCLP LEACH	MB1	W	99L1446	N/A	08/04/00	08/04/00
SELENIUM, TCLP LEACH	MB2	W	99L1446	N/A	08/04/00	08/04/00

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-044-01		Page 1 of 2	
Collector Fahlberg	D. Bowers / Johansen	Company Contact W Thompson	Telephone No. 372-9597	Project Coordinator TRENT, SJ		Price Code	9K	Data Turnaround 15 Days	
Project Designation Modu Tank TSD		Sampling Location 200 East		SAF No. B00-044		Air Quality <input type="checkbox"/>			
Ice Chest No.	Sml 348 10F1	Field Logbook No. EL 1381-3	COA HGWLTM3510		Method of Shipment Fed -EX				
Shipped To TMS/RECRA MD 7-17-00		Offsite Property No. A000242			Bill of Lading/Air Bill No. 4235-1953-7434				

POSSIBLE SAMPLE HAZARDS/REMARKS NONE	Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	None	None
	Type of Container	None	aG	aG	aG	aG	aG	None	aG
	No. of Container(s)	1	1	1	1	1	1	1	1
	Volume	60mL	60mL	60mL	120mL	120mL	120mL	250mL	250mL

SAMPLE ANALYSIS				Gross Alpha: Gross Beta	ICP Metals - 6010A (TAL)	Mercury - 7471 - (CV)	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	See item (1) in Special Instructions	Metals by ICP (TCLP) - 1311/6010; Mercury (TCLP) - 1311/7470	TIC TO
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Sample No.	Matrix *	Sample Date	Sample Time									
BOY0L9	Other Solid	7-17-00	1010		X	X	X	X	X		X	Boyer

CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix * S=Soil SE=Softened SD=Solid S=Sludge W = Water O=Oil A=Air DS=Drum Solid DL=Drum Liquid T=Thane W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By	Date/Time	Received By	Date/Time	Analyze for Solids Only. Not Water.				
Relinquished By	Date/Time	Received By	Date/Time	(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)				
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

**Recra LabNet Philadelphia
Analytical Report**

Client: TNU HANFORD B00-044
RFW#: 0007L964
SDG/SAF#: H0925/B00-044

W.O.#: 10985-001-001-9999-00
Date Received: 07-25-00

PCB

One (1) solid sample was collected on 07-17-00.

The sample and its associated QC samples were extracted on 07-31-00 and analyzed according to Recra OPs based on SW846, 3rd Edition procedures on 08-10,11-00. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082 for Aroclors only.

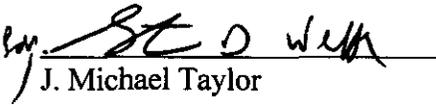
The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. The cooler temperature has been recorded on the chain-of-custody.
2. All required holding times for extraction and analysis have been met.
3. The sample and its associated QC samples received a sulfuric acid cleanup.
4. The method blank was below the reporting limits for all target compounds.
5. One (1) of four (4) obtainable surrogate recoveries were outside QC limits; however, the surrogate recovery acceptance criteria were met (i.e., no more than one outlier per sample).
6. The blank spike recovery was within acceptance criteria.
7. Matrix spike recoveries were unobtainable due to the dilution required for analysis.
8. The sample required a ten-fold instrument dilution due to high concentrations of non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.
9. All initial calibrations associated with this data set were within acceptance criteria.
10. All continuing calibration standards analyzed prior to sample extracts were within acceptance 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 8 pages.

11. 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
Vice President
Philadelphia Analytical Laboratory

08-30-00
Date

pefr:\group\data\pest\07L-964.pcb



GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification 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.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking 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** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



GLOSSARY OF PESTICIDE/PCB DATA

- P** = This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC/MS.



Recra LabNet - Lionville Laboratory

PCBs by GC

Report Date: 08/25/00 17:17

RFW Batch Number: 0007L964

Client: TNU-HANFORD B00-044

Work Order: 10985001001 Page: 1

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Sample Information	Cust ID:	BOY0L9	BOY0L9	BOY0L9	PBLKVA	PBLKVA BS
	RFW#:	001	001 MS	001 MSD	00LE0866-MB1	00LE0866-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	10.0	10.0	10.0	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	D %	D %	D %	98 %	112 %
	Decachlorobiphenyl	D %	D %	D %	110 %	126 * %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====						
Aroclor-1016		1600 U	1700 U	1600 U	33 U	33 U
Aroclor-1221		3200 U	3400 U	3100 U	67 U	67 U
Aroclor-1232		1600 U	1700 U	1600 U	33 U	33 U
Aroclor-1242		1600 U	1700 U	1600 U	33 U	33 U
Aroclor-1248		1600 U	1700 U	1600 U	33 U	33 U
Aroclor-1254		1600 U	D %	D %	33 U	128 %
Aroclor-1260		1600 U	1700 U	1600 U	33 U	33 U

9/28/00

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					DUU-044-01		
Collector Fahberg	D. Bowers / Johansen	Company Contact W Thompson	Telephone No. 372-9597	Project Coordinator TRENT, SJ	Price Code	9K	Data Turnaround	15 Days ⁰⁰	
Project Designation Modu Tank TSD	Sampling Location 200 East	SAF No. B00-044	Air Quality	<input type="checkbox"/>	15 Days ⁰⁰				
Ice Chest No. Sm 348 10F1	Field Logbook No. EL 1381-3	COA HGWLTM3510	Method of Shipment Fed-EX						
Shipped To TMA/RECRA TMD 7-17-00	Offsite Property No. A-0000242	Bill of Lading/Air Bill No. 4235-1953-7434							
POSSIBLE SAMPLE HAZARDS/REMARKS NONE	Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	None	None
	Type of Container		aG	aG	aG	aG	aG		aG
	No. of Container(s)	1	1	1	1	1	1	1	1
	Volume	60mL	60mL	60mL	120mL	120mL	120mL	250mL	
Special Handling and/or Storage									
SAMPLE ANALYSIS		Gross Alpha, Gross Beta	ICP Metals - 6010A (TAL)	Mercury - 7471 - (CV)	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	See item (1) in Special Instructions	Metals by ICP (TCLP) - 1311/6010; Mercury (TCLP) - 1311/7470
Sample No.	Matrix *	Sample Date	Sample Time						
B0Y0L9	Other Solid	7-17-00	1010		X	X	X	X	X
T.C.T.O.									
CHAIN OF POSSESSION					SPECIAL INSTRUCTIONS				
Sign/Print Names					Analyze for Solids Only. Not Water.				
Relinquished By	Date/Time	Received By	Date/Time	(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)					
Relinquished By	Date/Time	Received By	Date/Time						
Relinquished By	Date/Time	Received By	Date/Time						
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	

**Recra LabNet Philadelphia
Analytical Report**

Client: TNU HANFORD B00-044
RFW#: 0007L964
SDG/SAF#: H0925/B00-044

W.O.#: 10985-001-001-9999-00
Date Received: 07-25-00

PESTICIDE

One (1) solid sample was collected on 07-17-00.

