0065816

SAF-B05-025
ERDF Stockpile Sampling – Soil
FINAL DATA PACKAGE

NO DISTRIBUTION REQUIRED

RECEIVED
JUL 27 2005
EDMC

COMMENTS:

SDG _H3165__ SAF-B05-026

Rad only X Chem only Rad & Chem

X Complete Partial

Sample Location/Waste Site: ERDF Stockpile Area

LIONVILLE LABORATORY INC.

16 June 2005

RECEIVED JUN 2005

Joan Kessner
Bechtel-Hanford, Inc.
3190 Washington Way
MSIN H9-03
Richland, WA 99352

Subject: Contract No. 630
Analytical Data Package

Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0505L449
SDG #	H3165
SAF #	B05-025
Date Received	5-11-05
# Samples	5
Matrix	Soil
Volatiles	
Semivolatiles	
Pest/PCB	X
PAH	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager
r:\group\pm\orlette\tnu-hanford\data\b_ltrs.doc

208 Welsh Pool Road • Exton, PA 19341- 1313 • (610) 280-3000 • Fax (610) 280-3041

RECEIVED
JUN 2005

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B05-025, #3165

DATE RECEIVED: 05/11/05 LVL LOT # :0505L449

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J03388	001	S	05LE0402	05/10/05	05/19/05	05/24/05
J03389	002	S	05LE0402	05/10/05	05/19/05	05/24/05
J03390	003	S	05LE0402	05/10/05	05/19/05	05/24/05
J03391	004	S	05LE0402	05/10/05	05/19/05	05/24/05
J03392	005	S	05LE0402	05/10/05	05/19/05	05/24/05
J03392	005 MS	S	05LE0402	05/10/05	05/19/05	05/24/05
J03392	005 MSD	S	05LE0402	05/10/05	05/19/05	05/24/05

LAB QC:

PBLKLO	MB1	S	05LE0402	N/A	05/19/05	05/24/05
PBLKLO	MB1 BS	S	05LE0402	N/A	05/19/05	05/24/05

6/6/05

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD B05-025
LVL #: 0505L449
SDG/SAF # H3165/B05-025

W.O. #: 11343-606-001-9999-00
Date Received: 05-11-2005

CHLORINATED PESTICIDES

Five (5) soil samples were collected on 05-10-2005.

The samples and their associated QC samples were extracted on 05-19-2005 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 05-24-2005. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

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

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. The initial calibrations associated with this data set were within acceptance criteria.
8. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
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.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/9/05
Date

som\r:\group\data\pest\tnu hanford\0505-449.pes

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 7 pages.

GLOSSARY OF 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.
.I	=	Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

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.
NS	=	Not Spiked.
SP	=	Indicates Spiked Compound.
P	=	This flag is used for an PESTICIDE/PCB 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.
NPM	=	No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

Pesticides/PCB by GC, Special List

RFW Batch Number: 0505L449 Client: TNU-HANFORD B05-025 #365 Work Order: 11343606001 Report Date: 05/25/05 13:05 Page: 1

	Cust ID:	J03388	J03389	J03390	J03391	J03392	J03392
Sample Information	RFW#:	001	002	003	004	005	005 MS
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Surrogate:	Tetrachloro-m-xylene	94 %	106 %	94 %	95 %	97 %	89 %
	Decachlorobiphenyl	86 %	102 %	90 %	98 %	94 %	86 %
4,4'-DDD		3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	90 %
4,4'-DDT		3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	92 %
4,4'-DDE		3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	94 %

	Cust ID:	J03392	PBLKLO	PBLKLO BS
Sample Information	RFW#:	005 MSD	05LE0402-MB1	05LE0402-MB1
	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg
Surrogate:	Tetrachloro-m-xylene	96 %	110 %	93 %
	Decachlorobiphenyl	93 %	94 %	93 %
4,4'-DDD		100 %	3.3 U	99 %
4,4'-DDT		101 %	3.3 U	101 %
4,4'-DDE		103 %	3.3 U	102 %

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

6/6/05

Lionville Laboratory Use Only
0505L449

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNU Hanford B05-025
Est. Final Proj. Sampling Date:
Project #: 11343-606-001-9999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: Orlotta Johnson
QC: Spec Del: Std TAT: 15 Days

