



**Recra LabNet Philadelphia Analytical Report**

**Client :** TNU-HANFORD B00-068  
**RFW# :** 0009L586  
**SDG# :** H1023  
**SAF# :** B00-068

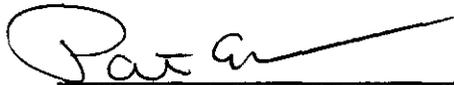
**W.O. # :** 10985-001-001-9999-00  
**Date Received:** 09-13-00



**EDMC**

**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 contract were met 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  
 njp\109-586

10-26-00  
Date

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	
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.

L-WI-034/D-6/99

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 10/17/00

CLIENT: TNU-HANFORD B00-068  
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0009L586

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	BOYW03	% Solids	75.4	%	0.01	1.0
		Nitrate by IC	1.7	u MG/KG	1.7	1.0
		Cyanide, Total	0.58	u MG/KG	0.58	1.0
		pH	9.6	SOIL PH	0.01	1.0
		Sulfide	50.9	u MG/KG	50.9	1.0

Recra LabNet - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/17/00

CLIENT: TNU-HANFORD B00-068  
 WORK ORDER: 10985-001-001-9999-00

RBCRA LOT #: 0009L586

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	00LCC060-MB1	Nitrate by IC	1.2	u MG/KG	1.2	1.0
BLANK1	00LCH87-MB1	Cyanide, Total	0.50	u MG/KG	0.50	1.0
BLANK10	00LSD034-MB1	Sulfide	1.0	u MG/KG	1.0	1.0

Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 10/17/00

CLIENT: TNU-HANFORD B00-068  
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0009L586

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	BOYW03	Nitrate by IC	37	1.7 u	33	113.1	1.0
		Cyanide, Total	5.4	0.58u	5.7	95.7	1.0
		Sulfide	500	0.0	552	90.5	1.0
BLANK10	00LCC060-MB1	Nitrate by IC	25	1.2 u	25	100.2	1.0
BLANK10	00LSD034-MB1	Sulfide	9.2	1.0 u	10.5	87.6	1.0

Recra LabNet - Lionville

INORGANICS PRECISION REPORT 10/17/00

CLIENT: TNU-HANFORD B00-068  
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0009L586

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE	RPD	
-001REP	BOYW03	% Solids	75.4	72.8	3.6	1.0
		Nitrate by IC	1.7 u	1.7 u	NC	1.0
		Cyanide, Total	0.58u	0.63u	NC	1.0
		pH	9.6	9.5	0.9	1.0
		Sulfide	50.9 u	49.9 u	NC	1.0

Recra LabNet - Lionville

INORGANICS LABORATORY CONTROL STANDARDS REPORT 10/17/00

CLIENT: TNU-HANFORD B00-068  
WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0009L586

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RECOV
			SAMPLE	AMOUNT		
LCSS1	00LCH87-LCS1	Cyanide, Total LCS	1.9	2.0	MG/KG	96.7
LCSS2	00LCH87-LCS2	Cyanide, Total LCS	10	10	MG/KG	103.6

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

DATE RECEIVED: 09/13/00

RFW LOT # :0009L586

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BOYW03						
% SOLIDS	001	S	00L&S148	09/08/00	09/21/00	09/22/00
% SOLIDS	001 REP	S	00L&S148	09/08/00	09/21/00	09/22/00
NITRATE BY IC	001	S	00LCC060	09/08/00	10/12/00	10/12/00
NITRATE BY IC	001 REP	S	00LCC060	09/08/00	10/12/00	10/12/00
NITRATE BY IC	001 MS	S	00LCC060	09/08/00	10/12/00	10/12/00
TOTAL CYANIDE	001	S	00LCH87	09/08/00	09/20/00	09/20/00
TOTAL CYANIDE	001 REP	S	00LCH87	09/08/00	09/20/00	09/20/00
TOTAL CYANIDE	001 MS	S	00LCH87	09/08/00	09/20/00	09/20/00
PH	001	S	00LPH078	09/08/00	09/14/00	09/14/00
PH	001 REP	S	00LPH078	09/08/00	09/14/00	09/14/00
SULFIDE	001	S	00LSD034	09/08/00	09/19/00	09/19/00
SULFIDE	001 REP	S	00LSD034	09/08/00	09/19/00	09/19/00
SULFIDE	001 MS	S	00LSD034	09/08/00	09/19/00	09/19/00