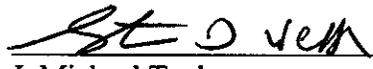
The sample and its associated QC samples were extracted on 07-31-00 and analyzed according to Recra OPs based on SW846, 3rd Edition procedures on 08-11-00. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8081.

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 has been recorded on the chain-of-custody.
2. All required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. All obtainable surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. Matrix spike recoveries were unobtainable due to the dilution required for analysis.
7. The sample required a twenty-fold instrument dilution due to high concentrations of non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.



10. 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.

pw 

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

08-30-00
Date

pefr:\group\data\pest\07L-964.pes



GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification 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.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking 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** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



GLOSSARY OF PESTICIDE/PCB DATA

- P** = This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC/MS.



Recra LabNet - Lionville Laboratory

Pesticide/PCBs by GC, CLP List

Report Date: 08/27/00 17:37

RFW Batch Number: 0007L964

Client: TNU-HANFORD B00-044

Work Order: 10985001001 Page: 1

50

	Cust ID:	BOY0L9	BOY0L9	BOY0L9	PBLKVA	PBLKVA BS
Sample	RFW#:	001	001 MS	001 MSD	00LE0866-MB1	00LE0866-MB1
Information	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	20.0	20.0	20.0	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	D %	D %	D %	92 %	75 %
	Decachlorobiphenyl	D %	D %	D %	108 %	78 %
		-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----
Alpha-BHC		160 U	140 U	160 U	1.7 U	1.7 U
Beta-BHC		160 U	140 U	160 U	1.7 U	1.7 U
Delta-BHC		160 U	140 U	160 U	1.7 U	1.7 U
gamma-BHC (Lindane)		160 U	D %	D %	1.7 U	60 %
Heptachlor		160 U	D %	D %	1.7 U	70 %
Aldrin		160 U	D %	D %	1.7 U	65 %
Heptachlor epoxide		160 U	140 U	160 U	1.7 U	1.7 U
Endosulfan I		160 U	140 U	160 U	1.7 U	1.7 U
Dieldrin		320 U	D %	D %	3.3 U	68 %
4,4'-DDE		320 U	280 U	330 U	3.3 U	3.3 U
Endrin		320 U	D %	D %	3.3 U	74 %
Endosulfan II		320 U	280 U	330 U	3.3 U	3.3 U
4,4'-DDD		320 U	280 U	330 U	3.3 U	3.3 U
Endosulfan sulfate		320 U	280 U	330 U	3.3 U	3.3 U
4,4'-DDT		320 U	D %	D %	3.3 U	70 %
Methoxychlor		1600 U	1400 U	1600 U	17 U	17 U
Endrin ketone		320 U	280 U	330 U	3.3 U	3.3 U
Endrin aldehyde		320 U	280 U	330 U	3.3 U	3.3 U
alpha-Chlordane		160 U	140 U	160 U	1.7 U	1.7 U
gamma-Chlordane		160 U	140 U	160 U	1.7 U	1.7 U
Toxaphene		16000 U	14000 U	16000 U	170 U	170 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Recra LabNet - Lionville Laboratory
 PEST/PCB ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B00-044

DATE RECEIVED: 07/25/00

RFW LOT # :0007L964

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BOY0L9	001	SO	00LE0866	07/17/00	07/31/00	08/11/00
BOY0L9	001 MS	SO	00LE0866	07/17/00	07/31/00	08/11/00
BOY0L9	001 MSD	SO	00LE0866	07/17/00	07/31/00	08/11/00

LAB QC:

PBLKVA	MB1	S	00LE0866	N/A	07/31/00	08/11/00
PBLKVA	MB1 BS	S	00LE0866	N/A	07/31/00	08/11/00

90
08-28-00

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B00-044-01		Page 1 of 1			
Collector Fahlberg / <i>D. Bowers / Johansen</i>		Company Contact W Thompson		Telephone No. 372-9597		Project Coordinator TRENT, SJ		Price Code 9K		Data Turnaround 15 Days		
Project Designation Modu Tank TSD		Sampling Location 200 East			SAF No. B00-044		Air Quality <input type="checkbox"/>		00			
Ice Chest No. <i>SM 348 10F1</i>		Field Logbook No. EL 1381-3		COA HGWLTM3510		Method of Shipment Fed -EX						
Shipped To TMA/RECRA <i>TMD 7-17-00</i>		Offsite Property No. <i>A000242</i>			Bill of Lading/Air Bill No. <i>4235-7953-7434</i>							
POSSIBLE SAMPLE HAZARDS/REMARKS <i>NONE</i>				Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	None	None
				Type of Container	<i>21.00</i>	aG	aG	aG	aG	aG	<i>21.00</i>	aG
				No. of Container(s)	<i>21.00</i>	1	1	1	1	1	<i>21.00</i>	1
				Special Handling and/or Storage	Volume	60mL	60mL	60mL	120mL	120mL	120mL	<i>21.00</i>
SAMPLE ANALYSIS				Gross Alpha; Gross Beta	ICP Metals - 6010A (TAL)	Mercury - 7471 - (CV)	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	See item (1) in Special Instructions	Metals by ICP (TCLP) - 1311/6010; Mercury (TCLP) - 1311/7470	<i>TCTO</i>
				Sample No.	Matrix *	Sample Date	Sample Time					
<i>BOY019</i>	<i>Other Solid</i>	<i>7-17-00</i>	<i>1010</i>		<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>Boyd</i>
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By <i>[Signature]</i>		Date/Time <i>7-17-00</i>		Received By <i>R. Johnson</i>		Date/Time <i>7-17-00</i>		Analyze for Solids Only. Not Water. (1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)				S=Soil SE=Solvent SO=Solid S=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Thane WL=Wipe L=Liquid V=Vegetation X=Other
Relinquished By <i>R. Johnson</i>		Date/Time <i>7-17-00 1430</i>		Received By <i>FEDEX</i>		Date/Time <i>7-17-00</i>						
Relinquished By <i>FEDEX</i>		Date/Time <i>7-25-00 0915</i>		Received By <i>TRappel</i>		Date/Time <i>7-25-00 0915</i>						
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					



Recra LabNet Philadelphia
208 Welsh Pool Road
Lionville, PA19341-1333
Analytical Report

Client: TNU-HANFORD B00-044
RFW#: 0007L964
SDG/SAF #: H0925/B00-044

W.O. #: 10985-001-001-9999-00
Date Received: 07-25-2000

SEMIVOLATILE

One (1) solid sample was collected on 07-17-2000.

