0059891

SAF-B03-015
Remaining Sites Confirmation Sampling-Soil
FINAL DATA PACKAGE

E:MAIL RESULTS TO:

Ella Feist N/A
INITIAL/DATE

Mike Stankovich N/A
INITIAL/DATE

MAIL COMPLETE COPY OF DATA PACKAGE TO:

Ella Feist	H9-01	BF INITIAL/DATE
Mike Stankovich	H9-02	BF INITIAL/DATE 6/9/03
Bob Hynes	H0-18	BF INITIAL/DATE
Jeanette Duncan	H9-02	BF INITIAL/DATE

COMMENTS: (PLEASE INCLUDE THE FOLLOWING ON THE COVER SHEET)

SDG H2236 SAF-B03-015

Rad only X Chem only Rad & Chem

X Complete Partial

Sample Location/Waste Site: 600-190

RECEIVED
JUL 28 2003
EDMC

LIONVILLE LABORATORY INC.

4 June 2003

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 #	0305L472
SDG #	H2236
SAF #	B03-015
Date Received	5-22-03
# Samples	5
Matrix	Soil
Volatiles	
Semivolatiles	X
Pest/PCB	X
DRO/KRO/GRO	
GC Alcohols	
Herbicides	X
Metals	X
Inorganics	X

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

JUN 2003

r:\group\pm\orlette\tnu-hanford\data\b_ltrs.doc

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

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2236

DATE RECEIVED: 05/22/03 LVL LOT # :0305L472

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00P15	001	S	03LE0623	05/20/03	05/23/03	05/28/03
J00P15	001 01	S	03LE0623	05/20/03	05/23/03	05/30/03
J00P15	001 MS	S	03LE0623	05/20/03	05/23/03	05/28/03
J00P15	001 MSD	S	03LE0623	05/20/03	05/23/03	05/28/03
J00P16	002	S	03LE0623	05/20/03	05/23/03	05/28/03
J00P17	003	S	03LE0623	05/20/03	05/23/03	05/28/03
J00P18	004	S	03LE0623	05/20/03	05/23/03	05/28/03
J00P19	005	S	03LE0623	05/20/03	05/23/03	05/28/03

LAB QC:

SBLKUA	MB1	S	03LE0623	N/A	05/23/03	05/27/03
SBLKUA	MB1 BS	S	03LE0623	N/A	05/23/03	05/27/03

01

LIONVILLE LABORATORY INC.

Client: TNU-HANFORD B03-015
LVL #: 0305L472
SDG/SAF # H2236/B03-015

W.O. #: 11343-606-001-9999-00
Date Received: 05-22-2003

SEMIVOLATILE

Five (5) soil samples were collected on 05-20-2003.

The samples and their associated QC samples were extracted according to Lionville Laboratory OPs based on SW 846 method 3550 on 05-23-2003 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 05-27,28,30-2003.

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. Non-target compounds were detected in the samples.

4. Sample J00P15 required a 5-fold dilution due to the high levels of target compounds.

5. One (1) of sixty (60) surrogate recoveries was outside EPA QC limits. However, EPA CLP surrogate recovery criteria were met (i.e., no more than one outlier per fraction {acid and base neutral} and no recoveries less than 10%).

6. All matrix spike recoveries were within EPA QC limits.

7. All blank spike recoveries were within EPA QC limits.

8. Internal standard area criteria were not met for samples J00P19 and M00P15 MSD. However, the GC/MS instrument was inspected for possible malfunction and was judged to be functioning properly and all surrogate recoveries were within QC limits; consequently, the samples were not reanalyzed.

9. Manual integrations are performed according to OP 21-06A-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

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.

for J. Michael Taylor
President
Lionville Laboratory Incorporated

06-04-03
Date

som\gorup\data\bna\mu-hanford-0305-472.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 2 0 pages.

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

GLOSSARY

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

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.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

MP - Missed Peak: manually added peak not found by automatic quan program.

PA - Peak Assignment: quan report was changed to reflect correct peak assignment.

RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.

SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.

CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.

PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 06/03/03 15:55

RFW Batch Number: **0305L472** Client: **TNUHANFORD B03-015 H2236** Work Order: 11343606001 Page: 1a

	Cust ID:	J00P15		J00P15		J00P15		J00P15		J00P16		J00P17	
Sample Information	RFW#:	001		001 DL		001 MS		001 MSD		002		003	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		5.00		1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	60	%	56	%	76	%	76	%	73	%	78	%
	2-Fluorobiphenyl	62	%	65	%	75	%	73	%	76	%	76	%
	Terphenyl-d14	88	%	77	%	107	%	96	%	110	%	114	%
	Phenol-d5	56	%	59	%	66	%	64	%	68	%	72	%
	2-Fluorophenol	57	%	59	%	72	%	71	%	69	%	71	%
	2,4,6-Tribromophenol	66	%	61	%	90	%	85	%	88	%	85	%
			fl		fl		fl		fl		fl		fl
Phenol		1100	U	5300	U	66	%	63	%	350	U	340	U
bis(2-Chloroethyl)ether		1100	U	5300	U	1100	U	1100	U	350	U	340	U
2-Chlorophenol		1100	U	5300	U	64	%	63	%	350	U	340	U
1,3-Dichlorobenzene		1100	U	5300	U	1100	U	1100	U	350	U	340	U
1,4-Dichlorobenzene		1100	U	5300	U	66	%	70	%	350	U	340	U
1,2-Dichlorobenzene		1100	U	5300	U	1100	U	1100	U	350	U	340	U
2-Methylphenol		1100	U	5300	U	1100	U	1100	U	350	U	340	U
2,2'-oxybis(1-Chloropropane)		1100	U	5300	U	1100	U	1100	U	350	U	340	U
3- and/or 4-Methylphenol		1100	U	5300	U	1100	U	1100	U	350	U	340	U
N-Nitroso-di-n-propylamine		1100	U	5300	U	75	%	67	%	350	U	340	U
Hexachloroethane		1100	U	5300	U	1100	U	1100	U	350	U	340	U
Nitrobenzene		1100	U	5300	U	1100	U	1100	U	350	U	340	U
Isophorone		1100	U	5300	U	1100	U	1100	U	350	U	340	U
2-Nitrophenol		1100	U	5300	U	1100	U	1100	U	350	U	340	U
2,4-Dimethylphenol		1100	U	5300	U	1100	U	1100	U	350	U	340	U
bis(2-Chloroethoxy)methane		1100	U	5300	U	1100	U	1100	U	350	U	340	U
2,4-Dichlorophenol		1100	U	5300	U	1100	U	1100	U	350	U	340	U
1,2,4-Trichlorobenzene		1100	U	5300	U	75	%	75	%	350	U	340	U
Naphthalene		100	J	5300	U	96	J	220	J	350	U	340	U
4-Chloroaniline		1100	U	5300	U	1100	U	1100	U	350	U	340	U
Hexachlorobutadiene		1100	U	5300	U	1100	U	1100	U	350	U	340	U
4-Chloro-3-methylphenol		1100	U	5300	U	77	%	71	%	350	U	340	U
2-Methylnaphthalene		1100	U	5300	U	1100	U	1100	U	350	U	340	U
Hexachlorocyclopentadiene		1100	U	5300	U	1100	U	1100	U	350	U	340	U
2,4,6-Trichlorophenol		1100	U	5300	U	1100	U	1100	U	350	U	340	U
2,4,5-Trichlorophenol		2600	U	13000	U	2600	U	2600	U	860	U	860	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0305L472 Client: TNUHANFORD B03-015 H2236 Work Order: 11343606001 Page: 1b

Cust ID:	J00P15		J00P15		J00P15		J00P15		J00P16		J00P17	
RFW#:	001		001 DL		001 MS		001 MSD		002		003	
2-Chloronaphthalene	1100	U	5300	U	1100	U	1100	U	350	U	340	U
2-Nitroaniline	2600	U	13000	U	2600	U	2600	U	860	U	860	U
Dimethylphthalate	1100	U	5300	U	1100	U	1100	U	350	U	340	U
Acenaphthylene	1100	U	5300	U	1100	U	1100	U	350	U	38	J
2,6-Dinitrotoluene	1100	U	5300	U	1100	U	1100	U	350	U	340	U
3-Nitroaniline	2600	U	13000	U	2600	U	2600	U	860	U	860	U
Acenaphthene	1100	U	5300	U	77	%	73	%	350	U	340	U
2,4-Dinitrophenol	2600	U	13000	U	2600	U	2600	U	860	U	860	U
4-Nitrophenol	2600	U	13000	U	67	%	57	%	860	U	860	U
Dibenzofuran	1100	U	5300	U	1100	U	1100	U	350	U	340	U
2,4-Dinitrotoluene	1100	U	5300	U	78	%	64	%	350	U	340	U
Diethylphthalate	1100	U	5300	U	1100	U	1100	U	350	U	340	U
4-Chlorophenyl-phenylether	1100	U	5300	U	1100	U	1100	U	350	U	340	U
Fluorene	1100	U	5300	U	1100	U	1100	U	350	U	340	U
4-Nitroaniline	2600	U	13000	U	2600	U	2600	U	860	U	860	U
4,6-Dinitro-2-methylphenol	2600	U	13000	U	2600	U	2600	U	860	U	860	U
N-Nitrosodiphenylamine (1)	1100	U	5300	U	1100	U	1100	U	350	U	340	U
4-Bromophenyl-phenylether	1100	U	5300	U	1100	U	1100	U	350	U	340	U
Hexachlorobenzene	1100	U	5300	U	1100	U	1100	U	350	U	340	U
Pentachlorophenol	2600	U	13000	U	71	%	69	%	860	U	860	U
Phenanthrene	1100	U	5300	U	1100	U	61	J	350	U	340	U
Anthracene	1100	U	5300	U	1100	U	1100	U	350	U	47	J
Carbazole	1100	U	5300	U	1100	U	1100	U	350	U	340	U
Di-n-butylphthalate	12000	E	16000	D	13000	E	22000	E	350	U	340	U
Fluoranthene	1100	U	5300	U	1100	U	68	J	350	U	340	U
Pyrene	1100	U	5300	U	105	%	98	%	350	U	47	J
Butylbenzylphthalate	1100	U	5300	U	1100	U	1100	U	350	U	340	U
3,3'-Dichlorobenzidine	1100	U	5300	U	1100	U	1100	U	350	U	340	U
Benzo(a)anthracene	1100	U	5300	U	1100	U	1100	U	350	U	340	U
Chrysene	1100	U	5300	U	1100	U	1100	U	350	U	53	J
bis(2-Ethylhexyl)phthalate	2400		2000	JD	2900		5900		43	J	45	J
Di-n-octyl phthalate	1100	U	5300	U	1100	U	1100	U	350	U	340	U
Benzo(b)fluoranthene	1100	U	5300	U	1100	U	1100	U	350	U	52	J
Benzo(k)fluoranthene	1100	U	5300	U	1100	U	1100	U	350	U	44	J
Benzo(a)pyrene	1100	U	5300	U	1100	U	1100	U	350	U	62	J
Indeno(1,2,3-cd)pyrene	1100	U	5300	U	1100	U	1100	U	350	U	57	J
Dibenz(a,h)anthracene	1100	U	5300	U	1100	U	1100	U	350	U	340	U
Benzo(g,h,i)perylene	1100	U	5300	U	1100	U	1100	U	350	U	130	J

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 06/03/03 15:56

RFW Batch Number: 0305L472 Client: TNUHANFORD B03-015 H2236 Work Order: 11343606001 Page: 2a

	Cust ID:	J00P18		J00P19		SBLKUA		SBLKUA BS	
Sample Information	RFW#:	004		005		03LE0623-MB1		03LE0623-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	73	%	85	%	65	%	75	%
	2-Fluorobiphenyl	69	%	79	%	60	%	69	%
	Terphenyl-d14	111	%	138 *	%	80	%	88	%
	Phenol-d5	66	%	74	%	59	%	66	%
	2-Fluorophenol	66	%	74	%	59	%	67	%
	2,4,6-Tribromophenol	78	%	82	%	66	%	76	%
Phenol		350	U	330	U	330	U	61	%
bis(2-Chloroethyl)ether		350	U	330	U	330	U	330	U
2-Chlorophenol		350	U	330	U	330	U	62	%
1,3-Dichlorobenzene		350	U	330	U	330	U	330	U
1,4-Dichlorobenzene		350	U	330	U	330	U	67	%
1,2-Dichlorobenzene		350	U	330	U	330	U	330	U
2-Methylphenol		350	U	330	U	330	U	330	U
2,2'-oxybis(1-Chloropropane)		350	U	330	U	330	U	330	U
3- and/or 4-Methylphenol		350	U	330	U	330	U	330	U
N-Nitroso-di-n-propylamine		350	U	330	U	330	U	70	%
Hexachloroethane		350	U	330	U	330	U	330	U
Nitrobenzene		350	U	330	U	330	U	330	U
Isophorone		350	U	330	U	330	U	330	U
2-Nitrophenol		350	U	330	U	330	U	330	U
2,4-Dimethylphenol		350	U	330	U	330	U	330	U
bis(2-Chloroethoxy)methane		350	U	330	U	330	U	330	U
2,4-Dichlorophenol		350	U	330	U	330	U	330	U
1,2,4-Trichlorobenzene		350	U	330	U	330	U	68	%
Naphthalene		350	U	330	U	330	U	330	U
4-Chloroaniline		350	U	330	U	330	U	330	U
Hexachlorobutadiene		350	U	330	U	330	U	330	U
4-Chloro-3-methylphenol		350	U	330	U	330	U	70	%
2-Methylnaphthalene		350	U	330	U	330	U	330	U
Hexachlorocyclopentadiene		350	U	330	U	330	U	330	U
2,4,6-Trichlorophenol		350	U	330	U	330	U	330	U
2,4,5-Trichlorophenol		860	U	840	U	840	U	840	U

*= Outside of EPA CLP QC limits.