Date Rec'd: 5-11-05 Date Due: 5/26/05

		A	B
Refrigerator #		6	6
#/Type Container	Liquid		
	Solid	1g	1g
Volume	Liquid		
	Solid	120	250
Preservatives		—	—

ANALYSES REQUESTED →

	ORGANIC				INORG	
	VOA	BNA (2)	Pest/ ~~PCB~~	Herb	Metal (1)	CN

Lionville Laboratory Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0608X	MRLRATO (No Ba)
001	J03388			S	5-10-05	0935	X	X
002	J03389					0937	X	X
003	J03390					1000	X	X
004	J03391					1015	X	X
005	J03392					1025	X	X

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

RUN MATRIX QC

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	5-11-05	0920

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	ORIGINAL REWRITTEN		

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B05-025-1	Page 1 of 1

Collector Jeff Gale	Company Contact Tom Lazarski	Telephone No. 372-9216	Project Coordinator KESSNER, JH	Price Code 8K Data Turnaround 15 5/9/05 DS -14 Day
Project Designation ERDF Stockpile Sampling - Soil	Sampling Location ERDF Stock Pile Area		SAF No. B05-025	Air Quality ☐
Ice Chest No. SAW3 100	Field Logbook No. EL-1518-2	COA RERDF2K115	Method of Shipment Federal Express	
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A050215		Bill of Lading/Air Bill No. Please See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

None - Collected From Non-Rad Area

Special Handling and/or Storage

Cool Samples 4 Degrees Celsius

Preservation	None	Cool 4C									
Type of Container	aG	aG									
No. of Container(s)	1	1									
Volume	250mL	120mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.									

Sample No.	Matrix *	Sample Date	Sample Time										
J03388	SOIL	5-10-05	0935	X	X								
J03389	SOIL	5-10-05	0937	X	X								
J03390	SOIL	5-10-05	1000	X	X								
J03391	SOIL	5-10-05	1015	X	X								
J03392	SOIL	5-10-05	1025	X	X								

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
S J Gale	5/10/05 1130	FED EX	
FedEx	5-11-05 1092a	D. Smith	5-11-05 1092a

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)
(2) Pesticides - 8081 {Dichlorodiphenyldichloroethane, Dichlorodiphenyldichloroethylene, Dichlorodiphenyltrichloroethane}

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

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

BHI-EE-011 (03/01/2002)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford **Date:** 5-11-05

Purchase Order / Project# / SAF# / SOW# / Release #: B05-025

LvLI Batch # : 0505L449 **Sample Custodian:** D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier FedEx		Airbill# 7922 7817 5943	
2.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5.	Samples received cooled or ambient?	Temp 4.3 °C		Cooler # SAWS-100	
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7.	coc signed and dated?	☑ Yes	☐ No		
8.	Sample containers are intact?	☑ Yes	☐ No		
9.	All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10.	All sample label information matches coc?	☑ Yes	☐ No		
11.	Samples properly preserved?	☑ Yes	☐ No		
12.	Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
13.	VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A	
14.	QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A	
15.	Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☑ Yes	☐ No		
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☐ Yes	☐ No	☑ No Discrepancies	

SR-002-B

Billing Address: Eberline Services
2030 Wright Avenue
Richmond, CA 94804-0040

Reports: Kevin Johnson
Eberline Services
2030 Wright Avenue
Richmond, California 94804

Kevin Johnson
Facundo Garcia

F Steve Trent
Rich Weiss
B, C Joan Kessner
N, S, X, W Dorothy Stewart

Batch #: **0505L449**
Received: 05-11-05
7 Day Fax: 05-18-05
15-Day Report: 05-26-05
21-Day Report: 06-01-05 NA
45-Day Report: 06-25-05 NA
SDG #: H3465
SAF #: B05-025
Requested Priority/Final TAT: 15/45-Day Summary Report

Client: **TNU Hanford**
Project #: 11343-606-001-9999
Contract #: N501118
P.O.#: R5-05-116 -SU-WT
Contact: Kevin Johnson

# of Sple	# QC: MS,Dup	Total Quant.	Test Code	Description	Matrix	Unit Cost	Extended Cost
5	2	7		ICP Metals by ICP: 6010	Soil	$130.00	$910.00
5	2	7		Mercury: 7471	Soil	$23.00	$161.00
5	2	7		Pesticides (DDD, DDE, DDT)	Soil	$119.00	$833.00
5		5		Sample Disposal Allowance		$10.00	$50.00
				Subtotal			**$1,954.00**
1		1		2002 HLI Index			$89.30
				Total			**$2,043.30**

RECEIVED
JUN 2005

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B05-025 H3165

DATE RECEIVED: 05/11/05 LVL LOT # :0505L449

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J03388						
SILVER, TOTAL	001	S	05L0278	05/10/05	05/25/05	05/26/05
SILVER, TOTAL	001 REP	S	05L0278	05/10/05	05/25/05	05/26/05
SILVER, TOTAL	001 MS	S	05L0278	05/10/05	05/25/05	05/26/05
ARSENIC, TOTAL	001	S	05L0278	05/10/05	05/25/05	05/26/05
ARSENIC, TOTAL	001 REP	S	05L0278	05/10/05	05/25/05	05/26/05
ARSENIC, TOTAL	001 MS	S	05L0278	05/10/05	05/25/05	05/26/05
CADMIUM, TOTAL	001	S	05L0278	05/10/05	05/25/05	05/26/05
CADMIUM, TOTAL	001 REP	S	05L0278	05/10/05	05/25/05	05/26/05
CADMIUM, TOTAL	001 MS	S	05L0278	05/10/05	05/25/05	05/26/05
CHROMIUM, TOTAL	001	S	05L0278	05/10/05	05/25/05	05/26/05
CHROMIUM, TOTAL	001 REP	S	05L0278	05/10/05	05/25/05	05/26/05
CHROMIUM, TOTAL	001 MS	S	05L0278	05/10/05	05/25/05	05/26/05
MERCURY, TOTAL	001	S	05C0115	05/10/05	05/25/05	05/27/05
MERCURY, TOTAL	001 REP	S	05C0115	05/10/05	05/25/05	05/27/05
MERCURY, TOTAL	001 MS	S	05C0115	05/10/05	05/25/05	05/27/05
LEAD, TOTAL	001	S	05L0278	05/10/05	05/25/05	05/26/05
LEAD, TOTAL	001 REP	S	05L0278	05/10/05	05/25/05	05/26/05
LEAD, TOTAL	001 MS	S	05L0278	05/10/05	05/25/05	05/26/05
SELENIUM, TOTAL	001	S	05L0278	05/10/05	05/25/05	05/26/05
SELENIUM, TOTAL	001 REP	S	05L0278	05/10/05	05/25/05	05/26/05
SELENIUM, TOTAL	001 MS	S	05L0278	05/10/05	05/25/05	05/26/05
J03389						
SILVER, TOTAL	002	S	05L0278	05/10/05	05/25/05	05/26/05
ARSENIC, TOTAL	002	S	05L0278	05/10/05	05/25/05	05/26/05
CADMIUM, TOTAL	002	S	05L0278	05/10/05	05/25/05	05/26/05
CHROMIUM, TOTAL	002	S	05L0278	05/10/05	05/25/05	05/26/05
MERCURY, TOTAL	002	S	05C0115	05/10/05	05/25/05	05/27/05
LEAD, TOTAL	002	S	05L0278	05/10/05	05/25/05	05/26/05
SELENIUM, TOTAL	002	S	05L0278	05/10/05	05/25/05	05/26/05
J03390						
SILVER, TOTAL	003	S	05L0278	05/10/05	05/25/05	05/26/05

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B05-025 H3165

DATE RECEIVED: 05/11/05 LVL LOT # :0505L449

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ARSENIC, TOTAL	003	S	05L0278	05/10/05	05/25/05	05/26/05
CADMIUM, TOTAL	003	S	05L0278	05/10/05	05/25/05	05/26/05
CHROMIUM, TOTAL	003	S	05L0278	05/10/05	05/25/05	05/26/05
MERCURY, TOTAL	003	S	05C0115	05/10/05	05/25/05	05/27/05
LEAD, TOTAL	003	S	05L0278	05/10/05	05/25/05	05/26/05
SELENIUM, TOTAL	003	S	05L0278	05/10/05	05/25/05	05/26/05
J03391						
SILVER, TOTAL	004	S	05L0278	05/10/05	05/25/05	05/26/05
ARSENIC, TOTAL	004	S	05L0278	05/10/05	05/25/05	05/26/05
CADMIUM, TOTAL	004	S	05L0278	05/10/05	05/25/05	05/26/05
CHROMIUM, TOTAL	004	S	05L0278	05/10/05	05/25/05	05/26/05
MERCURY, TOTAL	004	S	05C0115	05/10/05	05/25/05	05/27/05
LEAD, TOTAL	004	S	05L0278	05/10/05	05/25/05	05/26/05
SELENIUM, TOTAL	004	S	05L0278	05/10/05	05/25/05	05/26/05
J03392						
SILVER, TOTAL	005	S	05L0278	05/10/05	05/25/05	05/26/05
ARSENIC, TOTAL	005	S	05L0278	05/10/05	05/25/05	05/26/05
CADMIUM, TOTAL	005	S	05L0278	05/10/05	05/25/05	05/26/05
CHROMIUM, TOTAL	005	S	05L0278	05/10/05	05/25/05	05/26/05
MERCURY, TOTAL	005	S	05C0115	05/10/05	05/25/05	05/27/05
LEAD, TOTAL	005	S	05L0278	05/10/05	05/25/05	05/26/05
SELENIUM, TOTAL	005	S	05L0278	05/10/05	05/25/05	05/26/05

LAB QC:

SILVER LABORATORY	LC1 BS	S	05L0278	N/A	05/25/05	05/26/05
SILVER, TOTAL	MB1	S	05L0278	N/A	05/25/05	05/26/05
ARSENIC LABORATORY	LC1 BS	S	05L0278	N/A	05/25/05	05/26/05
ARSENIC, TOTAL	MB1	S	05L0278	N/A	05/25/05	05/26/05
CADMIUM LABORATORY	LC1 BS	S	05L0278	N/A	05/25/05	05/26/05
CADMIUM, TOTAL	MB1	S	05L0278	N/A	05/25/05	05/26/05
CHROMIUM LABORATORY	LC1 BS	S	05L0278	N/A	05/25/05	05/26/05
CHROMIUM, TOTAL	MB1	S	05L0278	N/A	05/25/05	05/26/05
MERCURY LABORATORY	LC1 BS	S	05C0115	N/A	05/25/05	05/25/05

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B05-025 H3165

DATE RECEIVED: 05/11/05 LVL LOT # :0505L449

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	MB1	S	05C0115	N/A	05/25/05	05/25/05
LEAD LABORATORY	LC1 BS	S	05L0278	N/A	05/25/05	05/26/05
LEAD, TOTAL	MB1	S	05L0278	N/A	05/25/05	05/26/05
SELENIUM LABORATORY	LC1 BS	S	05L0278	N/A	05/25/05	05/26/05
SELENIUM, TOTAL	MB1	S	05L0278	N/A	05/25/05	05/26/05

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B05-025
LVL#: 0505L449
SDG/SAF#: H3165/B05-025

W.O.#: 11343-606-001-9999-00
Date Received: 05-11-05

METALS CASE NARRATIVE

1. This narrative covers the analyses of 5 soil samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples were rerun with 2-fold dilutions for Mercury due to sample matrix.

3. All analyses were performed within the required holding times.

4. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.

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

11. The duplicate analyses for 2 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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

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 16 pages.

208 Welsh Pool Road • Exton, PA 19341- 1313 • (610) 280-3000 • Fax (610) 280-3041

region of less-certain quantification.

13. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/9/05
Date

jjw/m05-449

LvLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 05052449

Leaching Procedure: __1310 __1311 __1312 __Other:_____

CLP Metals __ Digestion and __ Analysis Methods: __ILM03.0 __ILM04.0

Metals Digestion Methods: __3005A __3010A __3015 __3020A X3050B __3051 __200.7 __SS17
__Other:_____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	__6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	NW 6/8/05 X6010B		__200.7				__99
Beryllium	__6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	X6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	X6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	__6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	X6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	__7470A [3]	X7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	__6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2__200.9			__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

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, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/27/05

CLIENT: TNUHANFORD B05-025 H3165 LVL LOT #: 0505L449

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J03388	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	3.4	MG/KG	0.45	1.0
		Cadmium, Total	0.1	MG/KG	0.03	1.0
		Chromium, Total	9.7	MG/KG	0.07	1.0
		Mercury, Total	0.03 u	MG/KG	0.03	2.0
		Lead, Total	5.9	MG/KG	0.25	1.0
		Selenium, Total	0.49 u	MG/KG	0.49	1.0
-002	J03389	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	3.0	MG/KG	0.42	1.0
		Cadmium, Total	0.20	MG/KG	0.03	1.0
		Chromium, Total	12.6	MG/KG	0.07	1.0
		Mercury, Total	0.03 u	MG/KG	0.03	2.0
		Lead, Total	3.4	MG/KG	0.24	1.0
		Selenium, Total	0.46 u	MG/KG	0.46	1.0
-003	J03390	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	3.0	MG/KG	0.45	1.0
		Cadmium, Total	0.18	MG/KG	0.03	1.0
		Chromium, Total	10.1	MG/KG	0.07	1.0
		Mercury, Total	0.03 u	MG/KG	0.03	2.0
		Lead, Total	3.9	MG/KG	0.25	1.0
		Selenium, Total	0.49 u	MG/KG	0.49	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/27/05

CLIENT: TNUHANFORD B05-025 H3165 LVL LOT #: 0505L449

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J03391	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	2.8	MG/KG	0.47	1.0
		Cadmium, Total	0.21	MG/KG	0.03	1.0
		Chromium, Total	10.8	MG/KG	0.07	1.0
		Mercury, Total	0.03 u	MG/KG	0.03	2.0
		Lead, Total	4.7	MG/KG	0.26	1.0
		Selenium, Total	0.51 u	MG/KG	0.51	1.0
-005	J03392	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	3.0	MG/KG	0.47	1.0
		Cadmium, Total	0.19	MG/KG	0.03	1.0
		Chromium, Total	15.9	MG/KG	0.07	1.0
		Mercury, Total	0.03 u	MG/KG	0.03	2.0
		Lead, Total	3.9	MG/KG	0.26	1.0
		Selenium, Total	0.51 u	MG/KG	0.51	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/27/05

CLIENT: TNUHANFORD B05-025 H3165 LVL LOT #: 0505L449

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	05L0278-MB1	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	0.45 u	MG/KG	0.45	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	0.07 u	MG/KG	0.07	1.0
		Lead, Total	0.25 u	MG/KG	0.25	1.0
		Selenium, Total	0.49 u	MG/KG	0.49	1.0
BLANK1	05C0115-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/27/05

CLIENT: TNUHANFORD B05-025 H3165 LVL LOT #: 0505L449

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J03388	Silver, Total	4.5	0.09u	4.8	93.8	1.0
		Arsenic, Total	175	3.4	192	89.3	1.0
		Cadmium, Total	4.4	0.1	4.8	89.7	1.0
		Chromium, Total	27.3	9.7	19.2	91.7	1.0
		Mercury, Total	0.16	0.03u	0.16	103.2	2.0
		Lead, Total	47.3	5.9	47.9	86.4	1.0
		Selenium, Total	171	0.49u	192	89.3	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/27/05

CLIENT: TNUHANFORD B05-025 H3165 LVL LOT #: 0505L449

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J03388	Silver, Total	0.09u	0.09u	NC	1.0
		Arsenic, Total	3.4	2.9	15.9	1.0
		Cadmium, Total	0.1	0.13	26.8	1.0
		Chromium, Total	9.7	10.0	3.0	1.0
		Mercury, Total	0.03u	0.03u	NC	2.0
		Lead, Total	5.9	4.4	29.1	1.0
		Selenium, Total	0.49u	0.51u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/27/05

CLIENT: TNUHANFORD B05-025 H3165 LVL LOT #: 0505L449

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	05L0278-LC1	Silver, LCS	49.4	50.0	MG/KG	98.8
		Arsenic, LCS	955	1000	MG/KG	95.5
		Cadmium, LCS	24.9	25.0	MG/KG	99.6
		Chromium, LCS	50.4	50.0	MG/KG	100.8
		Lead, LCS	253	250	MG/KG	101.0
		Selenium, LCS	938	1000	MG/KG	93.8
LCS1	05C0115-LC1	Mercury, LCS	6.4	6.2	MG/KG	102.3

Lionville Laboratory Use Only

0505L449

Custody Transfer Record/Lab Work Request

Page 1 of 1

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNU Hanford BOS-025

Est. Final Proj. Sampling Date:

Project #: 11343-006-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: Orlotta Johnson

QC: SPEC Del: Std TAT: 15 Days

Date Rec'd: 5-11-05 Date Due: 5/26/05

		A	B
Refrigerator #		6	6
#/Type Container	Liquid		
	Solid	1g	1g
Volume	Liquid		
	Solid	120	250
Preservatives		—	—

ANALYSES REQUESTED →

ORGANIC				INORG	
VOA	BNA (2)	Pest/ ~~POB~~	Herb	Metal (1)	CN

Lionville Laboratory Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0608X	MRLRATO (No Bx)
001	J03388			S	5-10-05	0935	X	X
002	J03389					0937	X	X
003	J03390					1000	X	X
004	J03391					1015	X	X
005	J03392					1025	X	X

Special Instructions:

RUN MATRIX QC

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time
Fred Ex	[signature]	5-11-05	0920

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	ORIGINAL REWRITTEN		

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B05-025-1	Page 1 of 1
Collector Jeff Gale	Company Contact Tom Lazarski	Telephone No. 372-9216	Project Coordinator KESSNER, JH	Price Code 8K Data Turnaround 15 5/9/05 DS -14 Day
Project Designation ERDF Stockpile Sampling - Soil	Sampling Location ERDF Stock Pile Area		SAF No. B05-025	Air Quality ☐
Ice Chest No. SAWS 100	Field Logbook No. EL-1518-2	COA RERDF2K115	Method of Shipment Federal Express	
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A050215		Bill of Lading/Air Bill No. Please See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

None - Collected From Non-Rad Area

Special Handling and/or Storage

Cool Samples 4 Degrees Celsius

Preservation	None	Cool 4C									
Type of Container	aG	aG									
No. of Container(s)	1	1									
Volume	250mL	120mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.									

Sample No.	Matrix *	Sample Date	Sample Time										
J03388	SOIL	5-10-05	0935	X	X								
J03389	SOIL	5-10-05	0937	X	X								
J03390	SOIL	5-10-05	1000	X	X								
J03391	SOIL	5-10-05	1015	X	X								
J03392	SOIL	5-10-05	1025	X	X								

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
SJ GALE [signature]	5/10/05 1130	FED EX	
Fed Ex	5-11-05 / 0920	D. Y. Midh	5-11-05 / 0920

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)
(2) Pesticides - 8081 {Dichlorodiphenyldichloroethane, Dichlorodiphenyldichloroethylene, Dichlorodiphenyltrichloroethane}

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

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

BHI-EE-011 (03/01/2002)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford **Date:** 5-11-05

Purchase Order / Project# / SAF# / SOW# / Release #: B05-025

LvLI Batch # : 05051449 **Sample Custodian:** D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier FedEx		Airbill# 7922 7817 5942	
2.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5.	Samples received cooled or ambient?	Temp 4.3 °C		Cooler # SAWS-100	
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7.	coc signed and dated?	☑ Yes	☐ No		
8.	Sample containers are intact?	☑ Yes	☐ No		
9.	All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10.	All sample label information matches coc?	☑ Yes	☐ No		
11.	Samples properly preserved?	☑ Yes	☐ No		
12.	Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
13.	VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A	
14.	QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A	
15.	Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	☑ Yes	☐ No		
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☐ Yes	☐ No	☑ No Discrepancies	

SR-002-B