The sample and its associated QC samples were extracted on 07-31-2000 and analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 08-08,10-2000.

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 samples were extracted and analyzed within required holding times.
3. Non-target compounds were detected in the samples.
4. The sample and its associated matrix spike samples required 5-fold dilution due to high levels of target compounds.
5. All surrogate recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. All matrix spike recoveries were within EPA QC limits.
8. The method blank contained the common laboratory contaminants Di-n-butylphthalate, Bis(2-Ethylhexyl)phthalate and the target compound Phenol at levels less than the CRQL.
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
Vice President
Philadelphia Analytical Laboratory

08-11-00
Date



som\group\data\bna\tnu-hanford-07-964.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 10 pages.

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.



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.



Recra LabNet - Lionville Laboratory

Semivolatiles by GC/MS, HSL List

Report Date: 08/11/00 13:34

04

RFW Batch Number: 0007L964

Client: TNU-HANFORD B00-044

Work Order: 10985001001

Page: 1a

Sample Information	Cust ID:	BOY0L9	BOY0L9	BOY0L9	SBLKVZ	SBLKVZ BS
RFW#:	001	001 MS	001 MSD	00LE0869-MB1	00LE0869-MB1	
Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL	
D.F.:	5.00	5.00	5.00	1.00	1.00	
Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	
Surrogate	Nitrobenzene-d5	52 %	45 %	46 %	48 %	79 %
Recovery	2-Fluorobiphenyl	66 %	58 %	60 %	52 %	86 %
	Terphenyl-d14	99 %	81 %	83 %	62 %	98 %
	Phenol-d5	57 %	51 %	56 %	40 %	71 %
	2-Fluorophenol	59 %	49 %	54 %	40 %	67 %
	2,4,6-Tribromophenol	62 %	62 %	69 %	43 %	86 %
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----						
Phenol		2900 U	51 %	52 %	40 J	69 %
bis(2-Chloroethyl)ether		2900 U	2900 U	2900 U	330 U	330 U
2-Chlorophenol		2900 U	54 %	57 %	330 U	73 %
1,3-Dichlorobenzene		2900 U	2900 U	2900 U	330 U	330 U
1,4-Dichlorobenzene		2900 U	47 %	46 %	330 U	72 %
1,2-Dichlorobenzene		2900 U	2900 U	2900 U	330 U	330 U
2-Methylphenol		2900 U	2900 U	2900 U	330 U	330 U
2,2'-oxybis(1-Chloropropane)		2900 U	2900 U	2900 U	330 U	330 U
4-Methylphenol		2900 U	2900 U	2900 U	330 U	330 U
N-Nitroso-di-n-propylamine		2900 U	46 %	51 %	330 U	71 %
Hexachloroethane		2900 U	2900 U	2900 U	330 U	330 U
Nitrobenzene		2900 U	2900 U	2900 U	330 U	330 U
Isophorone		2900 U	2900 U	2900 U	330 U	330 U
2-Nitrophenol		2900 U	2900 U	2900 U	330 U	330 U
2,4-Dimethylphenol		2900 U	2900 U	2900 U	330 U	330 U
bis(2-Chloroethoxy)methane		2900 U	2900 U	2900 U	330 U	330 U
2,4-Dichlorophenol		2900 U	2900 U	2900 U	330 U	330 U
1,2,4-Trichlorobenzene		2900 U	52 %	55 %	330 U	82 %
Naphthalene		2900 U	2900 U	2900 U	330 U	330 U
4-Chloroaniline		2900 U	2900 U	2900 U	330 U	330 U
Hexachlorobutadiene		2900 U	2900 U	2900 U	330 U	330 U
4-Chloro-3-methylphenol		2900 U	53 %	59 %	330 U	73 %
2-Methylnaphthalene		2900 U	2900 U	2900 U	330 U	330 U
Hexachlorocyclopentadiene		2900 U	2900 U	2900 U	330 U	330 U
2,4,6-Trichlorophenol		2900 U	2900 U	2900 U	330 U	330 U
2,4,5-Trichlorophenol		7200 U	7200 U	7200 U	830 U	830 U

*= Outside of EPA CLP QC limits.

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Cust ID:	BOY0L9	BOY0L9	BOY0L9	SBLKVZ	SBLKVZ BS
RFW#:	001	001 MS	001 MSD	00LE0869-MB1	00LE0869-MB1