Cust ID:	J00P18		J00P19		SBLKUA		SBLKUA BS	
RFW#:	004		005		03LE0623-MB1		03LE0623-MB1	
2-Chloronaphthalene	350	U	330	U	330	U	330	U
2-Nitroaniline	860	U	840	U	840	U	840	U
Dimethylphthalate	350	U	330	U	330	U	330	U
Acenaphthylene	26	J	330	U	330	U	330	U
2,6-Dinitrotoluene	350	U	330	U	330	U	330	U
3-Nitroaniline	860	U	840	U	840	U	840	U
Acenaphthene	350	U	330	U	330	U	69	%
2,4-Dinitrophenol	860	U	840	U	840	U	840	U
4-Nitrophenol	860	U	840	U	840	U	75	%
Dibenzofuran	350	U	330	U	330	U	330	U
2,4-Dinitrotoluene	350	U	330	U	330	U	79	%
Diethylphthalate	350	U	330	U	330	U	330	U
4-Chlorophenyl-phenylether	350	U	330	U	330	U	330	U
Fluorene	350	U	330	U	330	U	330	U
4-Nitroaniline	860	U	840	U	840	U	840	U
4,6-Dinitro-2-methylphenol	860	U	840	U	840	U	840	U
N-Nitrosodiphenylamine (1)	350	U	330	U	330	U	330	U
4-Bromophenyl-phenylether	350	U	330	U	330	U	330	U
Hexachlorobenzene	350	U	330	U	330	U	330	U
Pentachlorophenol	860	U	840	U	840	U	65	%
Phenanthrene	350	U	330	U	330	U	330	U
Anthracene	36	J	330	U	330	U	330	U
Carbazole	350	U	330	U	330	U	330	U
Di-n-butylphthalate	350	U	78	J	330	U	18	J
Fluoranthene	350	U	330	U	330	U	330	U
Pyrene	27	J	330	U	330	U	78	%
Butylbenzylphthalate	350	U	330	U	330	U	330	U
3,3'-Dichlorobenzidine	350	U	330	U	330	U	330	U
Benzo(a)anthracene	350	U	330	U	330	U	330	U
Chrysene	39	J	330	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	35	J	38	J	330	U	330	U
Di-n-octyl phthalate	350	U	330	U	330	U	330	U
Benzo(b)fluoranthene	37	J	330	U	330	U	330	U
Benzo(k)fluoranthene	35	J	330	U	330	U	330	U
Benzo(a)pyrene	38	J	330	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	41	J	330	U	330	U	330	U
Dibenz(a,h)anthracene	350	U	330	U	330	U	330	U
Benzo(g,h,i)perylene	85	J	330	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.

J00P15

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2236

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L472-001

Sample wt/vol: 10.0 (g/mL) G

Lab File ID: D052808

Level: (low/med) LOW

Date Received: 05/22/03

% Moisture: 5 decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.170	30000	JAB
2.	UNKNOWN	7.222	1000	J
3.	UNKNOWN	7.709	1000	J
4.	C3-ALKYLBENZENE	8.422	900	J
5.	UNKNOWN	9.952	1000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00P16

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2236

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L472-002

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

Lab File ID: D052811

Level: (low/med) LOW

Date Received: 05/22/03

% Moisture: 4 decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	3.353	800	JA
2.	ALDOL CONDENSATE	4.222	1000	JA
3.	ALDOL CONDENSATE	5.179	20000	JAB
4.	ORGANIC ACID	20.020	6000	J
5.	ORGANIC ACID	21.246	1000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00P17

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2236

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L472-003

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

Lab File ID: D052812

Level: (low/med) LOW

Date Received: 05/22/03

% Moisture: 3 decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.222	200	JA
2.	ALDOL CONDENSATE	4.605	200	JAB
3.	ALDOL CONDENSATE	5.196	20000	JAB
4.	ALKANE	25.471	100	J
5.	PAH	26.688	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00P18

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2236

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L472-004

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

Lab File ID: D052813

Level: (low/med) LOW

Date Received: 05/22/03

% Moisture: 4 decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.222	200	JA
2.	ALDOL CONDENSATE	4.596	200	JAB
3.	ALDOL CONDENSATE	5.170	20000	JAB
4.	ALDOL CONDENSATE	6.413	100	JAB
5.	PAH	26.679	100	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00P19

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2236

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L472-005

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

Lab File ID: D052814

Level: (low/med) LOW

Date Received: 05/22/03

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.231	200	JA
2.	ALDOL CONDENSATE	4.605	200	JAB
3.	ALDOL CONDENSATE	5.196	20000	JAB
4.	ALDOL CONDENSATE	6.422	100	JAB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKUA

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2236

Matrix: (soil/water) SOIL

Lab Sample ID: 03LE0623-MB1

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

Lab File ID: D052706

Level: (low/med) LOW

Date Received: 05/23/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/27/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.591	200	JA
2.	ALDOL CONDENSATE	5.156	10000	JA
3.	ALDOL CONDENSATE	6.416	80	JA

Lionville Laboratory Use Only
0305L472

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B03-015
Est. Final Proj. Sampling Date:
Project #: 11343-606-001-9999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: Arlette Johnson
QC: SPEC Del: STD TAT: 7 days

Date Rec'd: 5-22-03 Date Due: 5-29-03

		A	B		C	D	E	F
Refrigerator #		2	2		2	—	—	1
#/Type Container	Liquid							
	Solid	1aq	1aq	-1	1aq	1aq	1aq	1aq
Volume	Liquid							
	Solid	125	250	-1	60	125	60	125
Preservatives		—	—		—	—	—	—

ANALYSES REQUESTED →

	ORGANIC				INORG			
	VOA	BNA	Pest/PCB	Herb	Metal	CN	TPH 418.1	Sulfide
Lab ID		0625H	0608H OPCB	OHBGX	MRCRATO	ICNTO	IPHC	ISFD
001		X	X	X	X		X	
002		X	X	X	X		X	
003		X	X	X	X	X	X	X
004		X	X	X	X	X	X	X
005		X			X			

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
001	J00P15			S	5-20-03	1330
002	J00P16					1300
003	J00P17					1410
004	J00P18					↓
005	J00P19					1350

Special Instructions: SAF # B03-015

Run Matrix QC (Do Not Use - 005)

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

Lionville Laboratory Use Only

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

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. 0.3 °C

Relinquished by	Received by	Date	Time
[signature]	[signature]	5-22-03	0900

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:
#7922 5297 1515/0.8 - 7922 5297 1559

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-111	Page 1 of 1

Collector: R Fahlberg / DL Bowers	Company Contact: M Stankovich	Telephone No.: 531-7620	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 Days	Air Quality: ---	
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 600-190	SAF No.: B03-015	
Ice Chest No.: ERC 99042	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: A030236	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area. No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	aG	aG	aG	aG	aG						
No. of Container(s)	1	1	1	1	1						
Volume	60mL	250mL	125g	60mL	60mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1						

Sample No.	Matrix *	Sample Date	Sample Time											
J00P15	SOIL	5-20-03	1230	X	X	X			X					
J00P16	SOIL	5-20-03	1300	X	X	X			X					

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Doug Bowers Bowers	5-20-03/1575	Received By/Stored In: Ref 3A 3728	5-20-03/1575
Relinquished By/Removed From: Ref 3A 3728	52103 1300	Received By/Stored In: SJ Galle	52103 1300
Relinquished By/Removed From: SJ Galle	52103 1300	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: Fed Ex	5-22-03/0800	Received By/Stored In: D Smith	5-22-03/0900
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-114	Page 1 of 1

Collector: R Fahlberg / DL Bowers	Company Contact: M Stankovich	Telephone No.: 531-7620	Project Coordinator: KESSNER, JH
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 600-190		SAF No.: B03-015
Ice Chest No.: ERC 96002	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: A030236		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 8B — Data Turnaround: 7 Days — Air Quality: —

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	60mL	250mL	125g	60mL	60mL	125mL	125mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) 8-20 5-20-03	TPH (Total) - 418.1	Sulfides - 9030	Total Cyanide - 9010			

Sample No.	Matrix *	Sample Date	Sample Time										
J00P17	SOIL	5-20-03	1410	X	X	X		X	X	X			
J00P18	SOIL	5-20-03	1410	X	X	X		X	X	X			

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Bowers	5-20-03/1515	Ref 3A 3728	5-20-03/1515
REF 3A 3728	52103 1300	S JEALE	52103 1300
S JEALE	52103 1300	FED EX	
Fed Ex	5-22-03 10900	D Smith	5-22-03 10900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-015-112	Page 1 of 5
Collector R Fahlberg / DL Bowers	Company Contact M Stankovich	Telephone No. 531-7620	Project Coordinator KESSNER, JH	Price Code 8B / Air Quality — / Data Turnaround 7 Days
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 600-190		SAF No. B03-015	
Ice Chest No. ERC 99 042	Field Logbook No. EL 1577	COA C17HXU671C	Method of Shipment Fed Ex	
Shipped To = TMA/RECRA	Offsite Property No. A030 236		Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area. No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation				None	Cool 4C	Cool 4C							
Type of Container				aG	aG	aG							
No. of Container(s)				1	1	1							
Volume				60mL	125g	60mL							
SAMPLE ANALYSIS				See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) 5-20-03							
Sample No.	Matrix *	Sample Date	Sample Time										
J00P19	SOIL	5-20-03	1350	X	X								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Doug Bowers Date/Time: 5-20-03/1515	Received By/Stored In: Ref 3A 3728 Date/Time: 5-20-03/1515		
Relinquished By/Removed From: REF 3A 3728 Date/Time: 52103 1300	Received By/Stored In: SJOALE Date/Time: 52103 1300		
Relinquished By/Removed From: SJOALE Date/Time: 52103 1300	Received By/Stored In: FEDEX Date/Time:		
Relinquished By/Removed From: Fed Ex Date/Time: 5-22-03/0900	Received By/Stored In: [signature] Date/Time: 5-22-03/0900		
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:		
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:		

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Do not use for QA/QC

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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

IENT: TNU Hanford

chase Order/Project:

DATE: 5-22-03

F# / SOW# / Release #: B03-015

boratory SDG #: C3051472

OTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3.	Airbill # recorded?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
5.	Sample containers are intact?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
7.	All samples on coc received?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
8.	All sample label information matches coc?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☑ N/A	☐ see Comment #
10.	Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
11.	Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☑ N/A	☐ see Comment #
12.	coc signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
13.	coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☑ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERC 99-042 / 0.8°C

ERC 96-002 / 0.3°C

Laboratory Sample Custodian: [signature]

Laboratory Project Manager:

RECEIVED
JUN 2003

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2236

DATE RECEIVED: 05/22/03 LVL LOT # :0305L472

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00P15	001	S	03LE0626	05/20/03	05/26/03	05/28/03
J00P16	002	S	03LE0626	05/20/03	05/26/03	05/28/03
J00P16	002 MS	S	03LE0626	05/20/03	05/26/03	05/28/03
J00P16	002 MSD	S	03LE0626	05/20/03	05/26/03	05/28/03
J00P17	003	S	03LE0626	05/20/03	05/26/03	05/29/03
J00P18	004	S	03LE0626	05/20/03	05/26/03	05/29/03

LAB QC:

PBLKUR	MB1	S	03LE0626	N/A	05/26/03	05/28/03
PBLKUR	MB1 BS	S	03LE0626	N/A	05/26/03	05/28/03

JK 5/28/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B03-015
LVL #: 0305L472
SDG/SAF #: H2236/B03-015

W.O. #: 11343-606-001-9999-00
Date Received: 05-22-03

PESTICIDE

The set of samples consisted of four (4) soil samples collected on 05-20-03.

