

0054378



Recra LabNet - Lionville Laboratory  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD B00-068 H1074

DATE RECEIVED: 10/04/00

RFW LOT # :0010L856

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

B105W3

SILVER, TOTAL	001	S	99L1658	09/27/00	10/28/00	10/30/00
SILVER, TOTAL	001 REP	S	99L1658	09/27/00	10/28/00	10/30/00
SILVER, TOTAL	001 MS	S	99L1658	09/27/00	10/28/00	10/30/00
ARSENIC, TOTAL	001	S	99L1658	09/27/00	10/28/00	10/30/00
ARSENIC, TOTAL	001 REP	S	99L1658	09/27/00	10/28/00	10/30/00
ARSENIC, TOTAL	001 MS	S	99L1658	09/27/00	10/28/00	10/30/00
BARIUM, TOTAL	001	S	99L1658	09/27/00	10/28/00	10/30/00
BARIUM, TOTAL	001 REP	S	99L1658	09/27/00	10/28/00	10/30/00
BARIUM, TOTAL	001 MS	S	99L1658	09/27/00	10/28/00	10/30/00
CADMIUM, TOTAL	001	S	99L1658	09/27/00	10/28/00	10/30/00
CADMIUM, TOTAL	001 REP	S	99L1658	09/27/00	10/28/00	10/30/00
CADMIUM, TOTAL	001 MS	S	99L1658	09/27/00	10/28/00	10/30/00
CHROMIUM, TOTAL	001	S	99L1658	09/27/00	10/28/00	10/30/00
CHROMIUM, TOTAL	001 REP	S	99L1658	09/27/00	10/28/00	10/30/00
CHROMIUM, TOTAL	001 MS	S	99L1658	09/27/00	10/28/00	10/30/00
MERCURY, TOTAL	001	S	00C0344	09/27/00	10/19/00	10/23/00
MERCURY, TOTAL	001 REP	S	00C0344	09/27/00	10/19/00	10/23/00
MERCURY, TOTAL	001 MS	S	00C0344	09/27/00	10/19/00	10/23/00
LEAD, TOTAL	001	S	99L1658	09/27/00	10/28/00	10/30/00
LEAD, TOTAL	001 REP	S	99L1658	09/27/00	10/28/00	10/30/00
LEAD, TOTAL	001 MS	S	99L1658	09/27/00	10/28/00	10/30/00
SELENIUM, TOTAL	001	S	99L1658	09/27/00	10/28/00	10/30/00
SELENIUM, TOTAL	001 REP	S	99L1658	09/27/00	10/28/00	10/30/00
SELENIUM, TOTAL	001 MS	S	99L1658	09/27/00	10/28/00	10/30/00

LAB QC:



EDMC

SILVER LABORATORY	LC1 BS	S	99L1658	N/A	10/28/00	10/30/00
SILVER, TOTAL	MB1	S	99L1658	N/A	10/28/00	10/30/00
ARSENIC LABORATORY	LC1 BS	S	99L1658	N/A	10/28/00	10/30/00
ARSENIC, TOTAL	MB1	S	99L1658	N/A	10/28/00	10/30/00
BARIUM LABORATORY	LC1 BS	S	99L1658	N/A	10/28/00	10/30/00
BARIUM, TOTAL	MB1	S	99L1658	N/A	10/28/00	10/30/00
CADMIUM LABORATORY	LC1 BS	S	99L1658	N/A	10/28/00	10/30/00
CADMIUM, TOTAL	MB1	S	99L1658	N/A	10/28/00	10/30/00

001

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INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD B00-068 H1074

DATE RECEIVED: 10/04/00

RFW LOT # :0010L856

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM LABORATORY	LC1 BS	S	99L1658	N/A	10/28/00	10/30/00
CHROMIUM, TOTAL	MB1	S	99L1658	N/A	10/28/00	10/30/00
MERCURY LABORATORY	LC1 BS	S	00C0344	N/A	10/19/00	10/20/00
MERCURY, TOTAL	MB1	S	00C0344	N/A	10/19/00	10/20/00
LEAD LABORATORY	LC1 BS	S	99L1658	N/A	10/28/00	10/30/00
LEAD, TOTAL	MB1	S	99L1658	N/A	10/28/00	10/30/00
SELENIUM LABORATORY	LC1 BS	S	99L1658	N/A	10/28/00	10/30/00
SELENIUM, TOTAL	MB1	S	99L1658	N/A	10/28/00	10/30/00



**Recra LabNet Philadelphia  
Analytical Report**

**Client:** TNU-HANFORD B00-068  
**RFW#:** 0010L856  
**SDG/SAF#:** H1074/B00-068

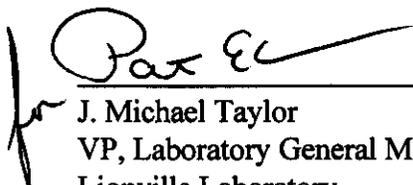
**W.O.#:** 10985-001-001-9999-00  
**Date Received:** 10-04-00

**METALS CASE NARRATIVE**

1. This narrative covers the analyses of 1 soil sample.
2. The sample were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. The cooler temperature has been recorded on the Chain of Custody.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to form 7.
10. 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.