2-Chloronaphthalene	2900	U	2900	U	2900	U	330	U	330	U
2-Nitroaniline	7200	U	7200	U	7200	U	830	U	830	U
Dimethylphthalate	2900	U	2900	U	2900	U	330	U	330	U
Acenaphthylene	2900	U	2900	U	2900	U	330	U	330	U
2,6-Dinitrotoluene	2900	U	2900	U	2900	U	330	U	330	U
3-Nitroaniline	7200	U	7200	U	7200	U	830	U	830	U
Acenaphthene	2900	U	63	%	65	%	330	U	80	%
2,4-Dinitrophenol	7200	U	7200	U	7200	U	830	U	830	U
4-Nitrophenol	7200	U	42	%	42	%	830	U	86	%
Dibenzofuran	2900	U	2900	U	2900	U	330	U	330	U
2,4-Dinitrotoluene	2900	U	45	%	52	%	330	U	84	%
Diethylphthalate	2900	U	2900	U	2900	U	330	U	330	U
4-Chlorophenyl-phenylether	2900	U	2900	U	2900	U	330	U	330	U
Fluorene	2900	U	2900	U	2900	U	330	U	330	U
4-Nitroaniline	7200	U	7200	U	7200	U	830	U	830	U
4,6-Dinitro-2-methylphenol	7200	U	7200	U	7200	U	830	U	830	U
N-Nitrosodiphenylamine (1)	2900	U	2900	U	2900	U	330	U	330	U
4-Bromophenyl-phenylether	2900	U	2900	U	2900	U	330	U	330	U
Hexachlorobenzene	2900	U	2900	U	2900	U	330	U	330	U
Pentachlorophenol	7200	U	52	%	60	%	830	U	83	%
Phenanthrene	2900	U	2900	U	2900	U	330	U	330	U
Anthracene	2900	U	2900	U	2900	U	330	U	330	U
Carbazole	2900	U	2900	U	2900	U	330	U	330	U
Di-n-butylphthalate	2900	U	2900	U	2900	U	100	J	330	U
Fluoranthene	2900	U	2900	U	2900	U	330	U	330	U
Pyrene	2900	U	78	%	80	%	330	U	83	%
Butylbenzylphthalate	2900	U	2900	U	2900	U	330	U	330	U
3,3'-Dichlorobenzidine	2900	U	2900	U	2900	U	330	U	330	U
Benzo (a) anthracene	2900	U	2900	U	2900	U	330	U	330	U
Chrysene	2900	U	2900	U	2900	U	330	U	330	U
bis (2-Ethylhexyl) phthalate	13000	B	17000	B	15000	B	25	J	34	JB
Di-n-octyl phthalate	280	J	420	J	430	J	330	U	330	U
Benzo (b) fluoranthene	2900	U	2900	U	2900	U	330	U	330	U
Benzo (k) fluoranthene	2900	U	2900	U	2900	U	330	U	330	U
Benzo (a) pyrene	2900	U	2900	U	2900	U	330	U	330	U
Indeno (1,2,3-cd) pyrene	2900	U	2900	U	2900	U	330	U	330	U
Dibenz (a,h) anthracene	2900	U	2900	U	2900	U	330	U	330	U
Benzo (g,h,i) perylene	2900	U	2900	U	2900	U	330	U	330	U

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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						Price Code 9K		Data Turnaround 15 Days			
Collector Fahlberg	D. Bowers / Johansen	Company Contact W Thompson	Telephone No. 372-9597			Project Coordinator TRENT, SJ		Air Quality <input type="checkbox"/>					
Project Designation Modu Tank TSD		Sampling Location 200 East			SAF No. B00-044								
Ice Chest No. SM1 348 10F1		Field Logbook No. EL 1381-3		COA HGWLTM3510		Method of Shipment Fed-EX							
Shipped To TMD/RECRA TMD 7-17-00		Offsite Property No. A-000242			Bill of Lading/Air Bill No. 4235-1983-7434								
POSSIBLE SAMPLE HAZARDS/REMARKS NONE				Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	None	None	
				Type of Container	1	aG	aG	aG	aG	aG	1	aG	
				No. of Container(s)	1	1	1	1	1	1	1	1	
				Volume	60mL	60mL	60mL	120mL	120mL	120mL	250mL		
SPECIAL HANDLING AND/OR STORAGE				Gross Alpha/ Gross Beta		KCP Metals - 6010A (TAL)	Mercury - 7471 - (CV)	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	See Inst. (1) in Spec. Instr.	Metals by KCP (TCLP) - 1311/6010; Mercury (TCLP) - 1311/7470	
SAMPLE ANALYSIS				TCLP									
Sample No.	Matrix *	Sample Date	Sample Time										
BOY0L9	Other Solid	7-17-00	1010		X	X	X	X	X		X		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *					
Relinquished By M. Johnson 7-17-00				Received By B. Johnson 7-17-00				Analyze for Solids Only. Not Water. (1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)					
Relinquished By B. Johnson 7-17-00				Received By FE 10 EX									
Relinquished By Fed Ex 72500 0915				Received By JB 72500 0915									
Relinquished By				Received By									
Relinquished By				Received By									
Relinquished By				Received By									
LABORATORY SECTION		Received By		Title		Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time							



**Recra LabNet Philadelphia
208 Welsh Pool Road
Lionville, PA19341-1333
Analytical Report**

Client: TNU-HANFORD B00-044
RFW #: 0007L964
SDG/SAF #: H0925/B00-044

W.O. #: 10985-001-001-9999-00
Date Received: 07-25-2000

GC/MS VOLATILE

One (1) soil sample was collected on 07-17-2000.

The sample and its associated QC samples were analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8260B for TCL Volatile target compounds on 07-27,28-2000.

The following is a summary of the QC results accompanying these 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 analyzed within required holding time.
3. Non-target compounds were detected in the sample.
4. All surrogate recoveries were within EPA QC limits.
5. All matrix spike recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. The method blanks contained the common laboratory contaminants Methylene Chloride and/or Acetone at levels less than the CRQL.
8. "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
/ J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

08-15-00
Date

som\group\data\voa\tnu-hanford-07-964.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 1 1 pages.

GLOSSARY OF VOA 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.
- 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.



GLOSSARY OF VOA 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.



Recra LabNet - Lionville Laboratory

Volatiles by GC/MS, HSL List

Report Date: 08/03/00 11:33

RFW Batch Number: 0007L964

Client: TNU-HANFORD B00-044

Work Order: 10985001001 Page: 1a

04

Cust. ID:	BOY0L9	BOY0L9	BOY0L9	VBLKII	VBLKIH	VBLKIH BS	
Sample Information	RFW#:	001	001 MS	001 MSD	00LVX169-MB1	00LVN262-MB1	00LVN262-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL	SOIL
	D.F.:	0.980	1.02	1.02	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate Recovery	Toluene-d8	94 %	116 %	110 %	93 %	108 %	101 %
	Bromofluorobenzene	93 %	84 %	83 %	94 %	83 %	84 %
	1,2-Dichloroethane-d4	89 %	111 %	108 %	90 %	100 %	107 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
Chloromethane		17 U	18 U	18 U	10 U	10 U	1 J
Bromomethane		17 U	18 U	18 U	10 U	10 U	10 U
Vinyl Chloride		17 U	18 U	18 U	10 U	10 U	10 U
Chloroethane		17 U	18 U	18 U	10 U	10 U	10 U
Methylene Chloride		13 B	16 B	15 B	4 J	7	7 B
Acetone		31	27 B	47 B	10 U	3 J	3 JB
Carbon Disulfide		10	21	33	5 U	5 U	5 U
1,1-Dichloroethene		8 U	81 %	84 %	5 U	5 U	73 %
1,1-Dichloroethane		8 U	9 U	9 U	5 U	5 U	5 U
1,2-Dichloroethene (total)		8 U	9 U	9 U	5 U	5 U	5 U
Chloroform		8 U	9 U	9 U	5 U	5 U	5 U
1,2-Dichloroethane		8 U	9 U	9 U	5 U	5 U	5 U
2-Butanone		4 J	3 J	5 J	10 U	10 U	10 U
1,1,1-Trichloroethane		8 U	9 U	9 U	5 U	5 U	5 U
Carbon Tetrachloride		8 U	9 U	9 U	5 U	5 U	5 U
Bromodichloromethane		8 U	9 U	9 U	5 U	5 U	5 U
1,2-Dichloropropane		8 U	9 U	9 U	5 U	5 U	5 U
cis-1,3-Dichloropropene		8 U	9 U	9 U	5 U	5 U	5 U
Trichloroethene		8 U	94 %	98 %	5 U	5 U	98 %
Dibromochloromethane		8 U	9 U	9 U	5 U	5 U	5 U
1,1,2-Trichloroethane		8 U	9 U	9 U	5 U	5 U	5 U
Benzene		8 U	111 %	111 %	5 U	5 U	101 %
Trans-1,3-Dichloropropene		8 U	9 U	9 U	5 U	5 U	5 U
Bromoform		8 U	9 U	9 U	5 U	5 U	5 U
4-Methyl-2-pentanone		17 U	18 U	18 U	10 U	10 U	10 U
2-Hexanone		17 U	18 U	18 U	10 U	10 U	10 U
Tetrachloroethene		8 U	9 U	9 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane		8 U	9 U	9 U	5 U	5 U	5 U
Toluene		2 J	128 %	124 %	5 U	5 U	110 %