The samples and their associated QC samples were extracted on 05-26-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-28,29-03. The extraction procedure was based on method 3540 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. All required holding times for extraction and analysis have been met.

3. All samples and their associated QC samples received a Sulfur cleanup.

4. The method blank was below the reporting limits for all target compounds.

5. All obtainable surrogate recoveries were within acceptance criteria.

6. One (1) of six (6) blank spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

7. Matrix spike recoveries were unobtainable due to the dilution required for analysis.

8. All samples required 50-fold instrument dilutions due to the high concentrations of target and non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.

9. All initial calibrations associated with this data set were within acceptance criteria.

10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria with the exception of the target compounds listed on the enclosed Sample Discrepancy Report (SDR).

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.

11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/2/03
Date

pef\r:\group\data\pest\tnu hanford\05L-472.pcb

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 036-C158

Initiator: Bryce Santoro
Date: TNV
Client: 05/29/03

Batch: 0305L472, 473
Samples: all
Method: SW846/MCAWW/CLP/

Parameter: 0608H
Matrix: Soil
Prep Batch: 03LE0626

1. Reason for SDR

a. COC Discrepancy __ Tech Profile Error __ Client Request __ Sampler Error on C-O-C __ Transcription Error __ Wrong Test Code __ Other _____

b. General Discrepancy

__ Missing Sample/Extract* __ Container Broken __ Wrong Sample Pulled __ Label ID's Illegible
__ Hold Time Exceeded __ Insufficient Sample* __ Preservation Wrong __ Received Past Hold
__ Improper Bottle Type __ Not Amenable to Analysis

Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

(1) ccv prior to all 472 samples and QC and 473-002, 004. was elevated on both columns. All samples are clean.

(2) ccv prior to remaining 473 samples elevated on RTX-CLP2 column only. All results reported from RTX-35 column.

2. Known or Probable Causes(s)

(3) High Endrin recovery in BS. All samples clean of Endrin.

3. Discussion and Proposed Action Other Description: None

__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

4. Project Manager Instructions...signature/date: [signature] 5/29/03

✓ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: [signature] Other Explanation:

__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
✓	X Project Mgr: Stone/Johnson/Haslett	__	__ GC/LC: Kiger
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rychlak/Layman
__	X QA (file)	__	__ Log-in: Melnic
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

QA-105-A-0801

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lionville Laboratory Incorporated

Contract:

Client:

GC Sample ID: 052703gc15 .29

RFW Lot ID:

Millennium Result ID: 3168

Instrument ID: GC15

Processing Method: 05270315A_SPA_CCVB

Initial Calibration Start Date: 5/27/03

Date of Analysis: 5/28/03 2

Time of Analysis: 5:24:00 PM

Standard ID: INDA 4102 B

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	INITIAL RESPONSE	RT	CONT. RESPONSE	%D	FL
						MEAN %D	20.7	+
TCX	8.64	8.56	8.71	3270	8.63	3808	16.5	+
ALPHA-BHC	11.17	11.10	11.24	1634	11.16	1932	18.2	+
GAMMA-BHC	12.64	12.57	12.71	1633	12.64	1912	17.1	+
HEPTACHLOR	14.12	14.04	14.19	1668	14.11	1937	16.1	+
ENDOSULFAN I	18.71	18.64	18.78	1380	18.71	1586	14.9	
DIELDRIN	19.79	19.72	19.86	2619	19.79	2975	13.6	
ENDRIN	21.01	20.94	21.08	1956	21.01	2345	19.9	+
4,4'-DDD	21.50	21.42	21.57	1146	21.49	1472	28.4	!
4,4'-DDT	22.60	22.52	22.67	1451	22.59	1855	27.8	!
METHOXYCHLOR	25.42	25.35	25.49	3729	25.42	5000	34.1	!

FTX-35

CALIBRATION VERIFICATION SUMMARY

b Name: Lionville Laboratory Incorporated

Contract:

ient:

GC Sample ID: 052703gc15 .29

W Lot ID:

Millennium Result ID: 3170

nstrument ID: GC15	Initial Calibration Start Date:	Date of Analysis:	5/28/03 2
rocessing Method:	5/27/03	Time of Analysis:	5:24:00 PM
05270315B_SPA_CCVB		Standard ID:	INDA 4102 B

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	INITIAL RESPONSE	RT	CONT. RESPONSE	%D	FL
						MEAN %D	41.8	FL !
TCX	7.84	7.77	7.91	8147	7.84	10631	30.5 ✓	!
ALPHA-BHC	10.13	10.06	10.20	5150	10.13	7129	38.4	!
GAMMA-BHC	11.45	11.38	11.52	5098	11.45	7041	38.1	!
HEPTACHLOR	13.02	12.95	13.09	5211	13.02	6921	32.8	!
ENDOSULFAN I	17.52	17.45	17.59	4441	17.52	5966	34.3	!
DIELDRIN	18.47	18.39	18.54	8478	18.46	11645	37.4	!
ENDRIN	19.48	19.41	19.55	6551	19.48	9245	41.1	!
4,4'-DDD	20.01	19.94	20.08	2894	20.01	4441	53.5	!
4,4'-DDT	21.05	20.98	21.12	3996	21.05	6051	51.4	!
METHOXYCHLOR	23.44	23.37	23.51	7431	23.43	11926	60.5	!

FTX-CLP2

CALIBRATION VERIFICATION SUMMARY

ab Name: Lionville Laboratory Incorporated

Contract:

lient:

GC Sample ID: 052703gc15 .30

FW Lot ID:

Millennium Result ID: 3171

nstrument ID: GC15

Initial Calibration Start Date: 5/28/03

Date of Analysis: 5/28/03 2

'rocessing Method: 05270315B_SPB_CCVB

Time of Analysis: 6:13:14 PM

Standard ID: INDB 4202 B

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	INITIAL RESPONSE	RT	CONT. RESPONSE	%D	FL
						MEAN %D	27.9	FL !
BETA-BHC	11.82	11.75	11.89	2718	11.84	3408	25.4	!
DELTA-BHC	12.87	12.80	12.94	4175	12.89	5377	28.8	!
ALDRIN	14.17	14.10	14.24	5775	14.19	7034	21.8	+
HEPT. EPOXIDE	16.21	16.14	16.28	5558	16.23	6719	20.9	+
G CHLORDANE	16.87	16.80	16.94	5619	16.89	6894	22.7	+
A CHLORDANE	17.38	17.31	17.45	5705	17.40	6945	21.7	+
4,4'-DDE	18.06	17.99	18.13	5039	18.08	7118	41.3	!
ENDOSULFAN II	20.23	20.16	20.30	7706	20.25	9796	27.1	!
ENDRIN ALDEHYDE	21.39	21.32	21.46	6153	21.41	7964	29.4	!
ENDO SULFATE	22.32	22.25	22.39	6525	22.34	8488	30.1	!
ENDRIN KETONE	24.07	24.00	24.14	7118	24.09	9470	33.0	!
DCB	28.82	28.75	28.89	14074	28.83	18733	33.1	!

RTX-CLP2

GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.

GLOSSARY OF PESTICIDE/PCB DATA

P	=	This flag is used for 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.

R:/SHARE/HPLC/PESTICIDE/PCBGLOS

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 05/29/03 13:49

RFW Batch Number: **0305L472** Client: **TNUHANFORD B03-015 H2236** Work Order: 11343606001 Page: 1

	Cust ID:	J00P15		J00P16		J00P16		J00P16		J00P17		J00P18	
Sample Information	RFW#:	001		002		002 MS		002 MSD		003		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	50.0		50.0		50.0		50.0		50.0		50.0	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Tetrachloro-m-xylene	D	%	D	%	D	%	D	%	D	%	D	%
	Decachlorobiphenyl	D	%	D	%	D	%	D	%	D	%	D	%
			fl		fl		fl		fl		fl		fl
Alpha-BHC		88	U	87	U	87	U	87	U	86	U	87	U
Beta-BHC		88	U	87	U	87	U	87	U	86	U	87	U
Delta-BHC		88	U	87	U	87	U	87	U	86	U	87	U
gamma-BHC (Lindane)		88	U	87	U	D	%	D	%	86	U	87	U
Heptachlor		88	U	87	U	D	%	D	%	86	U	87	U
Aldrin		88	U	87	U	D	%	D	%	86	U	87	U
Heptachlor epoxide		88	U	87	U	87	U	87	U	86	U	87	U
Endosulfan I		88	U	87	U	87	U	87	U	86	U	87	U
Dieldrin		180	U	170	U	D	%	D	%	170	U	170	U
4,4'-DDE		180	U	170	U	170	U	170	U	170	U	170	U
Endrin		180	U	170	U	D	%	D	%	170	U	170	U
Endosulfan II		180	U	170	U	170	U	170	U	170	U	170	U
4,4'-DDD		180	U	170	U	170	U	170	U	170	U	170	U
Endosulfan sulfate		180	U	170	U	170	U	170	U	170	U	170	U
4,4'-DDT		180	U	170	U	D	%	D	%	170	U	170	U
Methoxychlor		880	U	870	U	870	U	870	U	860	U	870	U
Endrin ketone		180	U	170	U	170	U	170	U	170	U	170	U
Endrin aldehyde		180	U	170	U	170	U	170	U	170	U	170	U
alpha-Chlordane		88	U	87	U	87	U	87	U	86	U	87	U
gamma-Chlordane		88	U	87	U	87	U	87	U	86	U	87	U
Toxaphene		8800	U	8700	U	8700	U	8700	U	8600	U	8700	U

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

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 05/29/03 13:49

RFW Batch Number: **0305L472** Client: **TNUHANFORD B03-015 H2236** Work Order: 11343606001 Page: 2

	Cust ID:	**PBLKUR**	**PBLKUR BS**
Sample Information	RFW#:	**03LE0626-MB1**	**03LE0626-MB1**
	Matrix:	SOIL	SOIL
	D.F.:	1.00	1.00
	Units:	UG/KG	UG/KG

Surrogate:	Tetrachloro-m-xylene	90	%	95 %
	Decachlorobiphenyl	115	%	115 %

Alpha-BHC	1.7	U	1.7	U
Beta-BHC	1.7	U	1.7	U
Delta-BHC	1.7	U	1.7	U
gamma-BHC (Lindane)	1.7	U	98	%
Heptachlor	1.7	U	106	%
Aldrin	1.7	U	98	%
Heptachlor epoxide	1.7	U	1.7	U
Endosulfan I	1.7	U	1.7	U
Dieldrin	3.3	U	114	%
4,4'-DDE	3.3	U	3.3	U
Endrin	3.3	U	131 *	%
Endosulfan II	3.3	U	3.3	U
4,4'-DDD	3.3	U	3.3	U
Endosulfan sulfate	3.3	U	3.3	U
4,4'-DDT	3.3	U	117	%
Methoxychlor	17	U	17	U
Endrin ketone	3.3	U	3.3	U
Endrin aldehyde	3.3	U	3.3	U
alpha-Chlordane	1.7	U	1.7	U
gamma-Chlordane	1.7	U	1.7	U
Toxaphene	170	U	170	U

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

05/29/03

Lionville Laboratory Use Only

03051472

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B03-015

Est. Final Proj. Sampling Date:

Project #: 11343-606-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: Charlotte Johnson