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 **13** pages.

12. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
13. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
\_\_\_\_\_  
J. Michael Taylor  
VP, Laboratory General Manager  
Lionville Laboratory

11-20-00

Date

gmb/m10-856



# METALS METHOD GLOSSARY

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

Recra Lot#: 0010L85U

Leaching Procedure: 1310 1311 1312 Other: \_\_\_\_\_

CLP Metals    Digestion and    Analysis Methods:   ILM03.0   ILM04.0

Metals Digestion Methods:   3005A   3010A   3015   3020A 3050B   3051   200.7   SS17  
  Other: \_\_\_\_\_

## Metals Analysis Methods

	SW846	EPA	STD MTD	EPA OSWR	USATHAMA
Aluminum	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Antimony	<u>  </u> 6010B <u>  </u> 7041 <sup>5</sup>	<u>  </u> 200.7	<u>  </u> 204.2		<u>  </u> 99
Arsenic	<input checked="" type="checkbox"/> 6010B <u>  </u> 7060A <sup>5</sup>	<u>  </u> 200.7	<u>  </u> 206.2	<u>  </u> 3113B	<u>  </u> 99
Barium	<input checked="" type="checkbox"/> 6010B	<u>  </u> 200.7			<u>  </u> 99
Beryllium	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Bismuth	<u>  </u> 6010B <sup>1</sup>	<u>  </u> 200.7 <sup>1</sup>		<u>  </u> 1620	<u>  </u> 99
Boron	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Cadmium	<input checked="" type="checkbox"/> 6010B <u>  </u> 7131A <sup>5</sup>	<u>  </u> 200.7	<u>  </u> 213.2		<u>  </u> 99
Calcium	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Chromium	<input checked="" type="checkbox"/> 6010B <u>  </u> 7191 <sup>5</sup>	<u>  </u> 200.7	<u>  </u> 218.2		<u>  </u> SS17
Cobalt	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Copper	<u>  </u> 6010B <u>  </u> 7211 <sup>5</sup>	<u>  </u> 200.7	<u>  </u> 220.2		<u>  </u> 99
Iron	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Lead	<input checked="" type="checkbox"/> 6010B <u>  </u> 7421 <sup>5</sup>	<u>  </u> 200.7	<u>  </u> 239.2	<u>  </u> 3113B	<u>  </u> 99
Lithium	<u>  </u> 6010B <u>  </u> 7430 <sup>4</sup>	<u>  </u> 200.7		<u>  </u> 1620	<u>  </u> 99
Magnesium	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Manganese	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Mercury	<u>  </u> 7470A <sup>3</sup> <input checked="" type="checkbox"/> 7471A <sup>3</sup>	<u>  </u> 245.1 <sup>2</sup>	<u>  </u> 245.5 <sup>2</sup>		<u>  </u> 99
Molybdenum	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Nickel	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Potassium	<u>  </u> 6010B <u>  </u> 7610 <sup>4</sup>	<u>  </u> 200.7	<u>  </u> 258.1 <sup>4</sup>		<u>  </u> 99
Rare Earths	<u>  </u> 6010B <sup>1</sup>	<u>  </u> 200.7 <sup>1</sup>		<u>  </u> 1620	<u>  </u> 99
Selenium	<input checked="" type="checkbox"/> 6010B <u>  </u> 7740 <sup>5</sup>	<u>  </u> 200.7	<u>  </u> 270.2	<u>  </u> 3113B	<u>  </u> 99
Silicon	<u>  </u> 6010B <sup>1</sup>	<u>  </u> 200.7		<u>  </u> 1620	<u>  </u> 99
Silica	<u>  </u> 6010B	<u>  </u> 200.7		<u>  </u> 1620	<u>  </u> 99
Silver	<input checked="" type="checkbox"/> 6010B <u>  </u> 7761 <sup>5</sup>	<u>  </u> 200.7	<u>  </u> 272.2		<u>  </u> 99
Sodium	<u>  </u> 6010B <u>  </u> 7770 <sup>4</sup>	<u>  </u> 200.7	<u>  </u> 273.1 <sup>4</sup>		<u>  </u> 99
Strontium	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Thallium	<u>  </u> 6010B <u>  </u> 7841 <sup>5</sup>	<u>  </u> 200.7	<u>  </u> 279.2	<u>  </u> 200.9	<u>  </u> 99
Tin	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Titanium	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Uranium	<u>  </u> 6010B <sup>1</sup>	<u>  </u> 200.7 <sup>1</sup>		<u>  </u> 1620	<u>  </u> 99
Vanadium	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Zinc	<u>  </u> 6010B	<u>  </u> 200.7			<u>  </u> 99
Zirconium	<u>  </u> 6010B <sup>1</sup>	<u>  </u> 200.7 <sup>1</sup>		<u>  </u> 1620	<u>  </u> 99

Other: \_\_\_\_\_

Method: \_\_\_\_\_

# METHOD REFERENCES AND DATA QUALIFIERS

## DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- \* = Indicates that the original sample result is greater than 4x the spike amount added.

## ABBREVIATIONS

- MB = Method or Preparation Blank.  
MS = Matrix Spike.  
MSD = Matrix Spike Duplicate.  
REP = Sample Replicate  
LCS = Laboratory Control Sample.  
NC = Not calculated.

## ANALYTICAL METAL METHODS

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

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

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 11/15/00

CLIENT: TNUHANFORD B00-068 H1074

RECRA LOT #: 0010L856

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B105W3	Silver, Total	0.11	u MG/KG	0.11	1.0
		Arsenic, Total	4.9	MG/KG	0.35	1.0
		Barium, Total	76.3	MG/KG	0.02	1.0
		Cadmium, Total	0.03	u MG/KG	0.03	1.0
		Chromium, Total	9.0	MG/KG	0.09	1.0
		Mercury, Total	0.02	u MG/KG	0.02	1.0
		Lead, Total	4.4	MG/KG	0.21	1.0
		Selenium, Total	0.44	u MG/KG	0.44	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/15/00

CLIENT: TNUHANFORD B00-068 H1074

RECRA LOT #: 0010L856

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
BLANK1	99L1658-MB1	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	0.34 u	MG/KG	0.34	1.0
		Barium, Total	0.03	MG/KG	0.02	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	0.09 u	MG/KG	0.09	1.0
		Lead, Total	0.21 u	MG/KG	0.21	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0
BLANK1	00C0344-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

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INORGANICS ACCURACY REPORT 11/15/00

CLIENT: TNUHANFORD B00-068 H1074  
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0010L856

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	B105W3	Silver, Total	4.9	0.11u	5.1	96.1	1.0
		Arsenic, Total	193	4.9	204	92.4	1.0
		Barium, Total	264	76.3	204	92.0	1.0
		Cadmium, Total	4.7	0.03u	5.1	92.2	1.0
		Chromium, Total	29.5	9.0	20.4	100.5	1.0
		Mercury, Total	0.16	0.02u	0.16	99.4	1.0
		Lead, Total	51.5	4.4	50.9	92.5	1.0
		Selenium, Total	191	0.44u	204	93.5	1.0

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INORGANICS PRECISION REPORT 11/15/00

CLIENT: TNUHANFORD B00-068 H1074  
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0010L856

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE	RPD	
-001REP	B105W3	Silver, Total	0.11u	0.11u	NC	1.0
		Arsenic, Total	4.9	4.7	4.2	1.0
		Barium, Total	76.3	86.9	13.0	1.0
		Cadmium, Total	0.03u	0.03u	NC	1.0
		Chromium, Total	9.0	9.1	1.1	1.0
		Mercury, Total	0.02u	0.02u	NC	1.0
		Lead, Total	4.4	4.0	9.5	1.0
		Selenium, Total	0.44u	0.44u	NC	1.0

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INORGANICS LABORATORY CONTROL STANDARDS REPORT 11/15/00

CLIENT: TNUHANFORD B00-068 H1074  
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0010L856

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RECOV
			SAMPLE	AMOUNT		
LCS1	99L1658-LC1	Silver, LCS	50.4	50.0	MG/KG	100.8
		Arsenic, LCS	969	1000	MG/KG	96.9
		Barium, LCS	498	500	MG/KG	99.7
		Cadmium, LCS	25.0	25.0	MG/KG	100
		Chromium, LCS	50.7	50.0	MG/KG	101.4
		Lead, LCS	247	250	MG/KG	98.8
		Selenium, LCS	976	1000	MG/KG	97.6
LCS1	00C0344-LC1	Mercury, LCS	0.66	0.7	MG/KG	92.1



Collector FAHLBERG Company Contact Dave Weeks Telephone No. 372-9524 Project Coordinator TRENT, SJ Price Code 8L Data Turnaround 21 Days

Project Designation 200 Area Groundwater Well Drilling Waste Designation for Sampling Location 200 West SAF No. B00-068 Air Quality

Ice Chest No. 3MI-354 (202) Field Logbook No. EL 1516 1517 9-21-00 COA XL0008LMHC Method of Shipment Fed EX

Shipped To TMA/ECRA Offsite Property No. A000345 Bill of Lading/Air Bill No. 42357953-9562

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

SAMPLE ANALYSIS	IC Anions - 300.0 (Nitrate); Sulfides - 9030; Total Cyanide - 9040	Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) (m-Cresol)	VOA - 8260A (TCL)	ICP Metals - 6010A (Superttrace); Mercury - 7471 - (CV)	pH (Soil) - 9045							
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Sample No.	Matrix *	Sample Date	Sample Time									
B105W3	SOIL	9-27-00	1030	X	X	X	X	X				Box V96

CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By	Date/Time	Received By	Date/Time	Samples stored in Ref # 2B at the 3728 Shipping Facility on 1/22/00 Collector not available to relinquish samples on 10/3/00 for shipment.				TCT 10/3/00			
R. Keller	9-27-00	Ref Z-B	9-21-00								
Relinquished By	Date/Time	Received By	Date/Time								
R. Keller	10/3/00	R. Thoren	10/3/00								
Relinquished By	Date/Time	Received By	Date/Time								
R. Keller	10/3/00	F. Jones									
Relinquished By	Date/Time	Received By	Date/Time								
R. Keller	10/4/00 0915	D. Smith	10/4/00 0915								
Relinquished By	Date/Time	Received By	Date/Time								

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

013



Recra LabNet - Lionville Laboratory  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNUHANFORD B00-068 H1074

DATE RECEIVED: 10/04/00

RFW LOT # :0010L856

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B105W3						
% SOLIDS	001	S	00L&S162	09/27/00	10/13/00	10/14/00
% SOLIDS	001 REP	S	00L&S162	09/27/00	10/13/00	10/14/00
NITRATE BY IC	001	S	00LDC063	09/27/00	10/19/00	10/19/00
NITRATE BY IC	001 REP	S	00LDC063	09/27/00	10/19/00	10/19/00
NITRATE BY IC	001 MS	S	00LDC063	09/27/00	10/19/00	10/19/00
TOTAL CYANIDE	001	S	00LC100	09/27/00	10/09/00	10/09/00
TOTAL CYANIDE	001 REP	S	00LC100	09/27/00	10/09/00	10/09/00
TOTAL CYANIDE	001 MS	S	00LC100	09/27/00	10/09/00	10/09/00
PH	001	S	00LPH084	09/27/00	10/11/00	10/11/00
PH	001 REP	S	00LPH084	09/27/00	10/11/00	10/11/00
SULFIDE	001	S	00LSD037	09/27/00	10/10/00	10/10/00
SULFIDE	001 REP	S	00LSD037	09/27/00	10/10/00	10/10/00
SULFIDE	001 MS	S	00LSD037	09/27/00	10/10/00	10/10/00

LAB QC:

NITRATE BY IC	MB1	S	00LDC063	N/A	10/19/00	10/19/00
NITRATE BY IC	MB1 BS	S	00LDC063	N/A	10/19/00	10/19/00
TOTAL CYANIDE	LCS L	S	00LC100	N/A	10/09/00	10/09/00
TOTAL CYANIDE	LCS L	S	00LC100	N/A	10/09/00	10/09/00
TOTAL CYANIDE	MB1	S	00LC100	N/A	10/09/00	10/09/00
SULFIDE	MB1	S	00LSD037	N/A	10/10/00	10/10/00
SULFIDE	MB1 BS	S	00LSD037	N/A	10/10/00	10/10/00



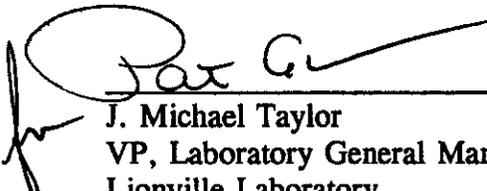
**Recra LabNet Philadelphia  
Analytical Report**

**Client : TNU-HANFORD B00-068 H1074**  
**RFW# : 0010L856**

**W.O. # : 10985-001-001-9999-00**  
**Date Logged: 10-04-00**

**INORGANIC CASE NARRATIVE**

1. This narrative covers the analyses of 1 soil sample.
2. The sample was prepared and analyzed in accordance with the methods indicated on the attached glossary.
3. Sample holding times as required by the method and/or the contract with the exception of Sulfide.
4. The cooler temperature was recorded on the chain-of-custody.
5. The method blanks were within method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits.
7. The matrix spike recoveries were within the 75-125% control limits.
8. The replicate analyses were within the 20% Relative Percent Difference (RPD) control limit.
9. Results for solid samples are reported on a dry weight basis.
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.

  
\_\_\_\_\_  
J. Michael Taylor  
VP, Laboratory General Manager  
Lionville Laboratory

11-15-00  
Date

njp\110-856

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

Recra LabNet Philadelphia

WET CHEMISTRY  
METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	<u>SW846</u>	<u>OTHER</u>
% Ash	___ D2216-80		
% Moisture	___ D2216-80		___ ILMO4.0 (e)
% Solids	✓ ___ D2216-80		___ ILMO4.0 (e)
% Volatile Solids	___ D2216-80		
ASTM Extraction in Water	___ D3987-81/85		
BTU	___ D240-87		
CEC		___ 9081	___ c
Chromium VI		___ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		___ 1110(mod) ___ 9045C	
Cyanide, Total		✓ ___ 9010B/9014	___ ILMO4.0 (e)
Cyanide, Reactive		___ Section 7.3/9014	
Halides, Extractable Organic		___ 9020B	___ EPA 600/4/84-008
Halides, Total		___ 9020B	___ EPA 600/4/84-008
EP Toxicity		___ 1310A	
Flash Point		___ 1010	
Ignitability		___ 1010	
Oil & Grease		___ 9071A	
Carbon, Total Organic		___ 9060	___ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	___ D240-87(mod)	___ 5050	
Petroleum Hydrocarbons, Total Recoverable		___ 9071	___ EPA 418.1
pH, Soil		✓ ___ 9045C	
Sulfide, Reactive		___ Section 7.3/9030B	
Sulfide		✓ ___ 9030B(mod)	
Specific Gravity	___ D1429-76C/	___ D5057-90	
Sulfur, Total		___ 9056	
Synthetic Preparation Leach		___ 1312	
Paint Filter		9095A	
Other: Nitrate		Method: EPA 300.0(mod)	
Other:		Method:	

# Recra LabNet Philadelphia

## 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

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

### ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
  - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
  - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
  - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
  - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
  - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
  - f. Code of Federal Regulations.

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 11/14/00

CLIENT: TNUHANFORD B00-068 H1074  
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0010L856

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B105W3	% Solids	92.6	%	0.01	1.0
		Nitrate by IC	4.1	MG/KG	1.3	1.0
		Cyanide, Total	0.54 u	MG/KG	0.54	1.0
		pH	9.4	SOIL PH	0.01	1.0
		Sulfide	40.3 u	MG/KG	40.3	1.0

Recra LabNet - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/14/00

CLIENT: TNUHANFORD B00-068 H1074  
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0010L856

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	00LDC063-MB1	Nitrate by IC	1.2	u MG/KG	1.2	1.0
BLANK1	00LC100-MB1	Cyanide, Total	0.50	u MG/KG	0.50	1.0
BLANK10	00LSD037-MB1	Sulfide	40.0	u MG/KG	40.0	1.0

Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 11/14/00

CLIENT: TNUHANFORD B00-068 H1074  
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0010L856

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	B105W3	Nitrate by IC	31	4.1	27	98.0	1.0
		Cyanide, Total	5.1	0.54u	5.2	97.6	1.0
		Sulfide	407	4.0	469	85.9	1.0
BLANK10	00LDC063-MB1	Nitrate by IC	25	1.2 u	25	99.8	1.0
BLANK10	00LSD037-MB1	Sulfide	390	40.0 u	439	89.0	1.0

Recre LabNet - Lionville

INORGANICS PRECISION REPORT 11/14/00

CLIENT: TNUHANFORD B00-068 H1074  
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0010L856

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE	RPD	
-001REP	B105W3	‡ Solids	92.6	92.5	0.18	1.0
		Nitrate by IC	4.1	3.9	5.0	1.0
		Cyanide, Total	0.54u	0.51u	NC	1.0
		pH	9.4	9.6	2.0	1.0
		Sulfide	40.3 u	41.4 u	NC	1.0

Recra LabNet - Lionville

INORGANICS LABORATORY CONTROL STANDARDS REPORT 11/14/00

CLIENT: TNUHANFORD B00-068 H1074  
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0010L856

SAMPLE	SITE ID	ANALYTE	SPIKED		UNITS	%RECOV
			SAMPLE	AMOUNT		
LCSS1	00LC100-LCS1	Cyanide, Total LCS	2.1	2.0	MG/KG	104.0
LCSS2	00LC100-LCS2	Cyanide, Total LCS	10	10	MG/KG	101.5



Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B00-068-67		Page 1 of 1		
Collector FAHLBERG/		Company Contact Dave Weeks		Telephone No. 372-9524		Project Coordinator TRENT, SJ		Price Code 8L		Data Turnaround 21 Days	
Project Designation 200 Area Groundwater Well Drilling Waste Designation for		Sampling Location 200 West		SAF No. B00-068		Air Quality <input type="checkbox"/>					
Ice Chest No. SMI-354 (2002)		Field Logbook No. EL 1516 1517 RF 9-27-00		COA XL0008LMHC		Method of Shipment Fed EX					
Shipped To TMA/RECRA		Offsite Property No. A000345			Bill of Lading/Air Bill No. 42357953-9562						
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	None	Cool 4C	Cool 4C	None	None		
				Type of Container	aG	aG	aG	aG	aG		
				No. of Container(s)	1	1	1	1	1		
				Volume	120mL	250mL	250mL	250mL	250mL		
SAMPLE ANALYSIS				IC Anions - 300.0 (Nitrate); Sulfides - 9030; Total Cyanide - 9010	Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) (m-Cresol)	VOA - 8260A (TCL)	ICP Metals - 6010A (Supertrace); Mercury - 7471 - (CV)	pH (Soil) - 9045			
Sample No.	Matrix *	Sample Date	Sample Time								
B105W3	SOIL	9-27-00	1030	K	K	K	K	K		Box VPR6	
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By R. Farrell / R. Fahlerg		Date/Time 9-27-00 1230		Received By Rof Z-B		Date/Time 9-27-00 1230		<p>Samples stored in Ref. # 2B at the 3728 Shipping Facility on 1/22/00</p> <p>Collector not available to relinquish samples on 10/3/00 for shipment.</p> <p>TJT 10/3/00</p>			
Relinquished By R. Farrell		Date/Time 10/3/00 1000		Received By R. Thoren		Date/Time 10/3/00 1000					
Relinquished By R. Thoren		Date/Time 10/3/00 1000		Received By F. Edwards		Date/Time					
Relinquished By F. Edwards		Date/Time 10/4/00 0915		Received By D. Smith		Date/Time 10/4/00 0915					
Relinquished By		Date/Time		Received By		Date/Time					
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					



Chemical and Environmental Measurement Information  
Recra LabNet Philadelphia  
Analytical Report



Client: TNU-HANFORD B00-068  
RFW #: 0010L856  
SDG/SAF #: H1074/B00-068

W.O. #: 10985-001-001-000-00  
Date Received: 10-04-2000

**SEMIVOLATILE**

One (1) soil sample was collected on 09-27-2000.

The sample and its associated QC samples were extracted on 10-05-2000 and analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 10-10,11,23-2000.

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 sample was extracted and analyzed within required holding times.
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. "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  
V.P./Laboratory General Manager  
Lionville Laboratory

11-15-00  
Date

som\group\data\bna\tnu-hanford-10-856.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 11 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: 10/27/00 18:38

RFW Batch Number: 0010L856

Client: TNU-HANFORD B00-068

Work Order: 10985001001

Page: 1a

Sample Information	Cust ID:	B105W3	B105W3	B105W3	SBLKCR	SBLKCR BS
RFW#:	001	001 MS	001 MSD	00LE1269-MB1	00LE1269-MB1	
Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
D.F.:	1.00	1.00	1.00	1.00	1.00	
Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	
Nitrobenzene-d5	75 %	74 %	75 %	77 %	82 %	
Surrogate 2-Fluorobiphenyl	75 %	71 %	70 %	82 %	87 %	
Recovery Terphenyl-d14	94 %	83 %	77 %	93 %	100 %	
Phenol-d5	81 %	75 %	68 %	75 %	84 %	
2-Fluorophenol	89 %	88 %	84 %	83 %	89 %	
2,4,6-Tribromophenol	75 %	81 %	74 %	79 %	95 %	
-----fl-----fl-----fl-----fl-----fl-----fl-----fl						
Phenol	360 U	73 %	64 %	330 U	85 %	
bis(2-Chloroethyl) ether	360 U	360 U	360 U	330 U	330 U	
2-Chlorophenol	360 U	80 %	69 %	330 U	84 %	
1,3-Dichlorobenzene	360 U	360 U	360 U	330 U	330 U	
1,4-Dichlorobenzene	360 U	62 %	60 %	330 U	71 %	
1,2-Dichlorobenzene	360 U	360 U	360 U	330 U	330 U	
2-Methylphenol	360 U	360 U	360 U	330 U	330 U	
2,2'-oxybis(1-Chloropropane)	360 U	360 U	360 U	330 U	330 U	
3- and/or 4-Methylphenol	360 U	360 U	360 U	330 U	330 U	
N-Nitroso-di-n-propylamine	360 U	60 %	51 %	330 U	74 %	
Hexachloroethane	360 U	360 U	360 U	330 U	330 U	
Nitrobenzene	360 U	360 U	360 U	330 U	330 U	
Isophorone	360 U	360 U	360 U	330 U	330 U	
2-Nitrophenol	360 U	360 U	360 U	330 U	330 U	
2,4-Dimethylphenol	360 U	360 U	360 U	330 U	330 U	
bis(2-Chloroethoxy)methane	360 U	360 U	360 U	330 U	330 U	
2,4-Dichlorophenol	360 U	360 U	360 U	330 U	330 U	
1,2,4-Trichlorobenzene	360 U	68 %	64 %	330 U	75 %	
Naphthalene	360 U	360 U	360 U	330 U	330 U	
4-Chloroaniline	360 U	360 U	360 U	330 U	330 U	
Hexachlorobutadiene	360 U	360 U	360 U	330 U	330 U	
4-Chloro-3-methylphenol	360 U	73 %	66 %	330 U	84 %	
2-Methylnaphthalene	360 U	360 U	360 U	330 U	330 U	
Hexachlorocyclopentadiene	360 U	360 U	360 U	330 U	330 U	
2,4,6-Trichlorophenol	360 U	360 U	360 U	330 U	330 U	
2,4,5-Trichlorophenol	900 U	900 U	900 U	830 U	830 U	

\*= Outside of EPA CLP QC limits.

	Cust ID:	B105W3	B105W3	B105W3	SBLKCR	SBLKCR BS
	RFW#:	001	001 MS	001 MSD	00LE1269-MB1	00LE1269-MB1
2-Chloronaphthalene		360 U	360 U	360 U	330 U	330 U
2-Nitroaniline		900 U	900 U	900 U	830 U	830 U
Dimethylphthalate		360 U	360 U	360 U	330 U	330 U
Acenaphthylene		360 U	360 U	360 U	330 U	330 U
2,6-Dinitrotoluene		360 U	360 U	360 U	330 U	330 U
3-Nitroaniline		900 U	900 U	900 U	830 U	830 U
Acenaphthene		360 U	68 %	65 %	330 U	76 %
2,4-Dinitrophenol		900 U	900 U	900 U	830 U	830 U
4-Nitrophenol		900 U	54 %	57 %	830 U	81 %
Dibenzofuran		360 U	360 U	360 U	330 U	330 U
2,4-Dinitrotoluene		360 U	71 %	65 %	330 U	80 %
Diethylphthalate		360 U	360 U	360 U	330 U	330 U
4-Chlorophenyl-phenylether		360 U	360 U	360 U	330 U	330 U
Fluorene		360 U	360 U	360 U	330 U	330 U
4-Nitroaniline		900 U	900 U	900 U	830 U	830 U
4,6-Dinitro-2-methylphenol		900 U	900 U	900 U	830 U	830 U
N-Nitrosodiphenylamine (1)		360 U	360 U	360 U	330 U	330 U
4-Bromophenyl-phenylether		360 U	360 U	360 U	330 U	330 U
Hexachlorobenzene		360 U	360 U	360 U	330 U	330 U
Pentachlorophenol		900 U	44 %	47 %	830 U	59 %
Phenanthrene		360 U	360 U	360 U	330 U	330 U
Anthracene		360 U	360 U	360 U	330 U	330 U
Carbazole		360 U	360 U	360 U	330 U	330 U
Di-n-butylphthalate		360 U	360 U	360 U	330 U	330 U
Fluoranthene		360 U	360 U	360 U	330 U	330 U
Pyrene		360 U	73 %	64 %	330 U	83 %
Butylbenzylphthalate		360 U	360 U	360 U	330 U	330 U
3,3'-Dichlorobenzidine		360 U	360 U	360 U	330 U	330 U
Benzo(a)anthracene		360 U	360 U	360 U	330 U	330 U
Chrysene		360 U	360 U	360 U	330 U	330 U
bis(2-Ethylhexyl)phthalate		360 U	360 U	61 J	330 U	330 U
Di-n-octyl phthalate		360 U	360 U	360 U	330 U	330 U
Benzo(b)fluoranthene		360 U	360 U	360 U	330 U	330 U
Benzo(k)fluoranthene		360 U	360 U	360 U	330 U	330 U
Benzo(a)pyrene		360 U	360 U	360 U	330 U	330 U
Indeno(1,2,3-cd)pyrene		360 U	360 U	360 U	330 U	330 U
Dibenz(a,h)anthracene		360 U	360 U	360 U	330 U	330 U
Benzo(g,h,i)perylene		360 U	360 U	360 U	330 U	330 U

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

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B105W3

Lab Name: Recra.LabNet                      Work Order: 10985001001

Client: TNUHANFORD B00-068 H1074

Matrix: (soil/water) SOIL    Lab Sample ID: 0010L856-001

Sample wt/vol: 30.1                      (g/mL) G    Lab File ID: A102309

Level:        (low/med) LOW    Date Received: 10/04/00

% Moisture: 7        decanted: (Y/N)       Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL)    Date Analyzed: 10/23/00

Injection Volume: 2.0 (uL)    Dilution Factor: 1.00

GPC Cleanup: (Y/N) N    pH:       

Number TICs found: 4    CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 4652-44-2	DIETHYLCARBAMIC ACID, METHYES	6.34	200	JN
2. 111-46-6	2,2'-OXYBISETHANOL	6.63	100	JN
3.	UNKNOWN	7.80	100	J
4.	UNKNOWN	24.20	100	J

6

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKCR

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNUHANFORD B00-068 H1074

Matrix: (soil/water) SOIL Lab Sample ID: 00LE1269-MB1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D101013

Level: (low/med) LOW Date Received: 10/05/00

% Moisture:      decanted: (Y/N)      Date Extracted: 10/05/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/10/00

Injection Volume: 2.0 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH:     

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

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

Recra LabNet - Lionville Laboratory  
BNA ANALYTICAL DATA PACKAGE FOR  
TNU-HANFORD B00-068

DATE RECEIVED: 10/04/00

RFW LOT # :0010L856

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B105W3	001	S	00LE1269	09/27/00	10/05/00	10/23/00
B105W3	001 MS	S	00LE1269	09/27/00	10/05/00	10/23/00
B105W3	001 MSD	S	00LE1269	09/27/00	10/05/00	10/23/00

LAB QC:

SBLKCR	MB1	S	00LE1269	N/A	10/05/00	10/10/00
SBLKCR	MB1 BS	S	00LE1269	N/A	10/05/00	10/11/00

8









**Client:** TNU-HANFORD B00-068  
**RFW #:** 0010L856  
**SDG/SAF #:** H1074/B00-068

**W.O. #:** 10985-001-001-9999-00  
**Date Received:** 10-04-2000

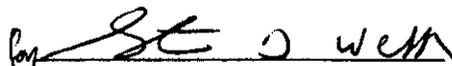
### GC/MS VOLATILE

One (1) soil sample was collected on 09-27-2000.

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 10-09-2000.

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 not 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 blank contained the common laboratory contaminants Methylene Chloride and Acetone at levels less than 2x 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  
Vice President  
Philadelphia Analytical Laboratory

11-03-00  
Date

som\group\data\voa\tnu-hanford-10-856.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 8 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.





Cust ID:	B105W3	B105W3	B105W3	VBLKVE	VBLKVE BS
RFW#:	001	001 MS	001 MSD	00LVH436-MB1	00LVH436-MB1

Chlorobenzene	6 U	104 %	105 %	5 U	102 %
Ethylbenzene	6 U	6 U	6 U	5 U	5 U
Styrene	6 U	6 U	6 U	5 U	5 U
Xylene (total)	6 U	6 U	6 U	5 U	5 U

\*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory  
VOA ANALYTICAL DATA PACKAGE FOR  
TNU-HANFORD B00-068

DATE RECEIVED: 10/04/00

RFW LOT # :0010L856

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B105W3	001	S	00LVH436	09/27/00	N/A	10/09/00
B105W3	001 MS	S	00LVH436	09/27/00	N/A	10/09/00
B105W3	001 MSD	S	00LVH436	09/27/00	N/A	10/09/00

LAB QC:

VBLKVE	MB1	S	00LVH436	N/A	N/A	10/09/00
VBLKVE	MB1 BS	S	00LVH436	N/A	N/A	10/09/00



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Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B00-068-67	Page 1 of 1							
Collector FAHLBERG/		Company Contact Dave Weeks		Telephone No. 372-9524		Project Coordinator TRENT, SJ		Price Code 8L	Data Turnaround 21 Days						
Project Designation 200 Area Groundwater Well Drilling Waste Designation for		Sampling Location 200 West		SAF No. B00-068		Air Quality <input type="checkbox"/>									
Ice Chest No. 8ml-354 (202)		Field Logbook No. EL 1516 1517 <i>RF 9.27.00</i>		COA XL0008LMHC		Method of Shipment Fed EX									
Shipped To TMA/ECRA		Offsite Property No. A000345		Bill of Lading/Air Bill No. 42357953-9562											
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	None	Cool 4C	Cool 4C	None	None						
				Type of Container	aG	aG	aG	aG	aG						
				No. of Container(s)	1	1	1	1	1						
				Volume	120mL	250mL	250mL	250mL	250mL						
SAMPLE ANALYSIS				IC Anions - 300.0 (Nitrate); Sulfides - 9030; Total Cyanide - 9010	Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) (m-Cresol)	VOA - 8260A (TCL)	ICP Metals - 6010A (Supernatant); Mercury - 7471 - (CV)	pH (Soil) - 9045							
Sample No.	Matrix *	Sample Date	Sample Time												
B105W3	SOIL	9-27-00	1030	K	K	K	K	K					Box VPK		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *							
Relinquished By <i>R. Kelly</i>		Date/Time 1230		Received By <i>Stored in</i>		Date/Time 1230		<p>Samples stored in Ref # <i>2B</i> at the 3728 Shipping Facility on <i>1/22/00</i> Collector not available to relinquish samples on <i>10/3/00</i> for shipment.</p> <p><i>TJT</i> <i>10/3/00</i></p>				<ul style="list-style-type: none"> <li>S - Soil</li> <li>SE - Sediment</li> <li>SO - Solid</li> <li>S - Sludge</li> <li>W - Water</li> <li>O - Oil</li> <li>A - Air</li> <li>DS - Dross Solids</li> <li>DL - Dross Liquids</li> <li>T - Tissue</li> <li>W1 - Wipe</li> <li>L - Liquid</li> <li>V - Vegetation</li> <li>X - Other</li> </ul>			
Relinquished By <i>Removed from Ref 23 3728</i>		Date/Time 1000		Received By <i>R. Thoren</i>		Date/Time 1000									
Relinquished By <i>R. Thoren</i>		Date/Time 1000		Received By <i>F. Jones</i>		Date/Time									
Relinquished By <i>Head Ex</i>		Date/Time 10/11/00 0915		Received By <i>D. Spait</i>		Date/Time 10/11/00 0915									
Relinquished By		Date/Time		Received By		Date/Time									
LABORATORY SECTION		Received By		Title				Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time							