*= Outside of EPA CLP QC limits.

Cust ID: B0Y0L9 B0Y0L9 B0Y0L9 VBLKII VBLKIH VBLKIH BS

RFW#: 001 001 MS 001 MSD 00LVX169-MB1 00LVN262-MB1 00LVN262-MB1

Chlorobenzene	8 U	104 %	105 %	5 U	5 U	105 %
Ethylbenzene	8 U	9 U	9 U	5 U	5 U	5 U
Styrene	8 U	9 U	9 U	5 U	5 U	5 U
Xylene (total)	8 U	9 U	9 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0Y0L9

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B00-044

Matrix: SOLID Lab Sample ID: 0007L964-001

Sample wt/vol: 5.10 (g/mL) G Lab File ID: x072813

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: not dec. 42 Date Analyzed: 07/28/00

Column: (pack/cap) CAP Dilution Factor: 0.980

Number TICs found: 2 CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	15.159	10	J
2.	UNKNOWN	18.211	20	J

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			BH0-044-01
Collector Fahlberg	D. Bouer / Johansen	Company Contact W Thompson	Telephone No. 372-9597	Project Coordinator TRENT, SJ	Price Code 9K Data Turnaround 15 Days
Project Designation Modu Tank TSD		Sampling Location 200 East		SAF No. B00-044	Air Quality <input type="checkbox"/>
Ice Chest No. Small 348 10FT	Field Logbook No. EL 1381-3	COA HGWLTM3510		Method of Shipment Fed -EX	
Shipped To TMA/RECRA MD 7-17-00		Offsite Property No. A000242		Bill of Lading/Air Bill No. 4235-1953-7434	

POSSIBLE SAMPLE HAZARDS/REMARKS NONE	Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	None	None
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1
	Volume	60mL	60mL	60mL	120mL	120mL	120mL	250mL	250mL

SAMPLE ANALYSIS	Gross Alpha; Gross Beta	ICP Metals - 6010A (TAL)	Mercury - 7471 - (CV)	PCBs - 8082; Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	See item (1) in Special Instructions	Metals by ICP (TCLP) - 1311/6010; Mercury (TCLP) - 1311/7470	T E T O
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Sample No.	Matrix *	Sample Date	Sample Time							
BOY0L9	Other Solid	7-17-00	1010		X	X	X	X	X	X

CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix * 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 M. Johnson	Date/Time 7-17-00	Received By R. Johnson	Date/Time 7-17-00	Analyze for Solids Only. Not Water.				
Relinquished By R. Johnson	Date/Time 7-17-00	Received By Fed Ex	Date/Time 7-17-00	(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)				
Relinquished By Fed Ex	Date/Time 7-25-00	Received By TBopp	Date/Time 7-25-00					
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

1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H0925 was composed of one other solid sample designated under SAF No. B00-044 with a Project Designation of: Modu Tank TSD.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Thermo Retec Sample Receipt Checklist. The results were transmitted to BHI via e-Fax on August 12th, 2000.

ANALYSIS NOTES

2.1 Gamma Spectroscopy Analyses

No problems were encountered during the course of the analyses.

2.2 Gross Alpha and Gross Beta Analyses

No problems were encountered during the course of the analyses.



TMA/RICHMOND
 SAMPLE DELIVERY GROUP H0925

SDG 7446
 Contact Melissa C. Mannion

Client Hanford
 Contract TRC-SBB-207925
 Case no SDG H0925

SAMPLE SUMMARY

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB		CHAIN OF	
				SAMPLE ID	SAF NO	CUSTODY	COLLECTED
BOY0L9	200 East	SOLID		R007128-01	B00-044	B00-044-01	07/17/00 10:10
Method Blank		SOLID		R007128-03	B00-044		
Lab Control Sample		SOLID		R007128-02	B00-044		
Duplicate (R007128-01)	200 East	SOLID		R007128-04	B00-044		07/17/00 10:10

Lab id TMANC
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CS
 Version 3.06
 Report date 08/12/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0925

SDG 7446
 Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
 Contract TRC-SBB-207925
 Case no SDG H0925

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7446	B00-044-01	BOY0L9	SOLID	100.0			07/26/00	9	R007128-01	7446-001
		Method Blank	SOLID						R007128-03	7446-003
		Lab Control Sample	SOLID						R007128-02	7446-002
		Duplicate (R007128-01)	SOLID				07/26/00	9	R007128-04	7446-004

Lab id TMANC
 Protocol Hanford
 Version Ver 1.0
 Form DVD-QS
 Version 3.06
 Report date 08/12/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0925

SDG 7446
 Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
 Contract TRC-SBB-207925
 Case no SDG H0925

TEST MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALI-PIERS
		BATCH	2σ %	CLIENT	MORE	RE BLANK	LCS DUP/ORIG MS/ORIG	
Gas Proportional Counting								
80A	SOLID	Gross Alpha in Soil	6929-068	20.0	1	1	1	1/1
80B	SOLID	Gross Beta in Soil	6929-068	15.0	1	1	1	1/1
Gamma Spectroscopy								
GAM	SOLID	Gamma Scan	6929-068	15.0	1	1	1	1/1