QC: SPEC Del: STD TAT: Today

Date Rec'd: 5-22-03 Date Due: 5-29-03

		A	B					C	D	E	F
Refrigerator #		2	2					2			
#/Type Container	Liquid										
	Solid	1aq	1aq					1aq	1aq	1aq	1aq
Volume	Liquid										
	Solid	125	250					60	125	60	125
Preservatives		—	—					—	—	—	—
ANALYSES REQUESTED		ORGANIC						INORG			
		VOA	BNA	Pest/PCB	Herb			Metal	CN	TPH 418.1	Sulfide

Lionville Laboratory Use Only

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected		8260 SH	8080H 8PCB	8HDGY			MACRATO	ICNIO	IPHC	IFD				
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	001	J00P15			S	5-20-03	1330		X	X	X			X		X					
	002	J00P16					1300		X	X	X			X		X					
	003	J00P17					1410		X	X	X			X	X	X	X				
	004	J00P18					1		X	X	X			X	X	X	X				
	005	J00P19					1350		X					X							

Special Instructions: SAF # B03-015

Run Matrix QC (Do Not Use - 005)

DATE/REVISIONS:

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

Lionville Laboratory Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___ Airbill # ___

2) Ambient or Chilled

3) Received in Good Condition Y or N

4) Samples Properly Preserved Y or N

5) Received Within Holding Times Y or N

Tamper Resistant Seal was: 1) Present on Outer Package Y or N 2) Unbroken on Outer Package Y or N 3) Present on Sample Y or N 4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. 0.3 °C

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: #7922 5297 1515/0.8 7922 5297 1555

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	5-22-03	0900

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-111	Page 1 of 1

Collector R Fahlberg / DL Bowers	Company Contact M Stankovich	Telephone No. 531-7620	Project Coordinator KESSNER, JH	Price Code 8B Air Quality —	Data Turnaround 7 Days
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 600-190		SAF No. B03-015		
Ice Chest No. ERC 99042	Field Logbook No. EL 1577	COA C17HXU671C	Method of Shipment Fed Ex		
Shipped To TMA/RECRA	Offsite Property No. AC30236		Bill of Lading/Air Bill No. 3E5 05PC		

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area. No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	aG	aG	aG	aG	aG						
No. of Container(s)	1	1	1	1	1						
Volume	60mL	250mL	125g	60mL	60mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1						
Sample No. / Matrix * / Sample Date / Sample Time											
J00P15 / SOIL / 5-20-03 / 1310	X	X	X		X						
J00P16 / SOIL / 5-20-03 / 1300	X	X	X		X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers	5-20-03/1515	Ref 3A 3728	5-20-03/1515
Ref 3A 3728	52103 1300	SJ Galemore	52103 1300
SJ Galemore	52103 1300	FED EX	
Fed Ex	5-22-03 0900	D Smith	5-22-03/0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-114	Page 1 of 1

Collector R Fahlberg / DL Bowers	Company Contact M Stankovich	Telephone No. 531-7620	Project Coordinator KESSNER, JH	Price Code 8B Air Quality —	Data Turnaround 7 Days
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 600-190		SAF No. B03-015		
Ice Chest No. ERC 96002	Field Logbook No. EL 1577	COA C17HXU671C	Method of Shipment Fed Ex		
Shipped To TMA/RECRA	Offsite Property No. A030236		Bill of Lading/Air Bill No. SEE 03PC		

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	60mL	250mL	125g	60mL	60mL	125mL	125mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1	Sulfides - 9030	Total Cyanide - 9010			
Sample No. / Matrix * / Sample Date / Sample Time										
J00P17 / SOIL / 5-20-03 / 1410	X	X	X		X	X	X			
J00P18 / SOIL / 5-20-03 / 1410	X	X	X		X	X	X			

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers	5-20-03/1515	REF 3A 3728	5-20-03/1515
REF 3A 3728	52103 1300	S SEALE	52103 1300
S SEALE	52103 1300	FED EX	
Fed Ex	5-22-03 10:00	D Smith	5-22-03 10:00

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wl=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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-015-112	Page 1 of 1
Collector R Fahlberg / DL Bowers	Company Contact M Stankovich	Telephone No. 531-7620	Project Coordinator KESSNER, JH	Price Code 8B / Data Turnaround 7 Days
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 600-190		SAF No. B03-015	Air Quality
Ice Chest No. ERC 99 042	Field Logbook No. EL 1577	COA C17HXU671C	Method of Shipment Fed Ex	
Shipped To TMA/RECRA	Offsite Property No. A030 236		Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area. No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C
Type of Container	aG	aG	aG
No. of Container(s)	1	1	1
Volume	60mL	125g	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) 5-20-03

Sample No.	Matrix *	Sample Date	Sample Time			
J00P19	SOIL	5-20-03	1350	X	X	

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers	5-20-03/1515	Ref 3A 3728	5-20-03/1515
REF 3A 3728	52103 1300	SJGALE	52103 1300
SJGALE	52103 1300	FED EX	
Fed Ex	5-22-03/0900	[illegible]	5-22-03/0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Do not use for QA/QC

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 5-22-03

SAF# / SOW# / Release #: B03-015

Laboratory SDG #: C3O5L472

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☑ N/A	☐ see Comment #
10. Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☑ N/A	☐ see Comment #
12. coc signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☑ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERC 99-042 / 0.8°C

ERC 96-002 / 0.3°C

Laboratory Sample Custodian: [signature]

Laboratory Project Manager:

RECEIVED
JUN 2003

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2236

DATE RECEIVED: 05/22/03 LVL LOT # :0305L472

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00P15	001	S	03LE0626	05/20/03	05/26/03	05/29/03
J00P16	002	S	03LE0626	05/20/03	05/26/03	05/29/03
J00P16	002 MS	S	03LE0626	05/20/03	05/26/03	05/29/03
J00P16	002 MSD	S	03LE0626	05/20/03	05/26/03	05/29/03
J00P17	003	S	03LE0626	05/20/03	05/26/03	05/29/03
J00P18	004	S	03LE0626	05/20/03	05/26/03	05/29/03
LAB QC:						
PBLKUR	MB1	S	03LE0626	N/A	05/26/03	05/29/03
PBLKUR	MB1 BS	S	03LE0626	N/A	05/26/03	05/29/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B03-015
LVL #: 0305L472
SDG/SAF #: H2236/B03-015

W.O. #: 11343-606-001-9999-00
Date Received: 05-22-03

PCB

The set of samples consisted of four (4) soil samples collected on 05-20-03.

The samples and their associated QC samples were extracted on 05-26-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-29-03. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082.

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. All required holding times for extraction and analysis have been met.

3. All samples and their associated QC samples received Florisil, Sulfuric Acid, and Sulfur cleanups.

4. The method blank was below the reporting limits for all target compounds.

5. All obtainable surrogate recoveries were within acceptance criteria.

6. All blank spike recoveries were within acceptance criteria.

7. Matrix spike recoveries were unobtainable due to the dilution required for analysis.

8. All samples required 10-fold instrument dilutions due to the high concentrations of target and non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.

9. All initial calibrations associated with this data set were within acceptance criteria.

10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

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

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

11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/20/03
Date

pef\r:\group\data\pest\tnu hanford\05L-472.pcb

LVLI
LIONVILLE LABORATORY INC.

GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.

GLOSSARY OF PESTICIDE/PCB DATA

P	=	This flag is used for 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.

R:/SHARE/HPLC/PESTICIDE/PCBGLOS

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 05/29/03 19:10

RFW Batch Number: **0305L472** Client: **TNUHANFORD B03-015 H2236** Work Order: 11343606001 Page: 1

	Cust ID:	J00P15		J00P16		J00P16		J00P16		J00P17		J00P18	
Sample Information	RFW#:	001		002		002 MS		002 MSD		003		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	10.0		10.0		10.0		10.0		10.0		10.0	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Decachlorobiphenyl	D	%	D	%	D	%	D	%	D	%	D	%
	Tetrachloro-m-xylene	D	%	D	%	D	%	D	%	D	%	D	%
			fl		fl		fl		fl		fl		fl
Aroclor-1016		160	U	160	U	D	%	D	%	160	U	160	U
Aroclor-1221		160	U	160	U	160	U	160	U	160	U	160	U
Aroclor-1232		160	U	160	U	160	U	160	U	160	U	160	U
Aroclor-1242		160	U	160	U	160	U	160	U	160	U	160	U
Aroclor-1248		160	U	160	U	160	U	160	U	160	U	160	U
Aroclor-1254		1100		160	U	160	U	160	U	160	U	160	U
Aroclor-1260		160	U	130	J	D	%	D	%	160	U	160	U

	Cust ID:	PBLKUR		PBLKUR BS									
Sample Information	RFW#:	03LE0626-MB1		03LE0626-MB1									
	Matrix:	SOIL		SOIL									
	D.F.:	1.00		1.00									
	Units:	UG/KG		UG/KG									
Surrogate:	Decachlorobiphenyl	90	%	105	%								
	Tetrachloro-m-xylene	80	%	90	%								
			fl		fl		fl		fl		fl		fl
Aroclor-1016		15	U	105	%								
Aroclor-1221		15	U	15	U								
Aroclor-1232		15	U	15	U								
Aroclor-1242		15	U	15	U								
Aroclor-1248		15	U	15	U								
Aroclor-1254		15	U	15	U								
Aroclor-1260		15	U	108	%								

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

Lionville Laboratory Use Only

03051472

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B03-015

Est. Final Proj. Sampling Date:

Project #: 11343-606-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: Charlotte Johnson

QC: SPEC Del: STD TAT: Today!

Date Rec'd: 5-22-03 Date Due: 5-29-03

		A	B					C	D	E	F				
Refrigerator #		2	2					2							
#/Type Container	Liquid														
	Solid	1qg	1qg					1qg	1qg	1qg	1qg				
Volume	Liquid														
	Solid	125	250					60	125	60	125				
Preservatives		—	—					—	—	—	—				
ANALYSES REQUESTED →		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			Metal	CN	TPH 418.1	Sulfide				
		Lionville Laboratory Use Only													
		8260 SH	8080 H8080 PCB	OHBGY				MACRAYO	ICNYO	IPHC	ISFD				

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	8260 SH	8080 H8080 PCB	OHBGY	MACRAYO	ICNYO	IPHC	ISFD
001	J00P15			S	5-20-03	1330	X	X	X	X		X	
002	J00P16					1300	X	X	X	X		X	
003	J00P17					1410	X	X	X	X	X	X	X
004	J00P18					1	X	X	X	X	X	X	X
005	J00P19					1350	X			X			

Special Instructions: SAF # B03-015

Run Matrix QC (Do Not Use - 005)

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

Lionville Laboratory Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___ Airbill # ___

2) Ambient or Chilled

3) Received in Good Condition Y or N

4) Samples Properly Preserved Y or N

5) Received Within Holding Times Y or N

Tamper Resistant Seal was: 1) Present on Outer Package Y or N 2) Unbroken on Outer Package Y or N 3) Present on Sample Y or N 4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. 0.3 °C

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

#7922 5297 1515/0.8 7922 5297 1559

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	5-22-03	0900

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-015-111	Page 1 of 1
Collector: R Fahlberg / DL Bowers	Company Contact: M Stankovich	Telephone No.: 531-7620	Project Coordinator: KESSNER, JH	Price Code: 8B; Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 600-190		SAF No.: B03-015	Air Quality: —
Ice Chest No.: ERC 99 042	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed Ex	
Shipped To: TMA/RECRA	Offsite Property No.: A030236		Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area. No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1	1							
Volume	60mL	250mL	125g	60mL	60mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1							

Sample No.	Matrix *	Sample Date	Sample Time										
J00P15	SOIL	5-20-03	1330	X	X	X		X					
J00P16	SOIL	5-20-03	1300	X	X	X		X					

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Doug Bowers Bowers	Date/Time: 5-20-03/1515	Received By/Stored In: Ref 3A 3728	Date/Time: 5-20-03/1515
Relinquished By/Removed From: Ref 3A 3728	Date/Time: 52103 1300	Received By/Stored In: SJ Galen	Date/Time: 52103 1300
Relinquished By/Removed From: SJ Galen	Date/Time: 52103 1300	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time: 5-22-03/0900	Received By/Stored In: [signature]	Date/Time: 5-22-03/0900
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-114	Page 1 of 1