LAB QC:

NITRATE BY IC	MB1	S	00LCC060	N/A	10/12/00	10/12/00
NITRATE BY IC	MB1 BS	S	00LCC060	N/A	10/12/00	10/12/00
TOTAL CYANIDE	LCS L	S	00LCH87	N/A	09/20/00	09/20/00
TOTAL CYANIDE	LCS L	S	00LCH87	N/A	09/20/00	09/20/00
TOTAL CYANIDE	MB1	S	00LCH87	N/A	09/20/00	09/20/00
SULFIDE	MB1	S	00LSD034	N/A	09/19/00	09/19/00
SULFIDE	MB1 BS	S	00LSD034	N/A	09/19/00	09/19/00



Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B00-068-44	Page 1 of 1							
Collector Johansen		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 Area Groundwater Drilling			SAF No. B00-068		Air Quality <input type="checkbox"/>									
Ice Chest No. ERC 99-023 (10FI)		Field Logbook No. EL 1516		COA XL0008LMHC		Method of Shipment Federal Express										
Shipped To TMA/RECRA RECCA		Offsite Property No. A000311			BHI of Lading/Air BHI No. 42357953-8923											
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	None	None	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						
				Volume	1L	120mL	250mL	250mL	250mL	250mL						
SAMPLE ANALYSIS				See item (1) in Special Instructions	IC Anions - 300.0 (Nitrate)	Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) (m-Crucol)	VOA - 8260A (TCL)	ICP Metals - 6010A (Supernate); Mercury - 7471 - (CV)	pH (Soil) - 9045							
Sample No.	Matrix *	Sample Date	Sample Time													
BOYW03	SOIL	9-8-00	0900		X	X	X	X	X					B2Y VR3		
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *				
Relinquished By T. F. Walker		Date/Time 9-8-00		Received By Stoned in		Date/Time 9-8-00		(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Radium-226, Radium-228, Uranium-235, Uranium-238); Isotopic Plutonium; Isotopic Thorium (Thorium-228, Thorium-232); Americium-241; Iodine-129; Technetium  Samples stored in Ref. #2B at the 3728 Shipping Facility on 9/8/00 Collector not available to relinquish samples on 9/12/00 for shipment. TCT 9-12-00				S=Soil SE=Saltwater SO=Solid S=Sludge W=Water O=Oil A=Air DS=Dry Solid DL=Dry Liquid T=Tissue W=Wipe L=Liquid V=Vegetation X=Other				
Relinquished By R. Thoren		Date/Time 9-12-00		Received By R. Thoren		Date/Time 9-12-00										
Relinquished By R. Thoren		Date/Time 9-12-00		Received By F. E. Walker		Date/Time 9-12-00										
Relinquished By F. E. Walker		Date/Time 9-13-00		Received By D. Walker		Date/Time 9-13-00										
Relinquished By		Date/Time		Received By		Date/Time										
LABORATORY SECTION		Received By		Title				Date/Time								
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time								



## 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: BOYW03 BOYW03 BOYW03 VBLKPW VBLKPW BS

RFW#: 001 001 MS 001 MSD 00LVX252-MB1 00LVX252-MB1

Chlorobenzene	6 U	106 %	105 %	5 U	104 %
Ethylbenzene	6 U	7 U	6 U	5 U	5 U
Styrene	6 U	7 U	6 U	5 U	5 U
Xylene (total)	6 U	7 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: 09/13/00

RFW LOT # :0009L586

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BOYW03	001	S	00LVX252	09/08/00	N/A	09/20/00
BOYW03	00I MS	S	00LVX252	09/08/00	N/A	09/20/00
BOYW03	001 MSD	S	00LVX252	09/08/00	N/A	09/20/00

LAB QC:

VBLKPW	MB1	S	00LVX252	N/A	N/A	09/20/00
VBLKPW	MB1 BS	S	00LVX252	N/A	N/A	09/20/00

RECRA LabNet Use Only

# Custody Transfer Record/Lab Work Request Page 1 of 1



00091586

**ALL**

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

① Bm Personal

Client: <b>TNY - Hanford 800-068</b>	Refrigerator #	414	4	4	4					
Est. Final Proj. Sampling Date	#Type Container	Liquid								
Project # <b>10985-001-001-9999-00</b>		Solid	1A6	1A6	1A6	1A6	1A6	1A6		
Project Contact/Phone #	Volume	Liquid								
RECRA Project Manager: <b>OS</b>		Solid	250	250	250	250	250	250		
OC Spec: <b>Del STD TAT 21 day</b>	Preservatives									
Date Rec'd: <b>9-13-00</b>	ANALYSES REQUESTED →	ORGANIC					INORG			
Date Due: <b>10-4-00</b>		VOA	BNA	Pest/PCB	Herb	Metal	CN			

MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	RECRA LabNet Use Only															
			MS	MSD				HC	MS	IPX	ICUTU	ISED											
			MS	MSD				HC	MS	IPX	ICUTU	ISED											
	001	BOYW03	✓	✓	S	9/8/00	0900	✓	✓														

Special Instructions: **Saf 800-068**

DATE/REVISIONS:  
 1. 9-16-00 1. OMSX corrected OMSH added  
 2. CN + SED Added

RECRA LabNet Use Only	
Samples were: 1) Shipped <input checked="" type="checkbox"/> or Hand Delivered <input type="checkbox"/>	COC Tape was: 1) Present on Outer Package <input checked="" type="checkbox"/> or N
Airbill # <b>42357953</b>	2) Unbroken on Outer Package <input checked="" type="checkbox"/> or N
2) Ambient on <input checked="" type="checkbox"/> or N	3) Present on Sample <input checked="" type="checkbox"/> or N
3) Received in Good Condition <input checked="" type="checkbox"/> or N	4) Unbroken on Sample <input checked="" type="checkbox"/> or N
4) Labels Indicate Property Preserved <input checked="" type="checkbox"/> or N	COC Record Present Upon Sample Rec't <input checked="" type="checkbox"/> or N
5) Received Within Holding Time <input checked="" type="checkbox"/> or N	Cooler Temp. <b>2.8</b> °C

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
Fedex	OS	9/13/00	0915	COMPOSITE WASTE	ORIGINAL		

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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B00-068-44	Page 1 of 1
Collector Johansen	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 Area Groundwater Drilling		SAF No. B00-068		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 99-023 (10FI)	Field Logbook No. EL 1516	COA XL0008LMHC		Method of Shipment Federal Express					
Shipped To TMA/RECRA RECCA	Offsite Property No. A000311			Bill of Lading/Air Bill No. 2357953-8923					
POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	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		
	Special Handling and/or Storage	Volume	1L	120mL	250mL	250mL	250mL	250mL	
SAMPLE ANALYSIS		See item (1) in Special Instructions.	IC Anions - 300.0 (Nitrate)	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						
BOYV03	SOIL	9-8-00	0900	X	X	X	X	X	Boy VP3
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By J. Kelly Date/Time 9-8-00		Received By Stoned Date/Time 9-8-00		(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Radium-226, Radium-228, Uranium-235, Uranium-238); Isotopic Plutonium; Isotopic Thorium (Thorium-228, Thorium-232); Americium-241; Iodine-129; Technetium-99m  Samples stored in Ref. #2B at the 3728 Shipping Facility on 9/8/00 Collector not available to relinquish samples on 9/12/00 for shipment.				S - Soil SE - Sediment SO - Solid S - Sludge W - Water O - Oil A - Air DG - Drum Solids DL - Drum Liquids T - Tissue WJ - Wipe L - Liquid V - Vegetation X - Other	
Relinquished By R. Thoren Date/Time 9-12-00		Received By R. Thoren Date/Time 9-12-00							
Relinquished By R. Thoren Date/Time 9-12-00		Received By F. D. E. W. Date/Time 9-12-00							
Relinquished By F. D. E. W. Date/Time 9-13-00		Received By D. Walker Date/Time 9-13-00							
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	



**Client:** TNU-HANFORD B00-068  
**RFW #:** 0009L586  
**SDG/SAF #:** H1023/B00-068

**W.O. #:** 10985-001-001-0928  
**Date Received:** 09-13-2000

**SEMIVOLATILE**

One (1) soil sample was collected on 09-08-2000.

The sample and its associated QC samples were extracted on 09-15-2000 and analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 10-03-2000.