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.
 Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id TMANC
 Protocol Hanford
 Version Ver 1.0
 Form DVD-PBS
 Version 3.06
 Report date 08/12/00

TMA/RICHMOND
SAMPLE DELIVERY GROUP H0925

SDG 7446
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H0925

WORK SUMMARY

CLIENT SAMPLE ID	LAB SAMPLE ID				SUF-					
LOCATION	MATRIX	COLLECTED		TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
CUSTODY	SAF No	RECEIVED	PLANCHET							
B0Y0L9		R007128-01	7446-001	80A/80		08/07/00	08/12/00	MCM	Gross Alpha in Soil	
200 East	SOLID	07/17/00	7446-001	80B/80		08/07/00	08/12/00	MCM	Gross Beta in Soil	
B00-044-01	B00-044	07/26/00	7446-001	GAM		08/01/00	08/12/00	MCM	Gamma Scan	
Method Blank		R007128-03	7446-003	80A/80		08/07/00	08/12/00	MCM	Gross Alpha in Soil	
	SOLID		7446-003	80B/80		08/07/00	08/12/00	MCM	Gross Beta in Soil	
	B00-044		7446-003	GAM		08/02/00	08/12/00	MCM	Gamma Scan	
Lab Control Sample		R007128-02	7446-002	80A/80		08/07/00	08/12/00	MCM	Gross Alpha in Soil	
	SOLID		7446-002	80B/80		08/07/00	08/12/00	MCM	Gross Beta in Soil	
	B00-044		7446-002	GAM		08/01/00	08/12/00	MCM	Gamma Scan	
Duplicate (R007128-01)		R007128-04	7446-004	80A/80		08/07/00	08/12/00	MCM	Gross Alpha in Soil	
200 East	SOLID	07/17/00	7446-004	80B/80		08/07/00	08/12/00	MCM	Gross Beta in Soil	
	B00-044	07/26/00	7446-004	GAM		08/02/00	08/12/00	MCM	Gamma Scan	

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
80A/80	B00-044	Gross Alpha in Soil	EPA900.0	1			1	1	1		4
80B/80	B00-044	Gross Beta in Soil	EPA900.0	1			1	1	1		4
GAM	B00-044	Gamma Scan	GAMMAHI	1			1	1	1		4
TOTALS				3			3	3	3		12

Lab id TMANC
Protocol Hanford
Version Vex 1.0
Form DVD-CWS
Version 3.06
Report date 08/12/00

TMA / RICHMOND
SAMPLE DELIVERY GROUP H0925

R007128-03

Method Blank

METHOD BLANK

SDG <u>7446</u>	Client/Case no <u>Hanford</u>	SDG <u>H0925</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>TRC-SBB-207925</u>	
Lab sample id <u>R007128-03</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7446-003</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>B00-044</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	-1.15	1.4	3.6	10	U	80A
Gross Beta	12587-47-2	-0.460	3.2	5.5	15	U	80B
Potassium 40	13966-00-2	U		0.35		U	GAM
Cobalt 60	10198-40-0	U		<u>0.065</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.033	0.10	U	GAM
Radium 226	13982-63-3	U		0.062	0.10	U	GAM
Radium 228	15262-20-1	U		0.14	0.20	U	GAM
Europium 152	14683-23-9	U		0.074	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.11</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.045	0.10	U	GAM
Thorium 228	14274-82-9	U		0.034		U	GAM
Thorium 232	TH-232	U		0.14		U	GAM
Uranium 235	15117-96-1	U		0.074		U	GAM
Uranium 238	U-238	U		4.2		U	GAM
Americium 241	14596-10-2	U		0.024	1.0	U	GAM

Modu Tank TSD

QC-BLANK #35252

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 08/12/00

TMA/RICHMOND
 SAMPLE DELIVERY GROUP H0925

R007128-02

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7446</u>	Client/Case no <u>Hanford</u> SDG <u>H0925</u>
Contact <u>Melissa C. Mannion</u>	Case no <u>TRC-SBB-207925</u>
Lab sample id <u>R007128-02</u>	Client sample id <u>Lab Control Sample</u>
Dept sample id <u>7446-002</u>	Material/Matrix <u>SOLID</u>
	SAF No <u>B00-044</u>

ANALYTE	RESULT	2σ ERR	MDA	RDL	QUALI-	ADDED	2σ ERR	RBC	3σ LMTS	PROTOCOL
	pCi/g	(COUNT)	pCi/g	pCi/g	FIERS	TEST	pCi/g	%	(TOTAL)	LIMITS
Gross Alpha	209	15	2.8	10		80A	201	8.0	104	66-134 70-130
Gross Beta	227	11	6.3	15		80B	222	8.9	102	75-125 70-130
Cobalt 60	1.13	0.038	0.017	0.050		GAM	1.19	0.048	95	77-123 80-120
Cesium 137	1.29	0.033	0.020	0.10		GAM	1.34	0.054	96	77-123 80-120

Modu Tank TSD

QC-LCS #35251

LAB CONTROL SAMPLES

Page 1

SUMMARY DATA SECTION

Page 8

Lab id <u>TMANC</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>08/12/00</u>

TMA/RICHMOND
SAMPLE DELIVERY GROUP H0925

R007128-04

BOY0L9

DUPLICATE

SDG <u>7446</u>		Client/Case no <u>Hanford</u> SDG <u>H0925</u>
Contact <u>Melissa C. Mannion</u>		Case no <u>TRC-SBB-207925</u>
DUPLICATE	ORIGINAL	
Lab sample id <u>R007128-04</u>	Lab sample id <u>R007128-01</u>	Client sample id <u>BOY0L9</u>
Dept sample id <u>7446-004</u>	Dept sample id <u>7446-001</u>	Location/Matrix <u>200 East</u> <u>SOLID</u>
	Received <u>07/26/00</u>	Collected <u>07/17/00 10:10</u>
	% solids <u>100.0</u>	Custody/SAF No <u>B00-044-01</u> <u>B00-044</u>