Collector: R Fahlberg / DL Bowers	Company Contact: M Stankovich	Telephone No.: 531-7620	Project Coordinator: KESSNER, JH
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 600-190		SAF No.: B03-015
Ice Chest No.: ERC 96002	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: A030236		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 8B

Air Quality: —

Data Turnaround: 7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	60mL	250mL	125g	60mL	60mL	125mL	125mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) 5-20-03	TPH (Total) - 418.1	Sulfides - 9030	Total Cyanide - 9010			

Sample No.	Matrix *	Sample Date	Sample Time										
J00P17	SOIL	5-20-03	1410	X	X	X		X	X	X			
J00P18	SOIL	5-20-03	1410	X	X	X		X	X	X			

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Bowers	5-20-03/1515	Ref 3A 3728	5-20-03/1515
REF 3A 3728	52103 1300	S JEALE	52103 1300
S JEALE	52103 1300	FED EX	
Fed Ex	5-22-03 10900	D Smith	5-22-03/0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-015-112	Page 1 of 1
Collector R Fahlberg / DL Bowers	Company Contact M Stankovich	Telephone No. 531-7620	Project Coordinator KESSNER, JH	Price Code 8B / Data Turnaround 7 Days
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 600-190		SAF No. B03-015	Air Quality
Ice Chest No. ERC 99 042	Field Logbook No. EL 1577	COA C17HXU671C	Method of Shipment Fed Ex	
Shipped To TMA/RECRA	Offsite Property No. A030 236		Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area. No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C									
Type of Container	aG	aG	aG									
No. of Container(s)	1	1	1									
Volume	60mL	125g	60mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)									

Sample No.	Matrix *	Sample Date	Sample Time										
J00P19	SOIL	5-20-03	1350	X	X								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Doug Bowers Date/Time: 5-20-03/1515	Received By/Stored In: Ref 3A 3728 Date/Time: 5-20-03/1515		
Relinquished By/Removed From: REF 3A 3728 Date/Time: 52103 1300	Received By/Stored In: SJGALEZ Date/Time: 52103 1300		
Relinquished By/Removed From: SJGALEZ Date/Time: 52103 1300	Received By/Stored In: FED EX Date/Time:		
Relinquished By/Removed From: Fed Ex Date/Time: 5-22-03/0900	Received By/Stored In: [signature] Date/Time: 5-22-03/0900		
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:		
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:		

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Do not use for QA/QC

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 5-22-03

SAF# / SOW# / Release #: B03-015

Laboratory SDG #: 0305L472

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☑ N/A	☐ see Comment #
10. Shipment meets LvL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☑ N/A	☐ see Comment #
12. coc signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☑ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERC 99-042 / 0.8°C

ERC 96-002 / 0.3°C

Laboratory Sample Custodian: [signature]

Laboratory Project Manager:

RECEIVED
JUN 2003

Lionville Laboratory, Inc.
HBGX ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B03-015 H2234

DATE RECEIVED: 05/22/03 LVL LOT # :0305L472

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00P15	001	S	03LE0625	05/20/03	05/25/03	05/28/03
J00P15	001 MS	S	03LE0625	05/20/03	05/25/03	05/28/03
J00P15	001 MSD	S	03LE0625	05/20/03	05/25/03	05/28/03
J00P16	002	S	03LE0625	05/20/03	05/25/03	05/28/03
J00P17	003	S	03LE0625	05/20/03	05/25/03	05/28/03
J00P18	004	S	03LE0625	05/20/03	05/25/03	05/28/03

LAB QC:

PBLKUM	MB1	S	03LE0625	N/A	05/25/03	05/27/03
PBLKUM	MB1 BS	S	03LE0625	N/A	05/25/03	05/27/03
PBLKUM	MB1 BSD	S	03LE0625	N/A	05/25/03	05/27/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU HANFORD B03-015
LVL#: 0305L472
SDG/SAF#: H2236/B03-015

W.O.#: 11343-606-001-9999-00
Date Received: 05-22-03

HERBICIDE

The set of samples consisted of four (4) soil samples collected on 05-20-03.

The samples and their associated QC samples were extracted on 05-25-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-27,28-03. The extraction and analysis procedure was based on method 8151A.

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. All required holding times for extraction and analysis have been met.

3. The method blank was below the reporting limits for all target compounds.

4. All obtainable surrogate recoveries were within acceptance criteria.

5. Four (4) of sixteen (16) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

6. Thirteen (13) of sixteen (16) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

7. All initial calibrations associated with this data set were within acceptance criteria.

8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

9. To the best of my knowledge, this data report is in compliance with the terms and conditions of the purchase order, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hard copy data package and in the electronic data submitted on diskette has been authorized by the cognizant laboratory manager or his/her designee to be accurate as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/24/03
Date

pef\r:\group\data\herb\\tnu\05L-472.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.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 03GC156

Initiator: Bryce Santoro
Date: 5/28/03
Client: TNU

Batch: 0305L453, 454, 472, 473
Samples: BS, BSD, 472-MS/MSD, 454-MSD
Method: SW8467MCAWW/CLP/

Parameter: dHBOX
Matrix: Soil
Prep Batch: 03LE0625

1. Reason for SDR

a. COC Discrepancy
__ Tech Profile Error __ Client Request __ Sampler Error on C-O-C
__ Transcription Error __ Wrong Test Code __ Other _____

b. General Discrepancy
__ Missing Sample/Extract* __ Container Broken __ Wrong Sample Pulled __ Label ID's Illegible
__ Hold Time Exceeded __ Insufficient Sample* __ Preservation Wrong __ Received Past Hold
__ Improper Bottle Type __ Not Amenable to Analysis

Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

(1) Low BS and BSD recoveries (see attached).
(2) Low MS and MSD recoveries in 0305L472 - 001MS and 001MSD. (See attached).
(3) High Dinoseb recovery in 0305L454 - 004MSD

2. Known or Probable Causes(s)

(2) Matrix interference.

3. Discussion and Proposed Action
__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

Other Description:
narrate

4. Project Manager Instructions...signature/date: [signature] 5/28/03
✓ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: [signature] 5/28/03
__ Verified re-[log][leach][extract][digest][analysis] (circle)
__ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

Other Explanation:

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
✓	X Project Mgr: Stone/Johnson/Haslett	__	__ GC/LC: Kiger
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rychlak/Layman
__	X QA (file)	__	__ Log-in: Melnic
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

QA-105-A-0801

GLOSSARY OF HERBICIDE DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.

GLOSSARY OF HERBICIDE DATA

P	=	This flag is used for an Herbicide 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 HPLC.

R:/SHARE/HPLC/OLCSCGLOS

Lionville Laboratory, Inc.
Herbicides, Special List

Report Date: 05/28/03 12:09

RFW Batch Number: **0305L472** Client: **TNU-HANFORD B03-015** Work Order: 11343606001 Page: 1

9

	Cust ID:	J00P15	J00P15	J00P15	J00P16	J00P17	J00P18
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	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:	DCAA	51 %	46 %	38 %	91 %	107 %	88 %
Dalapon		180 U	32 * %	17 * %	170 U	170 U	170 U
Dicamba		70 U	36 * %	25 * %	69 U	69 U	69 U
Dichloroprop		180 U	34 * %	23 * %	170 U	170 U	170 U
2,4-D		35 U	18 * %	13 * %	35 U	34 U	35 U
2,4,5-TP (Silvex)		18 U	52 %	37 * %	17 U	17 U	17 U
2,4,5-T		18 U	28 * %	19 * %	17 U	17 U	17 U
2,4-DB		180 U	42 * %	32 * %	170 U	170 U	170 U
Dinoseb		18 U	53 %	40 %	17 U	17 U	17 U

	Cust ID:	PBLKUM	PBLKUM BS	PBLKUM BSD
Sample Information	RFW#:	03LE0625-MB1	03LE0625-MB1	03LE0625-MB1
	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg
Surrogate:	DCAA	102 %	149 %	87 %
Dalapon		170 U	34 * %	29 * %
Dicamba		67 U	80 %	48 * %
Dichloroprop		170 U	82 %	62 %
2,4-D		33 U	69 %	51 %
2,4,5-TP (Silvex)		17 U	81 %	67 %
2,4,5-T		17 U	62 %	55 * %
2,4-DB		170 U	94 %	66 %
Dinoseb		17 U	84 %	50 %

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

Lionville Laboratory Use Only
0305L472

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI LIONVILLE LABORATORY INC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B03-015

Est. Final Proj. Sampling Date:

Project #: 11343-606-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPEC Del: STD TAT: 7 days

Date Rec'd: 5-22-03 Date Due: 5-29-03

		A	B		C	D	E	F
Refrigerator #		2	2		2	—	—	1
#/Type Container	Liquid							
	Solid	1 aq	1 aq	1	1 aq	1 aq	1 aq	1 aq
Volume	Liquid							
	Solid	125	250	1	60	125	60	125
Preservatives		—	—	—	—	—	—	—
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb	INORG: Metal	CN	TPH 418.1	Sulfide

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	0625H	0608H OPCB	OHBGX	MACRATO	ICNTO	IPHC	ISFD
001	JOOP15			S	5-20-03	1330	X	X	X	X		X	
002	JOOP16					1300	X	X	X	X		X	
003	JOOP17					1410	X	X	X	X	X	X	X
004	JOOP18					1	X	X	X	X	X	X	X
005	JOOP19					1350	X			X			

Special Instructions: SAF # B03-015

Run Matrix QC (Do Not Use - 005)

DATE/REVISIONS:

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

Lionville Laboratory Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___ Airbill # ___

2) Ambient or Chilled

3) Received in Good Condition Y or N

4) Samples Properly Preserved Y or N

5) Received Within Holding Times Y or N

Tamper Resistant Seal was: 1) Present on Outer Package Y or N

2) Unbroken on Outer Package Y or N

3) Present on Sample Y or N

4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. 0.3 °C

Relinquished by	Received by	Date	Time
[signature]	[signature]	5-22-03	0900

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: #7922 5297 1515/0.8 7922 5297 1559

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-015-111	Page 1 of 1
Collector: R Fahlberg / DL Bowers	Company Contact: M Stankovich	Telephone No.: 531-7620	Project Coordinator: KESSNER, JH	Price Code: 8B; Data Turnaround: 7 Days
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 600-190		SAF No.: B03-015	Air Quality: —
Ice Chest No.: ERC 99 042	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed Ex	
Shipped To: TMA/RECRA	Offsite Property No.: A030236		Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1
Volume	60mL	250mL	125g	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) DAD 5-20-03	TPH (Total) - 418.1

Sample No.	Matrix *	Sample Date	Sample Time					
J00P15	SOIL	5-20-03	1330	X	X	X		X
J00P16	SOIL	5-20-03	1300	X	X	X		X

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Bowers	5-20-03/1575	Ref 3A 3728	5-20-03/1515
Ref 3A 3728	52103 1300	SJ Galloway	52103 1300
SJ Galloway	52103 1300	FED EX	
Fed Ex	5-22-03/0900	DL Smith	5-22-03/0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B03-015-114	Page 1 of 1
Collector R Fahlberg / DL Bowers	Company Contact M Stankovich	Telephone No. 531-7620	Project Coordinator KESSNER, JH	Price Code 8B; Data Turnaround 7 Days
Project Designation Remaining Sites Confirmation Sampling-Soil	Sampling Location 600-190		SAF No. B03-015	Air Quality
Ice Chest No. ERC 96002	Field Logbook No. EL 1577	COA C17HXU671C	Method of Shipment Fed Ex	
Shipped To TMA/RECRA	Offsite Property No. A030236		Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	60mL	250mL	125g	60mL	60mL	125mL	125mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) 5-20-03	TPH (Total) - 418.1	Sulfides - 9030	Total Cyanide - 9010			

Sample No.	Matrix *	Sample Date	Sample Time										
J00P17	SOIL	5-20-03	1410	X	X	X		X	X	X			
J00P18	SOIL	5-20-03	1410	X	X	X		X	X	X			

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Doug Bowers Date/Time: 5-20-03/1515	Received By/Stored In: Ref 3A 3728 Date/Time: 5-20-03/1515		
Relinquished By/Removed From: REF 3A 3728 Date/Time: 52103 1300	Received By/Stored In: S JEALE Date/Time: 52103 1300		
Relinquished By/Removed From: S JEALE Date/Time: 52103 1300	Received By/Stored In: FED EX Date/Time:		
Relinquished By/Removed From: Fed Ex Date/Time: 5-22-03 10900	Received By/Stored In: D J Smith Date/Time: 5-22-03 10900		
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:		
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:		