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 blank spike recoveries were within EPA QC limits.
6. All matrix 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  
Vice President  
Philadelphia Analytical Laboratory

10-19-00  
Date

som\group\data\bna\tnu-hanford-09-586.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

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- 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.
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- 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:	BOYW03	BOYW03	BOYW03	SBLKAR	SBLKAR BS
	RFW#:	001	001 MS	001 MSD	00LE1156-MB1	00LE1156-MB1
2-Chloronaphthalene		440 U	440 U	440 U	330 U	330 U
2-Nitroaniline		1100 U	1100 U	1100 U	830 U	830 U
Dimethylphthalate		440 U	440 U	440 U	330 U	330 U
Acenaphthylene		440 U	440 U	440 U	330 U	330 U
2,6-Dinitrotoluene		440 U	440 U	440 U	330 U	330 U
3-Nitroaniline		1100 U	1100 U	1100 U	830 U	830 U
Acenaphthene		440 U	60 %	55 %	330 U	71 %
2,4-Dinitrophenol		1100 U	1100 U	1100 U	830 U	830 U
4-Nitrophenol		1100 U	75 %	70 %	830 U	83 %
Dibenzofuran		440 U	440 U	440 U	330 U	330 U
2,4-Dinitrotoluene		440 U	57 %	55 %	330 U	69 %
Diethylphthalate		440 U	440 U	440 U	330 U	330 U
4-Chlorophenyl-phenylether		440 U	440 U	440 U	330 U	330 U
Fluorene		440 U	440 U	440 U	330 U	330 U
4-Nitroaniline		1100 U	1100 U	1100 U	830 U	830 U
4,6-Dinitro-2-methylphenol		1100 U	1100 U	1100 U	830 U	830 U
N-Nitrosodiphenylamine (1)		440 U	440 U	440 U	330 U	330 U
4-Bromophenyl-phenylether		440 U	440 U	440 U	330 U	330 U
Hexachlorobenzene		440 U	440 U	440 U	330 U	330 U
Pentachlorophenol		1100 U	49 %	54 %	830 U	70 %
Phenanthrene		440 U	440 U	440 U	330 U	330 U
Anthracene		440 U	440 U	440 U	330 U	330 U
Carbazole		440 U	440 U	440 U	330 U	330 U
Di-n-butylphthalate		440 U	440 U	440 U	330 U	330 U
Fluoranthene		440 U	440 U	440 U	330 U	330 U
Pyrene		440 U	62 %	58 %	330 U	79 %
Butylbenzylphthalate		440 U	440 U	440 U	330 U	330 U
3,3'-Dichlorobenzidine		440 U	440 U	440 U	330 U	330 U
Benzo(a)anthracene		440 U	440 U	440 U	330 U	330 U
Chrysene		440 U	440 U	440 U	330 U	330 U
bis(2-Ethylhexyl)phthalate		440 U	440 U	440 U	330 U	330 U
Di-n-octyl phthalate		440 U	440 U	440 U	330 U	330 U
Benzo(b)fluoranthene		440 U	440 U	440 U	330 U	330 U
Benzo(k)fluoranthene		440 U	440 U	440 U	330 U	330 U
Benzo(a)pyrene		440 U	440 U	440 U	330 U	330 U
Indeno(1,2,3-cd)pyrene		440 U	440 U	440 U	330 U	330 U
Dibenz(a,h)anthracene		440 U	440 U	440 U	330 U	330 U
Benzo(g,h,i)perylene		440 U	440 U	440 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.

BOYW03

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B00-068

Matrix: (soil/water) SOIL

Lab Sample ID: 0009L586-001

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

Lab File ID: D100306

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 25 decanted: (Y/N)

Date Extracted: 09/15/00

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 10/03/00

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 3

(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	7.25	800	JAB
2.	ALKANE	25.04	100	J
3.	ALKANE	25.18	100	J

1F  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKAR

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B00-068

Matrix: (soil/water) SOIL Lab Sample ID: 00LE1156-MB1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D100304

Level: (low/med) LOW Date Received: 09/15/00

% Moisture:        decanted: (Y/N)    Date Extracted: 09/15/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/03/00

Injection Volume: 2.0 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 1 CONCENTRATION UNITS:  
 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	7.24	500	J

7

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

DATE RECEIVED: 09/13/00

RFW LOT # :0009L586

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BOYW03	001	S	00LE1156	09/08/00	09/15/00	10/03/00
BOYW03	001 MS	S	00LE1156	09/08/00	09/15/00	10/03/00
BOYW03	001 MSD	S	00LE1156	09/08/00	09/15/00	10/03/00

LAB QC:

SBLKAR	MB1	S	00LE1156	N/A	09/15/00	10/03/00
SBLKAR	MB1 BS	S	00LE1156	N/A	09/15/00	10/03/00



Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B00-068-44		Page 1 of 1				
Collector Johansen		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 Area Groundwater Drilling		SAF No. B00-068		Air Quality <input type="checkbox"/>								
Ice Chest No. ERC 99-023 (IOFI)		Field Logbook No. EL 1516		COA XL0008LMHC		Method of Shipment Federal Express								
Shipped To TMA/RECRA RECLA		Offsite Property No. A000311		Bill of Lading/Air Bill No. 212357953-8923										
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	None	None	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				
				Volume	1L	120mL	250mL	250mL	250mL	250mL				
SAMPLE ANALYSIS				See item (1) in Special Instructions	IC Ambient - 300.0 (Nitrate)	Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) (no-Cool)	VOA - 8260A (TCL)	ICP Metals - 6010A (Separate); Mercury - 7471 - (CV)	pH (Soil) - 9045					
Sample No.	Matrix *	Sample Date	Sample Time											
BOYW03	SOIL	9-8-00	0900		X	X	X	X	X		Boy VP3			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *						
Relinquished By J. Kelly		Date/Time 9-8-00		Received By Stoned in		Date/Time 9-8-00		(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Radium-226, Radium-228, Uranium-235, Uranium-238); Isotopic Plutonium; Isotopic Thorium (Thorium-228, Thorium-232); Americium-241; Iodine-129; Techn  Samples stored in Ref. # 2B at the 3728 Shipping Facility on 9/18/00 Collector not available to relinquish samples on 9/12/00 for shipment. TPT 9/12/00				S-Soil SE-Sediment SO-Solid S-Sludge W-Water O-Oil A-Air DS-Drum Solids DL-Drum Liquids T-Tissue WI-Wipe L-Liquid V-Vegetation X-Other		
Relinquished By R. Thoren		Date/Time 9-12-00		Received By R. Thoren		Date/Time 9-12-00 0900								
Relinquished By R. Thoren		Date/Time 9-12-00		Received By F. D. E. W.		Date/Time								
Relinquished By FedEx		Date/Time 9-13-00 0915		Received By D. Walker		Date/Time 9-13-00 0915								
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 B00-068  
**RFW#:** 0009L586  
**SDG/SAF#:** H1023/B00-068

**W.O.#:** 10985-001-001-9999-00  
**Date Received:** 09-13-00

**METALS CASE NARRATIVE**

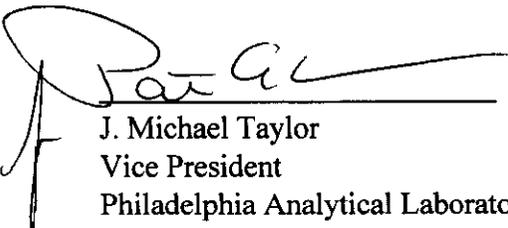
1. This narrative covers the analyses of 1 soil sample.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. The cooler temperature has been recorded on the Chain of Custody.
5. All 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 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. The matrix spike (MS) recoveries for 2 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

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.

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

<u>Sample ID</u>	<u>Element</u>	<u>PDS</u> <u>Concentration (ppb)</u>	<u>PDS</u> <u>% Recovery</u>
B0YW03	Chromium	100	100.3
B0YW03	Silver	100	99.7

12. The duplicate analyses for 2 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
J. Michael Taylor  
Vice President  
Philadelphia Analytical Laboratory

10-23-00  
Date

gmb/m09-586



# METALS METHOD GLOSSARY

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

Recra Lot#: 00092586

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	<input checked="" type="checkbox"/> 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	<input checked="" type="checkbox"/> 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	<input checked="" type="checkbox"/> 7470A <sup>3</sup> <u>  </u> 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	<input checked="" type="checkbox"/> 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 Préparation 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 10/10/00

CLIENT: TNU-HANFORD B00-068

RECRA LOT #: 0009L586

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	BOYW03	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	1.6	MG/KG	0.38	1.0
		Barium, Total	56.4	MG/KG	0.02	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	14.6	MG/KG	0.10	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	3.5	MG/KG	0.23	1.0
		Selenium, Total	0.48 u	MG/KG	0.48	1.0

Recra LabNet - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/10/00

CLIENT: TNU-HANFORD B00-068  
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0009L586

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	99L1571-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	00C0320-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 10/10/00

CLIENT: TNU-HANFORD B00-068  
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 0009L586

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	BOYW03	Silver, Total	4.1	0.12u	5.6	73.2	1.0
		Arsenic, Total	212	1.6	223	94.7	1.0
		Barium, Total	280	56.4	223	100.6	1.0
		Cadmium, Total	5.4	0.03u	5.6	96.4	1.0
		Chromium, Total	47.3	14.6	22.3	146.6	1.0
		Mercury, Total	0.20	0.02u	0.20	101.5	1.0
		Lead, Total	56.5	3.5	55.7	95.2	1.0
		Selenium, Total	207	0.48u	223	92.9	1.0

Recra LabNet - Lionville

INORGANICS PRECISION REPORT 10/10/00

CLIENT: TNU-HANFORD B00-068

RECRA LOT #: 0009L586

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

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION
			RESULT	REPLICATE	RPD	FACTOR(REP)
-001REP	BOYW03	Silver, Total	0.12u	0.12u	NC	1.0
		Arsenic, Total	1.6	1.3	20.7	1.0
		Barium, Total	56.4	61.5	8.7	1.0
		Cadmium, Total	0.03u	0.03u	NC	1.0
		Chromium, Total	14.6	18.0	20.9	1.0
		Mercury, Total	0.02u	0.02u	NC	1.0
		Lead, Total	3.5	3.2	9.0	1.0
		Selenium, Total	0.48u	0.48u	NC	1.0

Recra LabNet - Lionville

INORGANICS LABORATORY CONTROL STANDARDS REPORT 10/10/00

CLIENT: TNU-RANFORD B00-068

RECRA LOT #: 0009L586

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

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RECOV
			SAMPLE	AMOUNT		
LCS1	99L1571-LC1	Silver, LCS	49.1	50.0	MG/KG	98.2
		Arsenic, LCS	954	1000	MG/KG	95.4
		Barium, LCS	494	500	MG/KG	98.7
		Cadmium, LCS	24.6	25.0	MG/KG	98.4
		Chromium, LCS	49.8	50.0	MG/KG	99.6
		Lead, LCS	244	250	MG/KG	97.6
		Selenium, LCS	923	1000	MG/KG	92.3
LCS1	00C0320-LC1	Mercury, LCS	0.80	0.7	MG/KG	112.8

Regra LabNet - Lionville Laboratory  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNU-HANFORD B00-068

DATE RECEIVED: 09/13/00

RFW LOT # :0009L586

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BOYW03						
SILVER, TOTAL	001	S	99L1571	09/08/00	09/21/00	09/21/00
SILVER, TOTAL	001 REP	S	99L1571	09/08/00	09/21/00	09/21/00
SILVER, TOTAL	001 MS	S	99L1571	09/08/00	09/21/00	09/21/00
ARSENIC, TOTAL	001	S	99L1571	09/08/00	09/21/00	09/21/00
ARSENIC, TOTAL	001 REP	S	99L1571	09/08/00	09/21/00	09/21/00
ARSENIC, TOTAL	001 MS	S	99L1571	09/08/00	09/21/00	09/21/00
BARIUM, TOTAL	001	S	99L1571	09/08/00	09/21/00	09/21/00
BARIUM, TOTAL	001 REP	S	99L1571	09/08/00	09/21/00	09/21/00
BARIUM, TOTAL	001 MS	S	99L1571	09/08/00	09/21/00	09/21/00
CADMIUM, TOTAL	001	S	99L1571	09/08/00	09/21/00	09/21/00
CADMIUM, TOTAL	001 REP	S	99L1571	09/08/00	09/21/00	09/21/00
CADMIUM, TOTAL	001 MS	S	99L1571	09/08/00	09/21/00	09/21/00
CHROMIUM, TOTAL	001	S	99L1571	09/08/00	09/21/00	09/21/00
CHROMIUM, TOTAL	001 REP	S	99L1571	09/08/00	09/21/00	09/21/00
CHROMIUM, TOTAL	001 MS	S	99L1571	09/08/00	09/21/00	09/21/00
MERCURY, TOTAL	001	S	00C0320	09/08/00	10/04/00	10/04/00
MERCURY, TOTAL	001 REP	S	00C0320	09/08/00	10/04/00	10/04/00
MERCURY, TOTAL	001 MS	S	00C0320	09/08/00	10/04/00	10/04/00
LEAD, TOTAL	001	S	99L1571	09/08/00	09/21/00	09/21/00
LEAD, TOTAL	001 REP	S	99L1571	09/08/00	09/21/00	09/21/00
LEAD, TOTAL	001 MS	S	99L1571	09/08/00	09/21/00	09/21/00
SELENIUM, TOTAL	001	S	99L1571	09/08/00	09/21/00	09/21/00
SELENIUM, TOTAL	001 REP	S	99L1571	09/08/00	09/21/00	09/21/00
SELENIUM, TOTAL	001 MS	S	99L1571	09/08/00	09/21/00	09/21/00

LAB QC:

SILVER LABORATORY	LC1 BS	S	99L1571	N/A	09/21/00	09/21/00
SILVER, TOTAL	MB1	S	99L1571	N/A	09/21/00	09/21/00
ARSENIC LABORATORY	LC1 BS	S	99L1571	N/A	09/21/00	09/21/00
ARSENIC, TOTAL	MB1	S	99L1571	N/A	09/21/00	09/21/00
BARIUM LABORATORY	LC1 BS	S	99L1571	N/A	09/21/00	09/21/00
BARIUM, TOTAL	MB1	S	99L1571	N/A	09/21/00	09/21/00
CADMIUM LABORATORY	LC1 BS	S	99L1571	N/A	09/21/00	09/21/00
CADMIUM, TOTAL	MB1	S	99L1571	N/A	09/21/00	09/21/00

Recre LabNet - Lionville Laboratory  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNU-HANFORD B00-068

DATE RECEIVED: 09/13/00

RFW LOT # :0009L586

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM LABORATORY	LC1 BS	S	99L1571	N/A	09/21/00	09/21/00
CHROMIUM, TOTAL	MB1	S	99L1571	N/A	09/21/00	09/21/00
MERCURY LABORATORY	LC1 BS	S	00C0320	N/A	10/04/00	10/04/00
MERCURY, TOTAL	MB1	S	00C0320	N/A	10/04/00	10/04/00
LEAD LABORATORY	LC1 BS	S	99L1571	N/A	09/21/00	09/21/00
LEAD, TOTAL	MB1	S	99L1571	N/A	09/21/00	09/21/00
SELENIUM LABORATORY	LC1 BS	S	99L1571	N/A	09/21/00	09/21/00
SELENIUM, TOTAL	MB1	S	99L1571	N/A	09/21/00	09/21/00



Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B00-068-44		Page 1 of 1				
Collector Johansen		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 Area Groundwater Drilling				SAF No. B00-068		Air Quality <input type="checkbox"/>						
Ice Chest No. ERC 99-023 (10FI)		Field Logbook No. EL 1516		COA XL0008LMHC		Method of Shipment Federal Express								
Shipped To TMA/RECRA RECLA		Offsite Property No. A000311				Bill of Lading/Air BHI No. 42357953-8923								
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	None	None	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				
				Volume	1L	120mL	250mL	250mL	250mL	250mL				
SAMPLE ANALYSIS				See Item (1) in Special Instructions	IC Anions - 300.0 (Nitrate)	Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) (in-Cross)	VOA - 8260A (TCL)	ICP Metals - 6018A (Supertrace); Mercury - 7471 (CV)	pH (Soil) - 9045					
Sample No.	Matrix *	Sample Date	Sample Time											
BOYW03	SOIL	9-8-00	0900	X	X	X	X	X			BOY VPS			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *		
Relinquished By T. Weeks		Date/Time 9-8-00		Received By Stoned		Date/Time 9-8-00		(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Radium-226, Radium-228, Uranium-235, Uranium-238); Isotopic Plutonium; Isotopic Thorium (Thorium-228, Thorium-232); Americium-241; Iodine-129; Techn  Samples stored in Ref. #2B at the 3728 Shipping Facility on 9/18/00 Collector not available to relinquish samples on 9/12/00 for shipment. TRT 9-12-00				S=Soil SE=Settlement SO=Solid S=Sludge W=Water O=Oil A=Air DS=Drawn Solids DL=Drawn Liquids T=Trace W=Wipe L=Liquid V=Vegetation X=Other		
Relinquished By R. Thoren		Date/Time 9-12-00		Received By R. Thoren		Date/Time 9-12-00								
Relinquished By R. Thoren		Date/Time 9-12-00		Received By F. DeW		Date/Time								
Relinquished By FedEx		Date/Time 9-15-00		Received By D. Walker		Date/Time 9-13-00								
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						

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