ANALYTE	DUPLICATE	2σ ERR	MDA	RDL	QUALI-	TEST	ORIGINAL	2σ ERR	MDA	QUALI-	RPD	3σ	PROT
	pCi/g	(COUNT)	pCi/g	pCi/g	FIERS		pCi/g	(COUNT)	pCi/g	FIERS	%	TOT	LIMIT
Gross Alpha	5.28	3.2	3.6	10	J	80A	4.24	2.9	3.5	J	22	143	
Gross Beta	20.6	5.2	7.2	15		80B	22.1	4.7	5.8		7	59	
Potassium 40	10.2	0.93	0.58			GAM	10.4	1.5	0.32		2	41	
Cobalt 60	0.132	0.053	<u>0.056</u>	0.050		GAM	0.120	0.036	0.036		10	83	
Cesium 137	0.208	0.044	0.047	0.10		GAM	0.244	0.036	0.035		16	49	
Radium 226	0.298	0.094	0.096	0.10		GAM	0.256	0.064	0.054		15	69	
Radium 228	0.355	0.19	<u>0.21</u>	0.20		GAM	0.412	0.14	0.13		15	98	
Europium 152	U		<u>0.11</u>	0.10	U	GAM	U		0.067	U	-		
Europium 154	U		<u>0.17</u>	0.10	U	GAM	U		0.085	U	-		
Europium 155	U		0.10	0.10	U	GAM	U		0.047	U	-		
Thorium 228	0.390	0.051	0.055			GAM	0.484	0.060	0.054		22	42	
Thorium 232	0.355	0.19	0.21			GAM	0.412	0.14	0.13		15	98	
Uranium 235	U		0.17		U	GAM	U		0.090	U	-		
Uranium 238	U		6.2		U	GAM	U		3.6	U	-		
Americium 241	U		0.13	1.0	U	GAM	U		0.045	U	-		

Modu Tank TSD

QC-DUP#1 35253

DUPLICATES

Page 1

SUMMARY DATA SECTION

Page 9

Lab id <u>TMANC</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>08/12/00</u>

TMA / RICHMOND
SAMPLE DELIVERY GROUP H0925

R007128-01

BOY0L9

DATA SHEET

SDG <u>7446</u>	Client/Case no <u>Hanford</u>	SDG <u>H0925</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>TRC-SBB-207925</u>	
Lab sample id <u>R007128-01</u>	Client sample id <u>BOY0L9</u>	
Dept sample id <u>7446-001</u>	Location/Matrix <u>200 East</u>	<u>SOLID</u>
Received <u>07/26/00</u>	Collected <u>07/17/00 10:10</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-044-01</u>	<u>B00-044</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	4.24	2.9	3.5	10	J	80A
Gross Beta	12587-47-2	22.1	4.7	5.8	15		80B
Potassium 40	13966-00-2	10.4	1.5	0.32			GAM
Cobalt 60	10198-40-0	0.120	0.036	0.036	0.050		GAM
Cesium 137	10045-97-3	0.244	0.036	0.035	0.10		GAM
Radium 226	13982-63-3	0.256	0.064	0.054	0.10		GAM
Radium 228	15262-20-1	0.412	0.14	0.13	0.20		GAM
Europium 152	14683-23-9	U		0.067	0.10	U	GAM
Europium 154	15585-10-1	U		0.085	0.10	U	GAM
Europium 155	14391-16-3	U		0.047	0.10	U	GAM
Thorium 228	14274-82-9	0.484	0.060	0.054			GAM
Thorium 232	TH-232	0.412	0.14	0.13			GAM
Uranium 235	15117-96-1	U		0.090		U	GAM
Uranium 238	U-238	U		3.6		U	GAM
Americium 241	14596-10-2	U		0.045	1.0	U	GAM

Modu Tank TSD

Lab id <u>TMANC</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>08/12/00</u>

TMA/RICHMOND
SAMPLE DELIVERY GROUP H0925

Test 80A Matrix SOLID
SDG 7446
Contact Melissa C. Mannion

METHOD SUMMARY
GROSS ALPHA IN SOIL
GAS PROPORTIONAL COUNTING

Client Hanford
Contract TRC-SBB-207925
Contract SDG H0925

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	Gross Alpha
Preparation batch 6929-068					
BOY0L9	R007128-01	80		7446-001	4.24 J
BLK (QC ID=35252)	R007128-03	80		7446-003	U
LCS (QC ID=35251)	R007128-02	80		7446-002	ok
Duplicate (R007128-01)	R007128-04	80		7446-004	ok J

Nominal values and limits from method RDLs (pCi/g) 10
Modu Tank TSD

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- YZED	DETECTOR
Preparation batch 6929-068 2σ prep error 20.0 † Reference Lab Notebook 6929 pg. 068															
BOY0L9	R007128-01	80		3.5	0.100			54	100				21	08/03/00	08/07 GRB-113
BLK (QC ID=35252)	R007128-03	80		3.6	0.100			21	100					08/03/00	08/07 GRB-115
LCS (QC ID=35251)	R007128-02	80		2.8	0.100			19	100					08/03/00	08/07 GRB-114
Duplicate (R007128-01)	R007128-04	80		3.6	0.100			57	100				21	08/03/00	08/07 GRB-116
	(QC ID=35253)														

Nominal values and limits from method 10 0.100 5-250 100 180

PROCEDURES	REFERENCE	EPA900.0
CP-060	Soil Preparation, rev 2	
CP-070	Soil Dissolution, < 1.0g Aliquot, rev 3	
CP-170	Soil Preparation for Direct Gross Alpha and Gross Beta Counting, rev 2	

AVERAGES ± 2 SD MDA 3.4 ± 0.77
FOR 4 SAMPLES RESIDUE 38 ± 41

METHOD SUMMARIES

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SUMMARY DATA SECTION

Page 11

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 08/12/00

TMA/RICHMOND
SAMPLE DELIVERY GROUP H0925

Test 80B Matrix SOLID
SDG 7446
Contact Melissa C. Mannion

METHOD SUMMARY
GROSS BETA IN SOIL
GAS PROPORTIONAL COUNTING

Client Hanford
Contract TRC-SBB-207925
Contract SDG H0925

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	Gross Beta
Preparation batch 6929-068					
BOY0L9	R007128-01	80		7446-001	22.1
BLK (QC ID=35252)	R007128-03	80		7446-003	U
LCS (QC ID=35251)	R007128-02	80		7446-002	ok
Duplicate (R007128-01)	R007128-04	80		7446-004	ok

Nominal values and limits from method RDLs (pCi/g) 15
Modu Tank TSD

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- PREPARED	YZED	DETECTOR	
Preparation batch 6929-068 2σ prep error 15.0 % Reference Lab Notebook 6929 pg. 068																	
BOY0L9	R007128-01	80		5.8	0.100			54	100				21	08/03/00	08/07	GRB-113	
BLK (QC ID=35252)	R007128-03	80		5.5	0.100			21	100					08/03/00	08/07	GRB-115	
LCS (QC ID=35251)	R007128-02	80		6.3	0.100			19	100					08/03/00	08/07	GRB-114	
Duplicate (R007128-01)	R007128-04	80		7.2	0.100			57	100					21	08/03/00	08/07	GRB-116
	(QC ID=35253)																
Nominal values and limits from method				15	0.100			5-250	100				180				

PROCEDURES	REFERENCE	EPA900.0
CP-060	Soil Preparation, rev 2	
CP-070	Soil Dissolution, < 1.0g Aliquot, rev 3	
CP-170	Soil Preparation for Direct Gross Alpha and Gross Beta Counting, rev 2	

AVERAGES ± 2 SD	MDA <u>6.2</u> ± <u>1.5</u>
FOR 4 SAMPLES	RESIDUE <u>38</u> ± <u>41</u>

TMA/RICHMOND
 SAMPLE DELIVERY GROUP H0925

METHOD SUMMARY
 GAMMA SCAN
 GAMMA SPECTROSCOPY

Test GAM Matrix SOLID
 SDG 7446
 Contact Melissa C. Mannion

Client Hanford
 Contract TRC-SBB-207925
 Contract SDG H0925

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	Cobalt 60	Cesium 137
Preparation batch 6929-068					
BOY0L9	R007128-01	7446-001		0.120	0.244
BLK (QC ID=35252)	R007128-03	7446-003		U	U
LCS (QC ID=35251)	R007128-02	7446-002		ok	ok
Duplicate (R007128-01)	R007128-04	7446-004		ok	ok

Nominal values and limits from method RDLs (pCi/g) 0.050 0.10
 Modu Tank TSD

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- pCi/g	MAX MDA	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- PREPARED	YZED	DETECTOR
Preparation batch 6929-068 2σ prep error 15.0 % Reference Lab Notebook 6929 pg. 068																
BOY0L9	R007128-01		<u>0.067</u>	190						1069			15	07/31/00	08/01	JR,07,00
BLK (QC ID=35252)	R007128-03		<u>0.080</u>	190						494				07/31/00	08/02	JR,01,00
LCS (QC ID=35251)	R007128-02		0.017	190						1038				07/31/00	08/01	JR,04,00
Duplicate (R007128-01)	R007128-04		<u>0.11</u>	190						494			16	07/31/00	08/02	JR,03,00
			(QC ID=35253)													

Nominal values and limits from method 0.050 190 100 180

PROCEDURES	REFERENCE	GAMMAHI
CP-060		Soil Preparation, rev 2
CP-100		Ge(Li) Preparation for Commercial Samples, rev 2

AVERAGES ± 2 SD	MDA <u>0.068 ± 0.078</u>
FOR 4 SAMPLES	YIELD _____ ± _____

Lab id TMANC
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CMS
 Version 3.06
 Report date 08/12/00

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-044-01		Page 1 of 1	
Collector Fahlberg / <i>D. Bone / Johnson</i>		Company Contact W Thompson		Telephone No. 372-9597		Project Coordinator TRENT, SJ		Price Code 9K	
Project Designation Modu Tank TSD		Sampling Location 200 East		<i>H0925 (7446)</i>		SAF No. B00-044		Air Quality <input type="checkbox"/>	
Ice Chest No. <i>ERC 99-010 10FI</i>		Field Logbook No. EL 1381-3		COA HGWLTM3510		Method of Shipment Fed-EX			
Shipped To <i>TMA/REGRA 7-17-00</i>		Offsite Property No. <i>A000268</i>		Bill of Lading/Air Bill No. <i>42357953 7515</i>					

POSSIBLE SAMPLE HAZARDS/REMARKS <i>None</i>	Preservation	None	None	None	Cool 4C	Cool 4C	Cool 4C	None	None
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1
	Volume	60mL	60mL	60mL	120mL	120mL	120mL	120mL	120mL

SPECIAL HANDLING AND/OR STORAGE	Gross Alpha; Gross Beta	ICP Metals - 6010A (TAL)	Mercury 7471 - (CV)	PCBs - (TC); Pesticides - 8081	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	See Item (1) in Special Instructions.	Metals by ICP (TCL) - 1311/7470; Mercury (TCL) - 1311/7470
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Sample No.	Matrix *	Sample Date	Sample Time						
<i>BOY0L9</i>	<i>Other Solid</i>	<i>7-17-00</i>	<i>1016</i>	<i>X</i>					<i>X</i>

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS Analyze for Solids Only. Not Water.				Matrix * S=Soil SS=Soilment SO=Solid S=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Time W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By <i>R. Johnson</i>	Date/Time <i>7/17/00</i>	Received By <i>R. Johnson</i>	Date/Time <i>7/17/00 1515</i>	FAXED <i>7/26/00</i>				
Relinquished By <i>R. Johnson</i>	Date/Time <i>7-26-00 1430</i>	Received By <i>FEKEY</i>	Date/Time <i>7/25/00</i>					
Relinquished By <i>Fed. EXPRESS</i>	Date/Time <i>7/26/00 9:30</i>	Received By <i>E. Ferguson</i>	Date/Time <i>7/26/00 9:30 AM</i>					
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

SAMPLE RECEIPT CHECKLIST

SAMPLE RECEIPT

Client: BECHTEL HANFORD INC. Date/Time received 7/26/00 9:30 AM

CoC No. B00-044-01

Container I.D. No. ERC99-010 Requested TAT (Days) 15 P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [] No [] N/A []

2. Custody seals on shipping container dated & signed? Yes [] No [] N/A []

3. Custody seals on sample containers intact? Yes [] No [] N/A []

4. Custody seals on sample containers dated & signed? Yes [] No [] N/A []

5. Cooler Temperature: _____ Packing material is: Wet [] Dry []

6. Number of samples in shipping container: 1/12

7. Number of containers per sample: 2 (Or see CoC _____)

8. Paperwork agrees with samples? Yes [] No []

9. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels []

10. Samples are: In good condition [] Leaking [] Broken Container [] Missing []

11. Describe any anomalies: _____

13. Was P.M. notified of any anomalies? Yes [] No [] Date _____

14. Received by E. Segura Date: 7/26/00 Time: 9:30 AM

LOGIN

TNU W.O. No. _____ Group No. _____ Client W.O. No. _____

PROGRAM MANAGER

Sample holding times exceeded? Yes [] No []

Client Notified: Name _____ Date/time _____