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-112	Page 1 of 1

Collector: R Fahlberg / DL Bowers	Company Contact: M Stankovich	Telephone No.: 531-7620	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 Days	Air Quality: —	
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 600-190	SAF No.: B03-015	
Ice Chest No.: ERC 99 042	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: A030 236		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area. No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C									
Type of Container	aG	aG	aG									
No. of Container(s)	1	1	1									
Volume	60mL	125g	60mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) KJB 5-20-									
Sample No.	Matrix *	Sample Date	Sample Time									
J00P19	SOIL	5-20-03	1350	X	X							

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Doug Bowers	5-20-03/1515	REF 3A 3728	5-20-03/1515
Relinquished By/Removed From	REF 3A 3728	52103 1300	S J OALE	52103 1300
Relinquished By/Removed From	S J OALE	52103 1300	FEDEX	
Relinquished By/Removed From	Fed Ex	5-22-03/0900		5-22-03/0900
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Do not use for QA/QC

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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

LIENT: TNU Hanford

urchase Order/Project:

DATE: 5-22-03

AF# / SOW# / Release #: B03-015

aboratory SDG #: 0305L472

OTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☒ N/A	☐ see Comment #
10. Shipment meets LvLJ Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☒ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☒ N/A	☐ see Comment #
12. coc signed and dated?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☒ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERC 99-012 / 0.8°C

ERC 96-002 / 0.3°C

Laboratory Sample Custodian: [signature]

Laboratory Project Manager:

RECEIVED
JUN 2003

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2236

DATE RECEIVED: 05/22/03 LVL LOT # :0305L472

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00P15						
SILVER, TOTAL	001	S	03L0295	05/20/03	05/27/03	05/29/03
SILVER, TOTAL	001 REP	S	03L0295	05/20/03	05/27/03	05/29/03
SILVER, TOTAL	001 MS	S	03L0295	05/20/03	05/27/03	05/29/03
ARSENIC, TOTAL	001	S	03L0295	05/20/03	05/27/03	05/29/03
ARSENIC, TOTAL	001 REP	S	03L0295	05/20/03	05/27/03	05/29/03
ARSENIC, TOTAL	001 MS	S	03L0295	05/20/03	05/27/03	05/29/03
BARIUM, TOTAL	001	S	03L0295	05/20/03	05/27/03	05/29/03
BARIUM, TOTAL	001 REP	S	03L0295	05/20/03	05/27/03	05/29/03
BARIUM, TOTAL	001 MS	S	03L0295	05/20/03	05/27/03	05/29/03
CADMIUM, TOTAL	001	S	03L0295	05/20/03	05/27/03	05/29/03
CADMIUM, TOTAL	001 REP	S	03L0295	05/20/03	05/27/03	05/29/03
CADMIUM, TOTAL	001 MS	S	03L0295	05/20/03	05/27/03	05/29/03
CHROMIUM, TOTAL	001	S	03L0295	05/20/03	05/27/03	05/29/03
CHROMIUM, TOTAL	001 REP	S	03L0295	05/20/03	05/27/03	05/29/03
CHROMIUM, TOTAL	001 MS	S	03L0295	05/20/03	05/27/03	05/29/03
MERCURY, TOTAL	001	S	03C0125	05/20/03	05/27/03	05/27/03
MERCURY, TOTAL	001 REP	S	03C0125	05/20/03	05/27/03	05/27/03
MERCURY, TOTAL	001 MS	S	03C0125	05/20/03	05/27/03	05/27/03
LEAD, TOTAL	001	S	03L0295	05/20/03	05/27/03	05/29/03
LEAD, TOTAL	001 REP	S	03L0295	05/20/03	05/27/03	05/29/03
LEAD, TOTAL	001 MS	S	03L0295	05/20/03	05/27/03	05/29/03
SELENIUM, TOTAL	001	S	03L0295	05/20/03	05/27/03	05/29/03
SELENIUM, TOTAL	001 REP	S	03L0295	05/20/03	05/27/03	05/29/03
SELENIUM, TOTAL	001 MS	S	03L0295	05/20/03	05/27/03	05/29/03
J00P16						
SILVER, TOTAL	002	S	03L0295	05/20/03	05/27/03	05/29/03
ARSENIC, TOTAL	002	S	03L0295	05/20/03	05/27/03	05/29/03
BARIUM, TOTAL	002	S	03L0295	05/20/03	05/27/03	05/29/03
CADMIUM, TOTAL	002	S	03L0295	05/20/03	05/27/03	05/29/03
CHROMIUM, TOTAL	002	S	03L0295	05/20/03	05/27/03	05/29/03
MERCURY, TOTAL	002	S	03C0125	05/20/03	05/27/03	05/27/03
LEAD, TOTAL	002	S	03L0295	05/20/03	05/27/03	05/29/03
SELENIUM, TOTAL	002	S	03L0295	05/20/03	05/27/03	05/29/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2236

DATE RECEIVED: 05/22/03 LVL LOT # :0305L472

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00P17						
SILVER, TOTAL	003	S	03L0295	05/20/03	05/27/03	05/29/03
ARSENIC, TOTAL	003	S	03L0295	05/20/03	05/27/03	05/29/03
BARIUM, TOTAL	003	S	03L0295	05/20/03	05/27/03	05/29/03
CADMIUM, TOTAL	003	S	03L0295	05/20/03	05/27/03	05/29/03
CHROMIUM, TOTAL	003	S	03L0295	05/20/03	05/27/03	05/29/03
MERCURY, TOTAL	003	S	03C0125	05/20/03	05/27/03	05/27/03
LEAD, TOTAL	003	S	03L0295	05/20/03	05/27/03	05/29/03
SELENIUM, TOTAL	003	S	03L0295	05/20/03	05/27/03	05/29/03
J00P18						
SILVER, TOTAL	004	S	03L0295	05/20/03	05/27/03	05/29/03
ARSENIC, TOTAL	004	S	03L0295	05/20/03	05/27/03	05/29/03
BARIUM, TOTAL	004	S	03L0295	05/20/03	05/27/03	05/29/03
CADMIUM, TOTAL	004	S	03L0295	05/20/03	05/27/03	05/29/03
CHROMIUM, TOTAL	004	S	03L0295	05/20/03	05/27/03	05/29/03
MERCURY, TOTAL	004	S	03C0125	05/20/03	05/27/03	05/27/03
LEAD, TOTAL	004	S	03L0295	05/20/03	05/27/03	05/29/03
SELENIUM, TOTAL	004	S	03L0295	05/20/03	05/27/03	05/29/03
J00P19						
SILVER, TOTAL	005	S	03L0295	05/20/03	05/27/03	05/29/03
ARSENIC, TOTAL	005	S	03L0295	05/20/03	05/27/03	05/29/03
BARIUM, TOTAL	005	S	03L0295	05/20/03	05/27/03	05/29/03
CADMIUM, TOTAL	005	S	03L0295	05/20/03	05/27/03	05/29/03
CHROMIUM, TOTAL	005	S	03L0295	05/20/03	05/27/03	05/29/03
MERCURY, TOTAL	005	S	03C0125	05/20/03	05/27/03	05/27/03
LEAD, TOTAL	005	S	03L0295	05/20/03	05/27/03	05/29/03
SELENIUM, TOTAL	005	S	03L0295	05/20/03	05/27/03	05/29/03

LAB QC:

SILVER LABORATORY	LC1 BS	S	03L0295	N/A	05/27/03	05/28/03
SILVER, TOTAL	MB1	S	03L0295	N/A	05/27/03	05/28/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2236

DATE RECEIVED: 05/22/03 LVL LOT # :0305L472

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ARSENIC LABORATORY	LC1 BS	S	03L0295	N/A	05/27/03	05/28/03
ARSENIC, TOTAL	MB1	S	03L0295	N/A	05/27/03	05/28/03
BARIUM LABORATORY	LC1 BS	S	03L0295	N/A	05/27/03	05/28/03
BARIUM, TOTAL	MB1	S	03L0295	N/A	05/27/03	05/28/03
CADMIUM LABORATORY	LC1 BS	S	03L0295	N/A	05/27/03	05/28/03
CADMIUM, TOTAL	MB1	S	03L0295	N/A	05/27/03	05/28/03
CHROMIUM LABORATORY	LC1 BS	S	03L0295	N/A	05/27/03	05/28/03
CHROMIUM, TOTAL	MB1	S	03L0295	N/A	05/27/03	05/28/03
MERCURY LABORATORY	LC1 BS	S	03C0125	N/A	05/27/03	05/27/03
MERCURY, TOTAL	MB1	S	03C0125	N/A	05/27/03	05/27/03
LEAD LABORATORY	LC1 BS	S	03L0295	N/A	05/27/03	05/28/03
LEAD, TOTAL	MB1	S	03L0295	N/A	05/27/03	05/28/03
SELENIUM LABORATORY	LC1 BS	S	03L0295	N/A	05/27/03	05/28/03
SELENIUM, TOTAL	MB1	S	03L0295	N/A	05/27/03	05/28/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B03-015
LVL#: 0305L472
SDG/SAF#: H2236/B03-015

W.O.#: 11343-606-001-9999-00
Date Received: 05-22-03

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.

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

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

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 22 pages.

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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.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/2/03
Date

jjw/m05-472

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 03052-472

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	X 6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X 6010B		__200.7				__99
Beryllium	__6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	X 6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	X 6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	__6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	X 6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	__7470A [3]	X 7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	__6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X 6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X 6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2__200.9			__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ **Method:**_____

L-WI-033/M-03/01

6

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 05/30/03

CLIENT: TNUHANFORD B03-015 H2236 LVL LOT #: 0305L472

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J00P15	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	1.8	MG/KG	0.33	1.0
		Barium, Total	66.0	MG/KG	0.02	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	12.1	MG/KG	0.1	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	4.7	MG/KG	0.23	1.0
		Selenium, Total	0.41 u	MG/KG	0.41	1.0
-002	J00P16	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	2.2	MG/KG	0.30	1.0
		Barium, Total	67.8	MG/KG	0.02	1.0
		Cadmium, Total	0.12	MG/KG	0.04	1.0
		Chromium, Total	13.8	MG/KG	0.09	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	10.8	MG/KG	0.21	1.0
		Selenium, Total	0.38 u	MG/KG	0.38	1.0
-003	J00P17	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	2.5	MG/KG	0.32	1.0
		Barium, Total	65.8	MG/KG	0.02	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	13.1	MG/KG	0.1	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	4.0	MG/KG	0.22	1.0
		Selenium, Total	0.40 u	MG/KG	0.40	1.0
-004	J00P18	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	2.4	MG/KG	0.32	1.0
		Barium, Total	81.5	MG/KG	0.02	1.0
		Cadmium, Total	0.06	MG/KG	0.04	1.0
		Chromium, Total	13.8	MG/KG	0.1	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	4.0	MG/KG	0.22	1.0
		Selenium, Total	0.41 u	MG/KG	0.41	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2236 LVL LOT #: 0305L472

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J00P19	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	0.32 u	MG/KG	0.32	1.0
		Barium, Total	0.86	MG/KG	0.02	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.24	MG/KG	0.1	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Lead, Total	0.40	MG/KG	0.22	1.0
		Selenium, Total	0.41 u	MG/KG	0.41	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/30/03

CLIENT: TNUHANFORD B03-015 H2236 LVL LOT #: 0305L472

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	03L0295-MB1	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	0.33 u	MG/KG	0.33	1.0
		Barium, Total	0.03	MG/KG	0.02	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.12	MG/KG	0.10	1.0
		Lead, Total	0.42	MG/KG	0.23	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0
BLANK1	03C0125-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2236

LVL LOT #: 0305L472

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J00P15	Silver, Total	4.7	0.12u	4.9	95.9	1.0
		Arsenic, Total	191	1.8	197	95.6	1.0
		Barium, Total	245	66.0	197	90.7	1.0
		Cadmium, Total	4.8	0.04u	4.9	98.0	1.0
		Chromium, Total	31.6	12.1	19.7	99.0	1.0
		Mercury, Total	0.17	0.02u	0.16	104.4	1.0
		Lead, Total	52.9	4.7	49.3	97.8	1.0
		Selenium, Total	172	0.41u	197	87.1	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2236 LVL LOT #: 0305L472

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J00P15	Silver, Total	0.12u	0.12u	NC	1.0
		Arsenic, Total	1.8	2.2	20.0	1.0
		Barium, Total	66.0	65.4	0.91	1.0
		Cadmium, Total	0.04u	0.04u	NC	1.0
		Chromium, Total	12.1	14.1	15.3	1.0
		Mercury, Total	0.02u	0.02u	NC	1.0
		Lead, Total	4.7	4.8	2.1	1.0
		Selenium, Total	0.41u	0.41u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2236 LVL LOT #: 0305L472

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	03L0295-LC1	Silver, LCS	48.9	50.0	MG/KG	97.8
		Arsenic, LCS	917	1000	MG/KG	91.7
		Barium, LCS	491	500	MG/KG	98.3
		Cadmium, LCS	23.8	25.0	MG/KG	95.2
		Chromium, LCS	49.2	50.0	MG/KG	98.4
		Lead, LCS	239	250	MG/KG	95.5
		Selenium, LCS	864	1000	MG/KG	86.4
LCS1	03C0125-LC1	Mercury, LCS	6.5	6.2	MG/KG	105.2

Lionville Laboratory Use Only

03051472

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford 803-015

Est. Final Proj. Sampling Date:

Project #: 11343-606-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: Dolotta Johnson

QC: SPEC Del: STD TAT: Today

Date Rec'd: 5-22-03 Date Due: 5-29-03

		A	B					C	D	E	F				
Refrigerator #		2	2					2			1				
#/Type Container	Liquid														
	Solid	1aq	1aq	1				1aq	1aq	1aq	1aq				
Volume	Liquid							0							
	Solid	125	250	1				60	125	60	125				
Preservatives		—	—					—	—	—	—				

ANALYSES REQUESTED →

	ORGANIC							INORG			
	VOA	BNA	Pest/PCB	Herb				Metal	CN	TPH 418.1	Sulfide

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		8260	8270	8081 PCB	8151			MACRO	ICP/O	IPHC	ISFD				
001	J00P15			S	5-20-03	1330		X	X	X				X		X					
002	J00P16					1300		X	X	X				X		X					
003	J00P17					1410		X	X	X				X	X	X	X				
004	J00P18					1		X	X	X				X	X	X	X				
005	J00P19					1350		X						X							

Special Instructions: SAF # 803-015

Run Matrix QC (Do Not use - 005)

DATE/REVISIONS:

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

Lionville Laboratory Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___ Airbill # ___

2) Ambient or Chilled

3) Received in Good Condition Y or N

4) Samples Properly Preserved Y or N

5) Received Within Holding Times Y or N

Tamper Resistant Seal was: 1) Present on Outer Package Y or N

2) Unbroken on Outer Package Y or N

3) Present on Sample Y or N

4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. 0.3 °C

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

Relinquished by	Received by	Date	Time
Howe	D. Arnold	5-22-03	0900

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

11 7922 5297 1515/0.8°C 7922 5297 1555

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-111	Page 1 of 1

Collector: R Fahlberg / DL Bowers	Company Contact: M Stankovich	Telephone No.: 531-7620	Project Coordinator: KESSNER, JH
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 600-190		SAF No.: B03-015
Ice Chest No.: ERC 99 042	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: A030236		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 8B
Air Quality: —
Data Turnaround: 7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area. No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1	1							
Volume	60mL	250mL	125g	60mL	60mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1							
Sample No. / Matrix * / Sample Date / Sample Time												
J00P15 / SOIL / 5-20-03 / 1330	X	X	X		X							
J00P16 / SOIL / 5-20-03 / 1300	X	X	X		X							

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Bowers	5-20-03/1515	Ref 3A 3728	5-20-03/1515
Ref 3A 3728	52103 1300	SJ Galen	52103 1300
SJ Galen	52103 1300	FED EX	
Fed Ex	5-22-03/0900	D Smith	5-22-03/0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-114	Page 1 of 1

Collector: R Fahlberg / DL Bowers	Company Contact: M Stankovich	Telephone No.: 531-7620	Project Coordinator: KESSNER, JH
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 600-190		SAF No.: B03-015
Ice Chest No.: ERC 96002	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: A030236		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 8B
Air Quality: –
Data Turnaround: 7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	60mL	250mL	125g	60mL	60mL	125mL	125mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL) 8-20 5-20-03	TPH (Total) - 418.1	Sulfides - 9030	Total Cyanide - 9010			

Sample No.	Matrix *	Sample Date	Sample Time										
J00P17	SOIL	5-20-03	1410	X	X	X		X	X	X			
J00P18	SOIL	5-20-03	1410	X	X	X		X	X	X			

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Bowers	5-20-03/1515	Ref 3A 3728	5-20-03/1515
REF 3A 3728	52103 1300	S. Gale	52103 1300
S. Gale	52103 1300	FED EX	
Fed Ex	5-22-03 10900	D. Smith	5-22-03 10900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-112	Page 1 of 1

Collector: R Fahlberg / DL Bowers	Company Contact: M Stankovich	Telephone No.: 531-7620	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 Days	Air Quality: —	
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 600-190	SAF No.: B03-015	
Ice Chest No.: ERC 99 042	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: A030 236		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area. No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C									
Type of Container	aG	aG	aG									
No. of Container(s)	1	1	1									
Volume	60mL	125g	60mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)									
Sample No.	Matrix *	Sample Date	Sample Time									
J00P19	SOIL	5-20-03	1350	X	X							

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DL Bowers	5-20-03/1515	REF 3A 3728	5-20-03/1515
REF 3A 3728	52103 1300	SJOALL	52103 1300
SJOALL	52103 1300	FEDEX	
Fed Ex	5-22-03/0800		5-22-03/0800

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Do not use for QA/QC

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

IENT: TNU Hanford

chase Order/Project:

DATE: 5-22-03

F# / SOW# / Release #: B03-015

oratory SDG #: 0305L472

TE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
2. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
5. Sample containers are intact?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
7. All samples on coc received?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
8. All sample label information matches coc?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☑ N/A	☐ see Comment #
10. Shipment meets LvL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
11. Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☑ N/A	☐ see Comment #
12. coc signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
13. coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☑ N/A	☐ see Comment #

oler # / temp (°C) and Comments:

ERC 99-042 / 0.8°C

ERC 96-002 / 0.3°C

oratory Sample Custodian:

oratory Project Manager:

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 03L0295
Date/Time Initiated: 5/27/03 1500
Date/Time Completed: 5/27/03 1730
Analyst(s): TDB
Matrix: (Soil) Water (Other:) SOLIDS
Instr. Type: AA (ICP)
Parameters: RCRA

(Digested) / Undigested (circle one)
Balance #: B20
Balance Cal Verif: ✓ NA
Hot Plate Temp: 90°

Method: SW (circle) 3005A, 3010A, 3015, 3020A, 7060A (As/Se), 7760A (Ag), (3050B), 3051
DW 200.7 (1994), 200.9, 3113B
MCAWW 200.7 (1982), 200 (AA), 206.2 (As/Se)
SM 3030C (NC)
CLP ILMO3.0, ILMO4.0
Other _____

TNU

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
03OSL461-001		1.01	100	N/A	TOT	COARSE	BROWN	N/A	N/A
001R		1.14							
001S	1.0	1.10							
03OSL471-001		1.00					yellow/tan		
-001R		1.03							
-001S	1.0	1.05							
03OSL472-001		1.07				fine	BROWN		
-001R		1.09							
-001S	1.0	1.07							
-002		~~1.081~~							
-003		1.08							
-004		1.07							
-005		1.03				COARSE			
03OSL474-001		1.06				fine			
-002		1.03							
-002R		1.09							
-002S	1.0	1.08							
-003		1.05							
03L0295-MB1		1.0		<2		N/A	CLEAR		
LC1	1.0								

TDB 5/27/03

Spiking IDs:
MS #: 8100-02-09
-10
-11
6072-56-01
LCS #: 6072-55-12
-13
-14
-15

Reagent IDs:
HNO_3 Y12033
HCL Y07045
H_2O_2 5240X43H03
1:1 HNO_3 8727-54-01
1:1 HCL

File ID#: IC029501
LIMS Transfer: (Y) N
Data Review By/Date: updated RMP, 05/29/03

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 9236

Analyst: [signature]
Date 5/27/03
Start Time/Temp: 1410 / 95°C
End Time/Temp: 1440 / 98°C

Instrument ID ~~H61.1~~ H63.1 MW 5/28/03
Balance #: B29 /NA
Pipette Calibration (Daily) (Y) ___

Prep Batch: 03C0125
Worksheet: H6052701
OP No. ME-7470A, Rev. 00

pH < 2 for Liquids? __ Yes N/A No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Initial/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
blank	19			10 ml	50 ml	
0.2 ug/l	L1	0.100				
1.0 ug/l	2	0.500				
2.0 ug/l	50	1.000				
5.0 ug/l	X6	2.500				
10.0 ug/l	L7	5.000				
ICV	L58	0.125	2.5			
CCV	318	0.250	5.0			
ICB/CCB	16/428					% solids
MB1	198			0.30 gm		PBS125 100.00
LCS	917	*	*	0.16 gm		LCSS125 ↓
0305L453-001 C	981			0.32 gm		99.22
001R	P13			0.35 gm		
001S	210	0.500	1.0	0.32 gm		
0305L454-001	767			0.31 gm		98.72
001R	702			0.32 gm		
001S	501	0.500	1.0	0.31 gm		
002	207			0.34 gm		98.84
003	303			0.38 gm		97.82
004	N6			0.33 gm		98.17
005	L5			0.35 gm		99.97
0305L455-001 A	695			1½ wipes (1.01 gm)		RAD ~~100.00~~ wipes - MW 5/28/03 report as total

Standard:	ID	Prep Date/Time
ICAL/MS	SCP 6072-056-02B	5/27/03 1245
ICV/CCV/LCS	US 6072-056-03A	↓

Reviewed By/Date:

See book # 4527 for std traceability information

* Soil LCS = ERA Metals in soil; True Value = ~~2.48~~ 6.21 mg/Kg MW 5/27/03
Catalogue # 540, Lot # ~~248~~ 248 MW 5/27/03

Water Matrix Spiking Solution Concentration= 0.1µg/ml
Water LCS Spiking Concentration: 1.0µg/ml

ME-7470A-C-0801

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 9236

Analyst: [signature]

Date 5/27/03

Start Time/Temp: See pg 120B

End Time/Temp:

Instrument ID ~~HG1.1~~ HG3.1 MW 5/28/03

Balance #: B29 /NA

Pipette Calibration (Daily) (Y) ___

Prep Batch: 03C0125

Worksheet: HG052701

OP No. ME-7470A, Rev. 00

pH < 2 for Liquids? __ Yes N/A No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Initial/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
0305L461-001 C	58			0.36gm	50ml	~~99.9~~ 99.97
001R	781			0.38gm		MW 5/28/03
001S	312	0.500	1.0	0.36gm		
0305L471-001	B41			0.34gm		99.96
001R	329			0.36gm		
001S	P7	0.500	1.0	0.34gm		
0305L472-001	X5			0.33gm		94.69
001R	B32			0.32gm		
001S	442	0.500	1.0	0.33gm		
002	523			0.33gm		96.08
003	725			0.33gm		96.65
004	465			0.33gm		96.15
005	764			0.35gm		99.96
0305L474-001	121			0.34gm		99.34
001R	L56			0.36gm		
001S	L51	0.500	1.0	0.34gm		
002	762			0.33gm		99.05
003	B19			0.33gm		99.13
0305L490-001 Δ	28			0.33gm		99.53
001R	P5			0.32gm		
001S	213	0.500	1.0	0.33gm		
002	L10			0.35gm		99.97

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	See page 120B	

Reviewed By/Date:

See book # 4527 for std traceability information

Soil LCS = ERA Metals in soil; True Value = 2.48 mg/Kg
Catalogue # 540, Lot # 245

Water Matrix Spiking Solution Concentration= 0.1µg/ml
Water LCS Spiking Concentration: 1.0µg/ml

ME-7470A-C-0801

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 9236

Analyst: [illegible]
Date 5/27/03
Start Time/Temp: See pg 120B
End Time/Temp: See pg 120B

Instrument ID HG3.1
Balance #: B29 /NA
Pipette Calibration (Daily) (Y) ___

Prep Batch: 03C0125
Worksheet: H0052701
OP No. ME-7470A, Rev. 00

pH < 2 for Liquids? __ Yes N/A No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: **The Initial/Final Volume for water samples = 33mL, unless otherwise noted.**
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
03052455-003 D	200			0.32gm	50ml	98.55
5/27/03 MV 490						

MV 5/27/03

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	See page 120B	

Reviewed By/Date: ___

See book # 4527 for std traceability information

Soil LCS = ERA Metals in soil; True Value = 2.48 mg/Kg
Catalogue # 540, Lot # 245

Water Matrix Spiking Solution Concentration= 0.1µg/ml
Water LCS Spiking Concentration: 1.0µg/ml

ME-7470A-C-0801

RECEIVED
JUN 2003

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2236

DATE RECEIVED: 05/22/03 LVL LOT # :0305L472

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00P15						
% SOLIDS	001	S	03L%S071	05/20/03	05/23/03	05/24/03
PETROLEUM HYDROCARBO	001	S	03LHC027	05/20/03	05/27/03	05/28/03
PETROLEUM HYDROCARBO	001 MS	S	03LHC027	05/20/03	05/27/03	05/28/03
PETROLEUM HYDROCARBO	001 MSD	S	03LHC027	05/20/03	05/27/03	05/28/03
J00P16						
% SOLIDS	002	S	03L%S071	05/20/03	05/23/03	05/24/03
PETROLEUM HYDROCARBO	002	S	03LHC027	05/20/03	05/27/03	05/28/03
J00P17						
% SOLIDS	003	S	03L%S071	05/20/03	05/23/03	05/24/03
TOTAL CYANIDE	003	S	03LC048	05/20/03	05/27/03	05/27/03
PETROLEUM HYDROCARBO	003	S	03LHC027	05/20/03	05/27/03	05/28/03
SULFIDE	003	S	03LSD024	05/20/03	05/27/03	05/28/03
J00P18						
% SOLIDS	004	S	03L%S071	05/20/03	05/23/03	05/24/03
TOTAL CYANIDE	004	S	03LC048	05/20/03	05/27/03	05/27/03
TOTAL CYANIDE	004 REP	S	03LC048	05/20/03	05/27/03	05/27/03
TOTAL CYANIDE	004 MS	S	03LC048	05/20/03	05/27/03	05/27/03
PETROLEUM HYDROCARBO	004	S	03LHC027	05/20/03	05/27/03	05/28/03
SULFIDE	004	S	03LSD024	05/20/03	05/27/03	05/28/03
SULFIDE	004 REP	S	03LSD024	05/20/03	05/27/03	05/28/03
SULFIDE	004 MS	S	03LSD024	05/20/03	05/27/03	05/28/03
J00P19						
% SOLIDS	005	S	03L%S071	05/20/03	05/23/03	05/24/03

LAB QC:

PETROLEUM HYDROCARBO	LC1 BS	S	03LHC027	N/A	05/27/03	05/28/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-015 H2236

DATE RECEIVED: 05/22/03 LVL LOT # :0305L472

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
PETROLEUM HYDROCARBO	MB1	S	03LHC027	N/A	05/27/03	05/28/03
TOTAL CYANIDE	LCS L	S	03LC048	N/A	05/27/03	05/27/03
TOTAL CYANIDE	LCS L	S	03LC048	N/A	05/27/03	05/27/03
TOTAL CYANIDE	MB1	S	03LC048	N/A	05/27/03	05/27/03
SULFIDE	MB1	S	03LSD024	N/A	05/27/03	05/28/03
SULFIDE	MB1 BS	S	03LSD024	N/A	05/27/03	05/28/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B03-015 H2236
LVL#: 0305L472

W.O.#: 11343-606-001-9999-00
Date Received: 05-22-03

INORGANIC NARRATIVE

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

2. The samples were 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 results presented in this report are derived from samples that met LvLI's sample acceptance policy.

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits.

7. The matrix spike recoveries for Total Cyanide, Sulfide, and Petroleum Hydrocarbons (PHC) were within the 75-125% control limits. The matrix spike duplicate for PHC was within the 20% Relative Percent Difference (RPD) control limit.

8. The replicate analyses for Total Cyanide and Sulfide were within the 20% 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 package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/2/03
Date

njp\i05-472

The results presented in this report relate to the analytical testing and conditions of the samples upon 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

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% 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(mod.)
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:	**Method:**		
Other:	**Method**		

L-WI-034/B-01/01

Lionville Laboratory Incorporated

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.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2236 LVL LOT #: 0305L472

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J00P15	% Solids	94.7		%	0.01	1.0
		Petroleum Hydrocarbons	5.0		MG/KG	3.5	1.0
-002	J00P16	% Solids	96.1		%	0.01	1.0
		Petroleum Hydrocarbons	24.8		MG/KG	3.5	1.0
-003	J00P17	% Solids	96.6		%	0.01	1.0
		Cyanide, Total	0.28	u	MG/KG	0.28	1.0
		Petroleum Hydrocarbons	3.4	u	MG/KG	3.4	1.0
		Sulfide	24.6	u	MG/KG	24.6	1.0
-004	J00P18	% Solids	96.2		%	0.01	1.0
		Cyanide, Total	0.43	u	MG/KG	0.43	1.0
		Petroleum Hydrocarbons	3.8		MG/KG	3.5	1.0
		Sulfide	23.9	u	MG/KG	23.9	1.0
-005	J00P19	% Solids	100		%	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/30/03

CLIENT: TNUHANFORD B03-015 H2236 LVL LOT #: 0305L472

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	03LHC027-MB1	Petroleum Hydrocarbons	3.3	u	MG/KG	3.3	1.0
BLANK1	03LC048-MB1	Cyanide, Total	0.50	u	MG/KG	0.50	1.0
BLANK10	03LSD024-MB1	Sulfide	40.0	u	MG/KG	40.0	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2236 LVL LOT #: 0305L472

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J00P15	Petroleum Hydrocarbons	142	5.0	147	92.9	1.0
		Petroleum Hydrocarbons	146	5.0	147	95.5	1.0
-004	J00P18	Cyanide, Total	4.09	0.43u	4.30	95.1	1.0
		Sulfide	319	23.9u	339	90.8	1.0
LCS10	03LHC027-LC1	Petroleum Hydrocarbons	125	3.3 u	140	89.6	1.0
BLANK10	03LSD024-MB1	Sulfide	523	40.0 u	541	96.5	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2236 LVL LOT #: 0305L472

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

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
-001	J00P15	Petroleum Hydrocarbons	92.9	95.5	2.7

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2236 LVL LOT #: 0305L472

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-004REP	J00P18	Cyanide, Total	0.43u	0.42u	NC	1.0
		Sulfide	23.9 u	28.8 u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2236 LVL LOT #: 0305L472

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCSS1	03LC048-LCS1	Cyanide, Total LCS	1.90	2.0	MG/KG	95.0
LCSS2	03LC048-LCS2	Cyanide, Total LCS	10.0	10.0	MG/KG	100.3

Lionville Laboratory Use Only

0305L472

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI LIONVILLE LABORATORY INC.

12

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B03-015

Est. Final Proj. Sampling Date:

Project #: 11343-606-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPEC Del: STD TAT: Today

Date Rec'd: 5-22-03 Date Due: 5-29-03

		A	B		C	D	E	F
Refrigerator #		2	2		2	—	—	1
#/Type Container	Liquid							
	Solid	lag	lag	1	lag	lag	lag	lag
Volume	Liquid							
	Solid	125	250	1	60	125	60	125
Preservatives		—	—		—	—	—	1

ANALYSES REQUESTED →

	ORGANIC				INORG			
	VOA	BNA	Pest/PCB	Herb	Metal	CN	TPH 418.1	Sulfide
Lab ID		0625H	0608H OPCB	OHBGX	MRCRATO	ICNTO	IPHC	ISFD
001		X	X	X	X		X	
002		X	X	X	X		X	
003		X	X	X	X	X	X	X
004		X	X	X	X	X	X	X
005		X			X			

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
001	J00P15			S	5-20-03	1330
002	J00P16					1300
003	J00P17					1410
004	J00P18					1
005	J00P19					1350

Special Instructions: SAF # B03-015

Run Matrix QC (Do Not Use - 005)

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

Lionville Laboratory Use Only

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

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. 0.3 °C

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

Relinquished by	Received by	Date	Time
[signature]	[signature]	5-22-03	0900

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

#7922 5297 1515/0.8 - 7922 5297 1559

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-111	Page 1 of 1

Collector: R Fahlberg / DL Bowers	Company Contact: M Stankovich	Telephone No.: 531-7620	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 Days	Air Quality: —	
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 600-190		SAF No.: B03-015
Ice Chest No.: ERC 99042	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: AC30236		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	aG	aG	aG	aG	aG						
No. of Container(s)	1	1	1	1	1						
Volume	60mL	250mL	125g	60mL	60mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1						

Sample No.	Matrix *	Sample Date	Sample Time										
J00P15	SOIL	5-20-03	1730	X	X	X		X					
J00P16	SOIL	5-20-03	1700	X	X	X		X					

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Doug Bowers	5-20-03/1575	Ref 3A 3728	5-20-03/1575
Relinquished By/Removed From	Ref 3A 3728	52103 1300	S J Galle	52103 1300
Relinquished By/Removed From	S J Galle	52103 1300	FED EX	
Relinquished By/Removed From	Fed Ex	5-22-03/0900	[illegible]	5-22-03/0900
Relinquished By/Removed From		Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From		Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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)

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Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-114	Page 1 of 1

Collector: R Fahlberg / DL Bowers	Company Contact: M Stankovich	Telephone No.: 531-7620	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 Days	Air Quality: —	
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 600-190	SAF No.: B03-015	
Ice Chest No.: ERC 96002	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: A030236	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	60mL	250mL	125g	60mL	60mL	125mL	125mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1	Sulfides - 9030	Total Cyanide - 9010			

Sample No.	Matrix *	Sample Date	Sample Time										
J00P17	SOIL	5-20-03	1410	X	X	X		X	X	X			
J00P18	SOIL	5-20-03	1410	X	X	X		X	X	X			

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Bowers	5-20-03/1515	Ref 3A 3728	5-20-03/1515
REF 3A 3728	52103 1300	S. SGALE	52103 1300
S. SGALE	52103 1300	FED EX	
Fed Ex	5-22-03 10:00	D. Smith	5-22-03/10:00

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B03-015-112	Page 1 of 1

Collector: R Fahlberg / DL Bowers	Company Contact: M Stankovich	Telephone No.: 531-7620	Project Coordinator: KESSNER, JH
Project Designation: Remaining Sites Confirmation Sampling-Soil	Sampling Location: 600-190		SAF No.: B03-015
Ice Chest No.: ERC 99 042	Field Logbook No.: EL 1577	COA: C17HXU671C	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: A030 236		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 8B

Air Quality: —

Data Turnaround: 7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Sample Originated From Non-Rad Area, No Activity Report Required

Special Handling and/or Storage

Cool 4 c

Preservation	None	Cool 4C	Cool 4C
Type of Container	aG	aG	aG
No. of Container(s)	1	1	1
Volume	60mL	125g	60mL

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)
J00P19	SOIL	5-20-03	1350	X	X	

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers	5-20-03/1515	Ref 3A 3728	5-20-03/1515
REF 3A 3728	52103 1300	SJGALE	52103 1300
SJGALE	52103 1300	FED EX	
Fed Ex	5-22-03/0900	[illegible]	5-22-03/0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)

Do not use for QA/QC

Personnel not available to relinquish samples from the 3728 Ref # 3A on 5/21/03

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)

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LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

LIENT: TNU Hanford

urchase Order/Project:

DATE: 5-22-03

AF# / SOW# / Release #: B03-015

aboratory SDG #: 0305L472

OTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3.	Airbill # recorded?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
5.	Sample containers are intact?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
7.	All samples on coc received?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
8.	All sample label information matches coc?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☑ N/A	☐ see Comment #
10.	Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
11.	Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☑ N/A	☐ see Comment #
12.	coc signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
13.	coc will be faxed or emailed to client?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☑ N/A	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERC 99-042 / 0.8°C

ERC 96-002 / 0.3°C

Laboratory Sample Custodian: [signature]

Laboratory Project Manager: