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SAF-RC-047
100 & 300 Area Component of the RCBRA Sediment and Tissues
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Jeanette Duncan (2) H9-02 DE 07/05/06
INITIAL/DATE

COMMENTS:

SDG K0238 SAF-RC-047

Waste Site: 300 Area Elevated, 100-K Low, 100-K Elevated

RECEIVED
JUL 12 2006
EDMC

Date: 19 June 2006
To: Washington Closure Hanford (technical representative)
From: TechLaw, Inc.
Project: 100 Area and 300 Area Component of the RCBRA Sediment & Tissue
Subject: PCB/Pesticide - Data Package No. K0238-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K0238 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J11807	2/23/06	Solid	C	See note 1
J11863	2/23/06	Solid	C	See note 1
J11864	2/23/06	Solid	C	See note 1
J11865	2/23/06	Solid	C	See note 1
J11866	2/23/06	Solid	C	See note 1
J11867	2/23/06	Solid	C	See note 1
J11868	2/23/06	Solid	C	See note 1

1 – Pesticides by 8081A and PCBs by 8082.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area and 300 Area Component of the RCBRA Sampling & Analysis Plan (DOE/RL-2005-42, Rev. 0, October 2005). Appendices 1 through 5 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

- **Holding Times & Sample Preservation**

Sample data were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded by less than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-

detects. If holding times are exceeded by greater than two times the limit, all associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

Due to the holding time being exceeded by less than twice the limit, all pesticide and PCB results were qualified as estimates and flagged "J".

- **Method Blank**

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than required quantitation limit (RQL). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than RQL, the result is qualified as undetected and elevated to the RQL.

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike & Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 80% to 120%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

Due to matrix spike (12%), matrix spike duplicate (14%) and LCS (24%) recoveries outside QC limits, all endrin aldehyde results were qualified as estimates and flagged "J".

Due to matrix spike (36%), matrix spike duplicate (37%) and LCS (28%) recoveries outside QC limits, all endosulfan sulfate results were qualified as estimates and flagged "J".

Due to matrix spike (53%), matrix spike duplicate (55%) and LCS (48%) recoveries outside QC limits, all endrin ketone results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all toxaphene results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For soil samples, results must be within RPD limits of plus/minus 20%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to the lack of a matrix spike and matrix spike duplicate analysis, all toxaphene results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the project specific RQLs to ensure that laboratory detection levels meet the required criteria. All undetected results exceeded the RQL. Under the WCH statement of work, no qualification is required.

- **Completeness**

Data Package No. K0238 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the holding time being exceeded by less than twice the limit, all pesticide and PCB results were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike, matrix spike duplicate and LCS analysis, all toxaphene results were qualified as estimates and flagged "J".
- Due to matrix spike (12%), matrix spike duplicate (14%) and LCS (24%) recoveries outside QC limits, all endrin aldehyde results were qualified as estimates and flagged "J".
- Due to matrix spike (36%), matrix spike duplicate (37%) and LCS (28%) recoveries outside QC limits, all endosulfan sulfate results were qualified as estimates and flagged "J".

- Due to matrix spike (53%), matrix spike duplicate (55%) and LCS (48%) recoveries outside QC limits, all endrin ketone results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the BHI statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

All results exceeded the RQL. Under the WCH validation statement of work, no qualification is required.

REFERENCES

WCH, Contract #20266, *Validation Statement of Work*, Washington Closure Hanford Incorporated, July 7, 2003.

DOE/RL-2005-42, Rev. 0, October 2005, *100 Area and 300 Area Component of the RCBRA Sampling & Analysis Plan*.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

PESTICIDE/PCB DATA QUALIFICATION SUMMARY*

SDG: K0238	REVIEWER: TLI	Project: RCBRA	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	J	All	Holding time
Endrin ketone Endosulfan sulfate Endrin aldehyde	J	All	MS, MSD and LCS recovery
Toxaphene	J	All	No MS, MSD or LCS

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

PESTICIDE/PCB ANALYSIS, SOLID MATRIX, (UG/KG)

Project: WASHINGTON CLOSURE HANFORD															
Laboratory: LLI	SDG: K0238														
Sample Number		J11807		J11863		J11864		J11865		J11866		J11867		J11868	
Remarks															
Sample Date		2/23/06		2/23/06		2/23/06		2/23/06		2/23/06		2/23/06		2/23/06	
Extraction Date		3/22/06		3/22/06		3/22/06		3/22/06		3/22/06		3/22/06		3/22/06	
Analysis Date		3/31/06		4/1/06		4/1/06		4/1/06		4/1/06		4/1/06		4/1/06	
PCB	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aroclor-1016		330	UJ	230	UJ	260	UJ	230	UJ	310	UJ	270	UJ	200	UJ
Aroclor-1221		330	UJ	230	UJ	260	UJ	230	UJ	310	UJ	270	UJ	200	UJ
Aroclor-1232	16.5	330	UJ	230	UJ	260	UJ	230	UJ	310	UJ	270	UJ	200	UJ
Aroclor-1242	16.5	330	UJ	230	UJ	260	UJ	230	UJ	310	UJ	270	UJ	200	UJ
Aroclor-1248		330	UJ	230	UJ	260	UJ	230	UJ	310	UJ	270	UJ	200	UJ
Aroclor-1254	16.5	330	UJ	230	UJ	260	UJ	230	UJ	310	UJ	270	UJ	200	UJ
Aroclor-1260	16.5	330	UJ	230	UJ	260	UJ	230	UJ	310	UJ	270	UJ	200	UJ
Sample Number		J11807		J11863		J11864		J11865		J11866		J11867		J11868	
Remarks															
Sample Date		2/23/06		2/23/06		2/23/06		2/23/06		2/23/06		2/23/06		2/23/06	
Extraction Date		3/22/06		3/22/06		3/22/06		3/22/06		3/22/06		3/22/06		3/22/06	
Analysis Date		4/2/06		4/2/06		4/2/06		4/2/06		4/2/06		4/2/06		4/2/06	
Pesticide	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Alpha-BHC	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
Gamma-BHC (Lindane)	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
Beta-BHC	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
Heptachlor	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
Delta-BHC	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
Aldrin	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
Heptachlor Epoxide	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
Endosulfan I	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
Dieldrin	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
4,4'-DDE	5	30	J	6.4	J	7.2	J	24	J	10	J	34	UJ	8.1	J
Endrin	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
Endosulfan II	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
4,4'-DDD	5	41	UJ	29	UJ	33	UJ	6.4	J	38	UJ	34	UJ	25	UJ
Endosulfan Sulfate	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
4,4'-DDT	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
Methoxychlor	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
Endrin Ketone	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
Endrin Aldehyde	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
alpha-Chlordane	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	25	UJ
gamma-Chlordane	5	41	UJ	29	UJ	33	UJ	29	UJ	38	UJ	34	UJ	5.0	J
Toxaphene	5	410	UJ	290	UJ	330	UJ	290	UJ	380	UJ	340	UJ	250	UJ

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize miss-interpretation of results. All other qualifiers shown were applied during validation.

000011

Scientific Laboratory, Inc.

PCBs by GC

Report Date: 04/13/06 17:16

RFW Batch Number: 0603L498 Client: TNUHANFORD RC-047 K0238 Work Order: 11343606001 Page: 1

	Cust ID:	J11807	J11807	J11807	J11863	J11864	J11865
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate: Tetrachloro-m-xylene		118 %	89 %	101 %	116 %	112 %	115 %
Decachlorobiphenyl		115 %	87 %	99 %	115 %	120 %	118 %
Aroclor-1016		330 U J	74 %	87 %	230 U J	260 U J	230 U J
Aroclor-1221		330 U	240 U	330 U	230 U	260 U	230 U
Aroclor-1232		330 U	240 U	330 U	230 U	260 U	230 U
Aroclor-1242		330 U	240 U	330 U	230 U	260 U	230 U
Aroclor-1248		330 U	240 U	330 U	230 U	260 U	230 U
Aroclor-1254		330 U	240 U	330 U	230 U	260 U	230 U
Aroclor-1260		330 U	80 %	94 %	230 U	260 U	230 U

	Cust ID:	J11866	J11867	J11868	PBLKEG	PBLKEG BS
Sample Information	RFW#:	005	006	007	06LE0221-MB1	06LE0221-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate: Tetrachloro-m-xylene		114 %	115 %	109 %	101 %	109 %
Decachlorobiphenyl		111 %	113 %	105 %	96 %	106 %
Aroclor-1016		310 U J	270 U J	200 U J	13 U	87 %
Aroclor-1221		310 U	270 U	200 U	13 U	13 U
Aroclor-1232		310 U	270 U	200 U	13 U	13 U
Aroclor-1242		310 U	270 U	200 U	13 U	13 U
Aroclor-1248		310 U	270 U	200 U	13 U	13 U
Aroclor-1254		310 U	270 U	200 U	13 U	13 U
Aroclor-1260		310 U	270 U	200 U	13 U	94 %

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

4/13/06

4/17/06

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Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 04/19/06 09:04

RFW Batch Number: 0603L498 Client: TNUHANFORD RC-047 K0238 Work Order: 11343606001 Page: 1

	Cust ID:	J11807	J11807	J11807	J11863	J11864	J11865
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate: Tetrachloro-m-xylene		110 %	102 %	98 %	113 %	114 %	105 %
Decachlorobiphenyl		104 %	101 %	93 %	110 %	111 %	103 %
		fl	fl	fl	fl	fl	fl
Alpha-BHC		41 U J	78 %	89 %	29 U J	33 U J	29 U J
gamma-BHC (Lindane)		41 U	84 %	95 %	29 U	33 U	29 U
Beta-BHC		41 U	76 %	87 %	29 U	33 U	29 U
Heptachlor		41 U	89 %	99 %	29 U	33 U	29 U
Delta-BHC		41 U	61 %	71 %	29 U	33 U	29 U
Aldrin		41 U	84 %	94 %	29 U	33 U	29 U
Heptachlor epoxide		41 U	83 %	93 %	29 U	33 U	29 U
gamma-Chlordane		41 U	76 %	86 %	29 U	33 U	29 U
Endosulfan I		41 U	81 %	91 %	29 U	33 U	29 U
alpha-Chlordane		41 U	79 %	89 %	29 U	33 U	29 U
4,4'-DDE		30 J	90 %	101 %	6.4 J	7.2 J	24 J
Dieldrin		41 U	85 %	96 %	29 U	33 U	29 U
Endrin		41 U	93 %	105 %	29 U	33 U	29 U
4,4'-DDD		41 U	99 %	110 %	29 U	33 U	6.4 J
Endosulfan II		41 U	67 %	74 %	29 U	33 U	29 U
4,4'-DDT		41 U	84 %	95 %	29 U	33 U	29 U
Endrin aldehyde		41 U	12 * %	14 * %	29 U	33 U	29 U
Endosulfan sulfate		41 U	36 * %	37 * %	29 U	33 U	29 U
Methoxychlor		41 U	79 %	88 %	29 U	33 U	29 U
Endrin ketone		41 U	53 * %	55 * %	29 U	33 U	29 U
Toxaphene		410 U	380 U	330 U	290 U	330 U	290 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

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Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 04/19/06 09:04

RFW Batch Number: 0603L498 Client: TNUHANFORD RC-047 K0238 Work Order: 11343606001 Page: 2

	Cust ID:	J11866	J11867	J11868	PBLKEG	PBLKEG RE	PBLKEG BS
Sample Information	RFW#:	005	006	007	06LE0221-MB1	06LE0221-MB1	06LE0221-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate: Tetrachloro-m-xylene		104 %	98 %	98 %	96 %	100 %	101 %
Decachlorobiphenyl		102 %	103 %	96 %	91 %	101 %	93 %
Alpha-BHC		38 U J	34 U J	25 U J	1.7 U	1.7 U	78 %
gamma-BHC (Lindane)		38 U	34 U	25 U	1.7 U	1.7 U	83 %
Beta-BHC		38 U	34 U	25 U	1.7 U	1.7 U	80 %
Heptachlor		38 U	34 U	25 U	1.7 U	1.7 U	84 %
Delta-BHC		38 U	34 U	25 U	1.7 U	1.7 U	61 %
Aldrin		38 U	34 U	25 U	1.7 U	1.7 U	84 %
Heptachlor epoxide		38 U	34 U	25 U	1.7 U	1.7 U	80 %
gamma-Chlordane		38 U	34 U	25 U	1.7 U	1.7 U	80 %
Endosulfan I		38 U	34 U	25 U	1.7 U	1.7 U	84 %
alpha-Chlordane		38 U	34 U	25 U	1.7 U	1.7 U	81 %
4,4'-DDE		10 J	34 U	8.1 J	1.7 U	1.7 U	85 %
Dieldrin		38 U	34 U	25 U	1.7 U	1.7 U	82 %
Endrin		38 U	34 U	25 U	1.7 U	1.7 U	81 %
4,4'-DDD		38 U	34 U	25 U	1.7 U	1.7 U	89 %
Endosulfan II		38 U	34 U	25 U	1.7 U	1.7 U	64 %
4,4'-DDT		38 U	34 U	25 U	1.7 U	1.7 U	78 %
Endrin aldehyde		38 U	34 U	25 U	1.7 U	1.7 U	24 * %
Endosulfan sulfate		38 U	34 U	25 U	1.7 U	1.7 U	28 * %
Methoxychlor		38 U	34 U	25 U	1.7 U	1.7 U	63 %
Endrin ketone		38 U	34 U	5.0 J	1.7 U	1.7 U	48 * %
Toxaphene		380 U	340 U	250 U	17 U	17 U	17 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

4/17/06

4/17/06

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Cust ID: PBLKEG BS

Sample Information

RFW#: 06LE0221-MB1
Matrix: SOIL
D.F.: 1.00
Units: UG/KG

Surrogate: Tetrachloro-m-xylene	102	%
Decachlorobiphenyl	107	%
Alpha-BHC	100	%
gamma-BHC (Lindane)	99	%
Beta-BHC	93	%
Heptachlor	96	%
Delta-BHC	87	%
Aldrin	99	%
Heptachlor epoxide	97	%
gamma-Chlordane	96	%
Endosulfan I	97	%
alpha-Chlordane	96	%
4,4'-DDE	94	%
Dieldrin	100	%
Endrin	104	%
4,4'-DDD	98	%
Endosulfan II	100	%
4,4'-DDT	102	%
Endrin aldehyde	91	%
Endosulfan sulfate	98	%
Methoxychlor	104	%
Endrin ketone	99	%
Toxaphene	17	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

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0603L498
SDG/SAF # K0238/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 03-13-2006

CHLORINATED PESTICIDES

Seven (7) solid samples were collected on 02-23-2006.

The samples and their associated QC samples were extracted on 03-22-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 04-02,13-2006. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

The following is a summary of the QC results accompanying the sample results. The Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy, with the exception of some discrepancies, which have been recorded on the Sample Receipt Checklist. Samples were received out of hold.

2. All required holding times for analysis have been met.

3. The samples were extracted 15 days outside of recommended hold time.

4. The samples and their associated QC samples received Florisil and Copper-Sulfur cleanups according to Lionville Laboratory SOPs based on SW846 methods 3620B and 3660A respectively.

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

6. All surrogate recoveries were within acceptance criteria.

7. All blank spike recoveries were within acceptance criteria in the pre-Florisil cleanup. Three (3) of forty (40) blank spike recoveries were outside acceptance criteria in the Florisil cleanup fraction.

8. Six (6) of forty (40) matrix spike recoveries were outside acceptance criteria in the Florisil cleaned fraction.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 16 pages.

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

9. All samples required instrument dilution due to chromatographic anomalies. The reporting limits were adjusted to reflect the necessary dilution.

10. The initial calibrations associated with this data set were within acceptance criteria.

11. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

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

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

4/21/06
Date

som\r:\group\data\pest\tnu hanford\0603-498s.pst

LVLI
LIONVILLE LABORATORY INC.

RECEIVED
MAY 2006

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11807	001	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11807	001 MS	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11807	001 MSD	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11863	002	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11864	003	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11865	004	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11866	005	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11867	006	SO	06LE0221	02/23/06	03/22/06	04/02/06
J11868	007	SO	06LE0221	02/23/06	03/22/06	04/02/06

LAB QC:

PBLKEG	MB1	S	06LE0221	N/A	03/22/06	04/02/06
PBLKEG	MB1	S		N/A	03/22/06	04/13/06
PBLKEG	MB1 BS	S	06LE0221	N/A	03/22/06	04/02/06
PBLKEG	MB1 BS	S		N/A	03/22/06	04/13/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0603L498
SDG/SAF # K0238/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 03-13-2006

PCB

Seven (7) solid samples were collected on 02-23-2006.

The samples and their associated QC samples were extracted on 03-22-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 03-31-2006 and 04-01-2006. The extraction procedure was based on method 3540C 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. Samples were received outside the extraction holding time.

3. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.

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

5. All surrogate recoveries were within acceptance criteria.

6. The blank spike recoveries were within acceptance criteria.

7. All matrix spike recoveries were within acceptance criteria.

8. The initial calibrations associated with this data set were within acceptance criteria.

9. The 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 1 4 pages.

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LIONVILLE LABORATORY INC.

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

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

4/18/6
Date

som\r:\group\data\pest\tnu hanford\0603-498.pcbs

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Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

RECEIVED
MAY 2006

DATE RECEIVED: 03/13/06 LVL LOT # : 0603L498

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11807	001	SO	06LE0221	02/23/06	03/22/06	03/31/06
J11807	001 MS	SO	06LE0221	02/23/06	03/22/06	03/31/06
J11807	001 MSD	SO	06LE0221	02/23/06	03/22/06	03/31/06
J11863	002	SO	06LE0221	02/23/06	03/22/06	04/01/06
J11864	003	SO	06LE0221	02/23/06	03/22/06	04/01/06
J11865	004	SO	06LE0221	02/23/06	03/22/06	04/01/06
J11866	005	SO	06LE0221	02/23/06	03/22/06	04/01/06
J11867	006	SO	06LE0221	02/23/06	03/22/06	04/01/06
J11868	007	SO	06LE0221	02/23/06	03/22/06	04/01/06

LAB QC:

PBLKEG	MB1	S	06LE0221	N/A	03/22/06	03/31/06
PBLKEG	MB1 BS	S	06LE0221	N/A	03/22/06	03/31/06

4/13/6

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-157 | Page 1 of 1

Collector: TILLER, B. JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 300 AREA ELEVATED, SAMPLE 4	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES/ LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

000023

SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)				
Preservation	COOL 4C ~~None~~ JB 2/14/06	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	~~0~~ JB 2/14/06 1	1	~~X~~ 0 JB 2/14/06	0	0	0				
Volume	750g	5g	15g	50g	50g	50g				

Sample No.	Matrix *	Sample Date	Sample Time									
J11807	OTHER SOLID	2-23-06	1545	X	X							

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
Relinquished By/Removed From	EAS LOCKED STORAGE	2-27-06 0745	Received By/Stored In	2-27-06 0745
Relinquished By/Removed From	R.Z. Stiffler	2-27-06 1600	Received By/Stored In	Fed Ex
Relinquished By/Removed From	FED EX		Received By/Stored In	02/28/06 9:20
Relinquished By/Removed From		3/10/06 16:00	Received By/Stored In	
Relinquished By/Removed From		3-13-06 1100	Received By/Stored In	3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec, ~~Iso Uranium and Iso Strontium~~ then tranship to Lionville Labs, if possible maintain 4 C cooling. Weigh upon receipt. JB 2/14/06 KESSNER

NOTE: Lionville- contact ~~Hich~~ JOAN BOTTLE

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 (08/29/2005)

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-141 | Page 1 of 1

Collector: TILLER, B. JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-K ELEVATED, SAMPLE 1	SAF No.: RC-047	
Ice Chest No.: AFS - 04 - 052	Field Logbook No.: EL-1592 JPD 2-23-06	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ JD 2/14/06	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)				
Sample No. / Matrix * / Sample Date / Sample Time											
J11863 / OTHER SOLID / 2-23-06 / 1330	X	X	X								

000024

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RZ Stoffler	2-27-06 0745
RZ Stoffler	2-27-06 1600	Fed Ex	
Fed Ex			02/28/06 9:20
Alex Kelley	3/10/06 16:00		
[illegible]	3-13-06 1100	[illegible]	3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs. if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ upon receipt.

JOAN KESSNER JD 2/14/06

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 (08/29/2005)

Hanford Cosmic Harbor

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-142 | Page 1 of 1

Collector: TILLER, B. JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-K ELEVATED, SAMPLE 2		SAF No.: RC-047
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1592 3/10 FED 2-27-06	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

000025

Preservation	Cool 4C ~~None~~ JH 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11864	OTHER SOLID	2-23-06	1400	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE — Date/Time: 2-23-06 1630
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 2-27-06 0745	Received By/Stored In: RZ Steffler — Date/Time: 2-27-06 0745
Relinquished By/Removed From: RZ Steffler MCH	Date/Time: 2-27-06 1600	Received By/Stored In: Fed Ex — Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time:	Received By/Stored In: FW — Date/Time: 03-06-06 9:30
Relinquished By/Removed From: Alex Kelley	Date/Time: 3/10/06 16:00	Received By/Stored In: — Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time: 3-13-06 1100	Received By/Stored In: [signature] — Date/Time: 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weise~~ JOAN KESSNER upon receipt. JH 21406

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 (08/29/2005)

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-143 | Page 1 of 1

Collector: TILLER, B. JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-K ELEVATED, SAMPLE 3	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

0000000810

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

9200026

Preservation	COOL 4C ~~None~~	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Carbon-14	Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)			
J11865	OTHER SOLID	2-23-06	1430	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RE Steffler	2-27-06 0745
RE Steffler	2-27-06 1600	FED EX	
FED EX			03/28/06 9:20
Alex Ellen	3/10/06 16:00		
	3-13-06 1100		3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rick Weiss~~ JOAN KESSNER upon receipt. 4/4/06

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 (08/29/2005)

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-144 | Page 1 of 1

Collector: TILLER, B. JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality: ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: ELEVATED #4 100-K ~~LOW, SAMPLE T~~ B.T. 02-23-06	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597 JSH 2-23-06 JAB 21406	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C None JAB 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11866	OTHER SOLID	2-23-06	1500	X	X	X					

000027

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RZ Stoffler	2-27-06 0745
RZ Stoffler	2-27-06 1600	Fed Ex	
Fed Ex			02/28/06 9:20
Alex Kelwy	3/10/06 16:00		
Fed Ex	3-13-06 1100		3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOAN KESSNER upon receipt. JAB 21406

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
Liquid
V=Vegetation
X=Other

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-145 | Page 1 of 1

Collector: TILLER, B. JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-K ~~LOW, SAMPLE 2~~ ELEVATED #5	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597 SEB 7-28-06 SJA 21406	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

820000

Preservation	COOL 4C ~~None~~ SJA 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11867	OTHER SOLID	2-23-06	1515	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 2-27-06 0745	Received By/Stored In: RZ Stoffle
Relinquished By/Removed From: RZ Stoffle	Date/Time: 2-27-06 1600 WCH	Received By/Stored In: Fed EX
Relinquished By/Removed From: Fed EX	Date/Time:	Received By/Stored In: 07/28/06 9:30
Relinquished By/Removed From: Alex Klewicki	Date/Time: 3/10/06 16:00	Received By/Stored In:
Relinquished By/Removed From: Fed Ex	Date/Time: 3-13-06 1600	Received By/Stored In: 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOANKESSNER upon receipt. SJA 21406

Matrix *

S=Soil
Sf=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 (08/29/2005)

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-146 | Page 1 of 1

Collector: TILLER, B. JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCRA Sediment and Ti	Sampling Location: 100-K LOW, SAMPLE	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597 AH 21406 2-23-06	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ AH 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	750g	2g	5g	15g	50g	50g	50g			
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)			
Sample No. / Matrix * / Sample Date / Sample Time										
J11868 / OTHER SOLID / 2-23-06 / 1530	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RE Steffler	2-27-06 0745
RE Steffler	2-27-06 1600	Fed Ex	
Fed Ex			07/26/06 9:22
	8/10/06 16:00		
Fed Ex	3-13-06 1100		3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weise~~ JOAN KESSNER upon receipt. AH 21406

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 (08/29/2005)

Appendix 5

Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: RCBRA			DATA PACKAGE: ~~6/16/06~~ K0238		
VALIDATOR: TLI		LAB: LLI		DATE: 6/16/06	
			SDG: K0238		
ANALYSES PERFORMED					
SW-846 8081	SW-846 8081 (TCLP)	SW-846 8082	SW-846 8081 (TCLP)		
SAMPLES/MATRIX					
J11807	J11863	J11864	J11865	J11866	
J11867	J11868				
					Solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? ..... Yes No N/A

Comments: _____

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations acceptable? ..... Yes No N/A

Continuing calibrations acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

DDT and endrin breakdowns acceptable? ..... Yes No N/A

Comments: _____

PCB DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) ..... Yes No N/A

Calibration blank results acceptable? (Levels D, E) ..... Yes No N/A

Laboratory blanks analyzed? ..... Yes No N/A

Laboratory blank results acceptable? ..... Yes No N/A

Field/trip blanks analyzed? (Levels C, D, E) ..... Yes No N/A

Field/trip blank results acceptable? (Levels C, D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: no FB

4. ACCURACY (Levels C, D, and E)

Surrogates analyzed? ..... Yes No N/A

Surrogate recoveries acceptable? ..... Yes No N/A

Surrogates traceable? (Levels D, E) ..... Yes No N/A

Surrogates expired? (Levels D, E) ..... Yes No N/A

MS/MSD samples analyzed? ..... Yes No N/A

MS/MSD results acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards expired? (Levels D, E) ..... Yes No N/A

LCS/BSS samples analyzed? ..... Yes No N/A

LCS/BSS results acceptable? ..... Yes No N/A

Standards traceable? (Levels D, E) ..... Yes No N/A

Standards expired? (Levels D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Performance audit sample(s) analyzed? ..... Yes No N/A

Performance audit sample results acceptable? ..... Yes No N/A

Comments: MS/MSD – Endrin Sulfate, Endosulfan Sulfate, Endrin
LCS – Ketone – J all

no toxaphene MS/MSD/LCS – J all no PAS

PCB DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? ..... Yes No N/A

Duplicate results acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards expired? (Levels D, E) ..... Yes No N/A

Field duplicate RPD values acceptable? ..... Yes No N/A

Field split RPD values acceptable? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments:

no toxaphen ms/msd – J all

6. SYSTEM PERFORMANCE (Levels D and E)

Chromatographic performance acceptable? ..... Yes No N/A

Positive results resolved acceptably? ..... Yes No N/A

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? ..... Yes No N/A

Sample holding times acceptable? ..... Yes No N/A

Comments: all over by <2X – J all

PCB DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) ..... Yes No N/A

Compound quantitation acceptable? (Levels D, E) ..... Yes No N/A

Results reported for all requested analyses? ..... Yes No N/A

Results supported in the raw data? (Levels D, E) ..... Yes No N/A

Samples properly prepared? (Levels D, E) ..... Yes No N/A

Detection limits meet RDL? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: all undetects over

9. SAMPLE CLEANUP (Levels D and E)

Fluoricil ® (or other absorbent) cleanup performed? ..... Yes No N/A

Lot check performed? ..... Yes No N/A

Check recoveries acceptable? ..... Yes No N/A

GPC cleanup performed? ..... Yes No N/A

GPC check performed? ..... Yes No N/A

GPC check recoveries acceptable? ..... Yes No N/A

GPC calibration performed? ..... Yes No N/A

GPC calibration check performed? ..... Yes No N/A

GPC calibration check retention times acceptable? ..... Yes No N/A

Check/calibration materials traceable? ..... Yes No N/A

Check/calibration materials Expired? ..... Yes No N/A

Analytical batch QC given similar cleanup? ..... Yes No N/A

Transcription/Calculation Errors? ..... Yes No N/A

Comments:

Date: 19 June 2006
To: Washington Closure Hanford (technical representative)
From: TechLaw, Inc.
Project: 100 Area and 300 Area Component of the RCBRA Sediment & Tissue
Subject: Semivolatile - Data Package No. K0238-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K0238 prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J11807	2/23/06	Solid	C	See note 1
J11863	2/23/06	Solid	C	See note 1
J11864	2/23/06	Solid	C	See note 1
J11865	2/23/06	Solid	C	See note 1
J11866	2/23/06	Solid	C	See note 1
J11867	2/23/06	Solid	C	See note 1
J11868	2/23/06	Solid	C	See note 1

1- Semivolatiles by 8270C.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area and 300 Area Component of the RCBRA Sampling and Analysis Plan (DOE/RL-2005-42, Rev. 0, October 2005). Appendices 1 through 5 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

- **Holding Times & Sample Preservation**

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction for semivolatile analytes.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

Due to the holding time being exceeded by less that twice the limit, all semivolatile results were qualified as estimates and flagged "J".

- **Method Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

Due to method blank contamination, the bis(2-ethylhexyl)phthalate result in samples J11864, J11865 and J11866 were qualified as estimates and flagged "J".

Due to method blank contamination, the di-n-butylphthalate result in sample J11864 was qualified as an estimate and flagged "J".

All other method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate

analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

Due to matrix spike duplicate and/or matrix spike recoveries outside QC limits, all semivolatile results were qualified as estimates and flagged "J".

Due to LCS recoveries outside QC limits, all semivolatile results (except hexachlorobutadiene, 2,4-6-trichlorophenol and 3,3'-dichlorobenzidine) were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-20%. If RPD values are out of specification and the sample concentration is less than five times the spike

concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

Due to RPDs outside QC limits, all semivolatile results were qualified as estimates and flagged "J".

Field Duplicate Samples

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. No RQLs were specified.

- **Completeness**

Data package No. K0238 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, the bis(2-ethylhexyl)phthalate result in samples J11864, J11865 and J11866 were qualified as estimates and flagged "J".

- Due to method blank contamination, the di-n-butylphthalate result in sample J11864 was qualified as an estimate and flagged "J".

- Due to matrix spike duplicate and/or matrix spike recoveries outside QC limits, all semivolatile results were qualified as estimates and flagged "J".

- Due to LCS recoveries outside QC limits, all semivolatile results (except hexachlorobutadiene, 2,4-6-trichlorophenol and 3,3'-dichlorobenzidine) were qualified as estimates and flagged "J".

- Due to RPDs outside QC limits, all semivolatile results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

WCH, Contract #20266, *Validation Statement of Work*, Washington Closure Hanford Incorporated, July 7, 2003.

DOE/RL-2005-42, Rev. 0, October 2005, *100 Area and 300 Area Component of the RCBRA Sampling and Analysis Plan*.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

SEMIVOLATILE DATA QUALIFICATION SUMMARY*

SDG: K0238	REVIEWER: TLI	Project: RCBRA	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Bis(2-ethylhexyl)phthalate	J	J11864, J11865 J11866	Blank contamination
Di-n-butylphthalate	J	J11864	Blank contamination
All	J	All	MSD and/or MS recovery
All except: Hexachlorobutadiene 2,4-6-Trichlorophenol 3,3'-Dichlorobenzidine	J	All	LCS recovery
All	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

SEMIVOLATILE ANALYSIS, SOLID MATRIX, (UG/KG)

Project: WASHINGTON CLOSURE HANFORD
Laboratory: LLI SDG: K0238

Sample Number		J11807		J11863		J11864		J11865		J11866		J11867		J11868	
Remarks															
Sample Date		2/23/06		2/23/06		2/23/06		2/23/06		2/23/06		2/23/06		2/23/06	
Extraction Date		3/22/06		3/22/06		3/22/06		3/22/06		3/22/06		3/22/06		3/22/06	
Analysis Date		4/24/06		4/24/06		4/24/06		4/24/06		4/24/06		4/25/06		4/25/06	
Semivolatile (8270C)	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol		12000	J	19000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
bis(2-Chloroethyl)ether		12000	J	17000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
2-Chlorophenol		12000	J	18000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
1,3-Dichlorobenzene		10000	J	15000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
1,4-Dichlorobenzene		10000	J	15000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
1,2-Dichlorobenzene		10000	J	15000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
2-Methylphenol		11000	J	17000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
2,2'-oxybis(1-chloropropane)		12000	J	19000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
4-Methylphenol		20000	J	37000	J	10000	J	16000	J	2700	J	6900	J	24000	J
N-Nitroso-di-n-propylamine		12000	J	18000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Hexachloroethane		10000	J	15000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Nitrobenzene		11000	J	17000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Isophorone		12000	J	18000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
2-Nitrophenol		12000	J	18000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
2,4-Dimethylphenol		8100	J	19000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
bis(2-Chloroethoxy)methane		12000	J	18000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
2,4-Dichlorophenol		12000	J	19000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
1,2,4-Trichlorobenzene		11000	J	16000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Naphthalene		11000	J	17000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
4-Chloroaniline		13000	J	17000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Hexachlorobutadiene		11000	J	17000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
4-Chloro-3-methylphenol		10000	J	17000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
2-Methylnaphthalene		11000	J	18000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Hexachlorocyclopentadiene		7300	J	6600	UJ	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
2,4,6-Trichlorophenol		13000	J	21000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
2,4,5-Trichlorophenol		11000	J	19000	J	12000	UJ	11000	UJ	11000	UJ	15000	UJ	14000	UJ
2-Chloronaphthalene		12000	J	18000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
2-Nitroaniline		15000	J	25000	J	2700	J	11000	UJ	11000	J	2900	J	3600	J
Dimethylphthalate		12000	J	20000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Acenaphthylene		12000	J	19000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
2,6-Dinitrotoluene		13000	J	20000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize miss-interpretation of results.

All other qualifiers shown were applied during validation.

* - RQL exceeded

SEMIVOLATILE ANALYSIS, SOLID MATRIX, (UG/KG)

Project: WASHINGTON CLOSURE HANFORD
Laboratory: LLI SDG: K0238

Sample Number		J11807		J11863		J11864		J11865		J11866		J11867		J11868	
Remarks															
Sample Date		2/23/06		2/23/06		2/23/06		2/23/06		2/23/06		2/23/06		2/23/06	
Extraction Date		3/22/06		3/22/06		3/22/06		3/22/06		3/22/06		3/22/06		3/22/06	
Analysis Date		4/24/06		4/24/06		4/24/06		4/24/06		4/24/06		4/25/06		4/25/06	
Semivolatile (8270C)	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
3-Nitroaniline		17000	J	27000	J	12000	UJ	11000	UJ	11000	UJ	15000	UJ	14000	UJ
Acenaphthene		12000	J	19000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
2,4-Dinitrophenol		10000	J	17000	UJ	12000	UJ	11000	UJ	11000	UJ	15000	UJ	14000	UJ
4-Nitrophenol		10000	J	17000	UJ	12000	UJ	11000	UJ	11000	UJ	15000	UJ	14000	UJ
Dibenzofuran		12000	J	19000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
2,4-Dinitrotoluene		13000	J	21000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Diethylphthalate		13000	J	21000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
4-Chlorophenyl-phenyl ether		12000	J	19000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Fluorene		12000	J	19000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
4-Nitroaniline		14000	J	26000	J	12000	UJ	11000	UJ	11000	UJ	15000	UJ	14000	UJ
4,6-Dinitro-2-methylphenol		8700	J	17000	J	12000	UJ	11000	UJ	11000	UJ	15000	UJ	14000	UJ
N-Nitrosodiphenylamine		9700	J	16000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
4-Bromophenyl-phenyl ether		10000	J	17000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Hexachlorobenzene		12000	J	20000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Pentachlorophenol		4800	J	2600	J	12000	UJ	11000	UJ	11000	UJ	15000	UJ	14000	UJ
Phenanthrene		12000	J	20000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Anthracene		12000	J	20000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Carbazole		13000	J	20000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Di-n-butylphthalate		13000	J	21000	J	300	J	420	J	420	J	440	J	800	J
Fluoranthene		14000	J	23000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Pyrene		13000	J	24000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Butylbenzylphthalate		14000	J	25000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
3,3'-Dichlorobenzidine		8400	J	7400	J	860	J	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Benzo(a)anthracene		13000	J	21000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Chrysene		12000	J	21000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
bis(2-Ethylhexyl)phthalate		14000	J	24000	J	550	J	570	J	580	J	680	J	1000	J
Di-n-octylphthalate		14000	J	25000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Benzo(b)fluoranthene		14000	J	25000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Benzo(k)fluoranthene		12000	J	20000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Benzo(a)pyrene		12000	J	21000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Indeno(1,2,3-cd)pyrene		13000	J	20000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Dibenz(a,h)anthracene		13000	J	20000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ
Benzo(g,h,i)perylene		12000	J	18000	J	4600	UJ	4400	UJ	4300	UJ	6100	UJ	5600	UJ

000012

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize miss-interpretation of results.

All other qualifiers shown were applied during validation.

* - RQL exceeded

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 05/26/06 08:14

RFW Batch Number: 0603L498 Client: TNUHANFORD RC-047 K0238 Work Order: 11343606001 Page: 1a

	Cust ID:	J11807		J11807		J11807		J11863		J11864		J11865	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		004	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	D.F.:	0.800		0.800		0.800		0.800		0.800		0.800	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	45	%	53	%	52	%	45	%	42	%	38	%
	2-Fluorobiphenyl	51	%	59	%	58	%	50	%	45	%	44	%
	Terphenyl-d14	57	%	72	%	71	%	67	%	63	%	45	%
	Phenol-d5	52	%	60	%	59	%	51	%	48	%	40	%
	2-Fluorophenol	48	%	60	%	56	%	49	%	46	%	38	%
	2,4,6-Tribromophenol	64	%	72	%	70	%	69	%	65	%	45	%
			fl		fl		fl		fl		fl		fl
Phenol		12000	J	0 *	%	38 *	%	19000	J	4600	U J	4400	U J
bis(2-Chloroethyl)ether		12000		0 *	%	34 *	%	17000		4600	U	4400	U
2-Chlorophenol		12000		0 *	%	37 *	%	18000		4600	U	4400	U
1,3-Dichlorobenzene		10000		0 *	%	33 *	%	15000		4600	U	4400	U
1,4-Dichlorobenzene		10000		0 *	%	32 *	%	15000		4600	U	4400	U
1,2-Dichlorobenzene		10000		0 *	%	31 *	%	15000		4600	U	4400	U
2-Methylphenol		11000		1 *	%	36 *	%	17000		4600	U	4400	U
2,2'-oxybis(1-Chloropropane)		12000		0 *	%	39 *	%	19000		4600	U	4400	U
4-Methylphenol		20000	B	21 *	%	63	%	37000	B	10000	B	16000	B
N-Nitroso-di-n-propylamine		12000		0 *	%	36 *	%	18000		4600	U	4400	U
Hexachloroethane		10000		0 *	%	30 *	%	15000		4600	U	4400	U
Nitrobenzene		11000		0 *	%	33 *	%	17000		4600	U	4400	U
Isophorone		12000		0 *	%	36 *	%	18000		4600	U	4400	U
2-Nitrophenol		12000		1 *	%	41 *	%	18000		4600	U	4400	U
2,4-Dimethylphenol		8100		9 *	%	48 *	%	19000		4600	U	4400	U
bis(2-Chloroethoxy)methane		12000		0 *	%	37 *	%	18000		4600	U	4400	U
2,4-Dichlorophenol		12000		0 *	%	38 *	%	19000		4600	U	4400	U
1,2,4-Trichlorobenzene		11000		0 *	%	35 *	%	16000		4600	U	4400	U
Naphthalene		11000		0 *	%	37 *	%	17000		4600	U	4400	U
4-Chloroaniline		13000		0 *	%	29	%	17000		4600	U	4400	U
Hexachlorobutadiene		11000		1 *	%	37 *	%	17000		4600	U	4400	U
4-Chloro-3-methylphenol		10000		0 *	%	33 *	%	17000		4600	U	4400	U
2-Methylnaphthalene		11000		0 *	%	38 *	%	18000		4600	U	4400	U
Hexachlorocyclopentadiene		7300		0 *	%	0 *	%	6600	U	4600	U	4400	U
2,4,6-Trichlorophenol		13000		1 *	%	44	%	21000		4600	U	4400	U
2,4,5-Trichlorophenol		11000		3 *	%	39 *	%	19000		12000	U	11000	U

*= Outside of EPA CLP QC limits.

JLR 6/17/06

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Cust ID:	J11807		J11807		J11807		J11863		J11864		J11865	
RFW#:	001		001 MS		001 MSD		002		003		004	
2-Chloronaphthalene	12000		0 * %		37 * %		18000		4600	U	4400	U
2-Nitroaniline	15000		2 * %		42 * %		25000		2700	J	11000	U
Dimethylphthalate	12000		0 * %		38 * %		20000		4600	U	4400	U
Acenaphthylene	12000		0 * %		38 * %		19000		4600	U	4400	U
2,6-Dinitrotoluene	13000		0 * %		38 * %		20000		4600	U	4400	U
3-Nitroaniline	17000		0 * %		46 * %		27000		12000	U	11000	U
Acenaphthene	12000		0 * %		39 * %		19000		4600	U	4400	U
2,4-Dinitrophenol	10000	U	0 * %		59 %		17000	U	12000	U	11000	U
4-Nitrophenol	10000	U	1 * %		5 * %		17000	U	12000	U	11000	U
Dibenzofuran	12000		0 * %		38 * %		19000		4600	U	4400	U
2,4-Dinitrotoluene	13000		0 * %		39 * %		21000		4600	U	4400	U
Diethylphthalate	13000		0 * %		38 * %		21000		4600	U	4400	U
4-Chlorophenyl-phenylether	12000		0 * %		38 * %		19000		4600	U	4400	U
Fluorene	12000		0 * %		38 * %		19000		4600	U	4400	U
4-Nitroaniline	14000		0 * %		36 * %		26000		12000	U	11000	U
4,6-Dinitro-2-methylphenol	8700		4 * %		40 %		17000		12000	U	11000	U
N-Nitrosodiphenylamine (1)	9700		0 * %		29 * %		16000		4600	U	4400	U
4-Bromophenyl-phenylether	10000		0 * %		31 * %		17000		4600	U	4400	U
Hexachlorobenzene	12000		0 * %		41 * %		20000		4600	U	4400	U
Pentachlorophenol	4800		0 * %		0 * %		2600		12000	U	11000	U
Phenanthrene	12000		0 * %		39 * %		20000		4600	U	4400	U
Anthracene	12000		0 * %		38 * %		20000		4600	U	4400	U
Carbazole	13000		0 * %		33 * %		20000		4600	U	4400	U
Di-n-butylphthalate	13000	B	2 * %		40 %		21000	B	300		420	
Fluoranthene	14000		0 * %		43 * %		23000		4600	U	4400	U
Pyrene	13000		2 * %		50 %		24000		4600	U	4400	U
Butylbenzylphthalate	14000		2 * %		47 * %		25000		4600	U	4400	U
3,3'-Dichlorobenzidine	8400		0 * %		5 * %		7400		860	J	4400	U
Benzo(a)anthracene	13000		0 * %		41 * %		21000		4600	U	4400	U
Chrysene	12000		0 * %		39 * %		21000		4600	U	4400	U
bis(2-Ethylhexyl)phthalate	14000	B	0 * %		44 * %		24000	B	550		570	
Di-n-octyl phthalate	14000		1 * %		48 * %		25000		4600	U	4400	U
Benzo(b)fluoranthene	14000		0 * %		47 * %		25000		4600	U	4400	U
Benzo(k)fluoranthene	12000		1 * %		37 * %		20000		4600	U	4400	U
Benzo(a)pyrene	12000		0 * %		37 * %		21000		4600	U	4400	U
Indeno(1,2,3-cd)pyrene	13000		0 * %		30 * %		20000		4600	U	4400	U
Dibenz(a,h)anthracene	13000		0 * %		31 * %		20000		4600	U	4400	U
Benzo(g,h,i)perylene	12000		0 * %		29 * %		18000		4600	U	4400	U

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

6/17/06

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	Cust ID:	J11866	J11867	J11868	SBLKWL	SBLKWL BS
Sample Information	RFW#:	005	006	007	06LE0222-MB1	06LE0222-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	0.800	0.800	0.800	0.800	0.800
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	42 %	48 %	57 %	33 %	47 %
	2-Fluorobiphenyl	48 %	50 %	60 %	34 %	52 %
	Terphenyl-d14	56 %	58 %	68 %	43 %	62 %
	Phenol-d5	42 %	52 %	58 %	34 %	50 %
	2-Fluorophenol	38 %	46 %	53 %	31 %	44 %
	2,4,6-Tribromophenol	55 %	57 %	65 %	44 %	57 %
Phenol		4300 U J	6100 U J	5600 U J	270 U	27 * %
bis(2-Chloroethyl)ether		4300 U	6100 U	5600 U	270 U	26 * %
2-Chlorophenol		4300 U	6100 U	5600 U	270 U	26 * %
1,3-Dichlorobenzene		4300 U	6100 U	5600 U	270 U	24 * %
1,4-Dichlorobenzene		4300 U	6100 U	5600 U	270 U	24 * %
1,2-Dichlorobenzene		4300 U	6100 U	5600 U	270 U	25 * %
2-Methylphenol		4300 U	6100 U	5600 U	270 U	24 * %
2,2'-oxybis(1-Chloropropane)		4300 U	6100 U	5600 U	270 U	25 * %
4-Methylphenol		2700 ~~J~~ B	6900 B	24000 B	250 J	16 * %
N-Nitroso-di-n-propylamine		4300 U	6100 U	5600 U	270 U	27 * %
Hexachloroethane		4300 U	6100 U	5600 U	270 U	24 * %
Nitrobenzene		4300 U	6100 U	5600 U	270 U	26 * %
Isophorone		4300 U	6100 U	5600 U	270 U	28 * %
2-Nitrophenol		4300 U	6100 U	5600 U	270 U	26 * %
2,4-Dimethylphenol		4300 U	6100 U	5600 U	270 U	15 * %
bis(2-Chloroethoxy)methane		4300 U	6100 U	5600 U	270 U	25 * %
2,4-Dichlorophenol		4300 U	6100 U	5600 U	270 U	25 * %
1,2,4-Trichlorobenzene		4300 U	6100 U	5600 U	270 U	25 * %
Naphthalene		4300 U	6100 U	5600 U	270 U	25 * %
4-Chloroaniline		4300 U	6100 U	5600 U	270 U	31 %
Hexachlorobutadiene		4300 U	6100 U	5600 U	270 U	28 * %
4-Chloro-3-methylphenol		4300 U	6100 U	5600 U	270 U	22 * %
2-Methylnaphthalene		4300 U	6100 U	5600 U	270 U	26 * %
Hexachlorocyclopentadiene		4300 U	6100 U	5600 U	270 U	18 * %
2,4,6-Trichlorophenol		4300 U	6100 U	5600 U	270 U	28 %
2,4,5-Trichlorophenol		11000 U	15000 U	14000 U	670 U	22 * %

*= Outside of EPA CLP QC limits.

K 6/17/06

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Cust ID:	J11866		J11867		J11868		SBLKWL		SBLKWL BS	
RFW#:	005		006		007		06LE0222-MB1		06LE0222-MB1	
2-Chloronaphthalene	4300	U	6100	U	5600	U	270	U	27 *	%
2-Nitroaniline	11000	U	2900	U	3600	U	670	U	30 *	%
Dimethylphthalate	4300	U	6100	U	5600	U	270	U	30 *	%
Acenaphthylene	4300	U	6100	U	5600	U	270	U	27 *	%
2,6-Dinitrotoluene	4300	U	6100	U	5600	U	270	U	29 *	%
3-Nitroaniline	11000	U	15000	U	14000	U	670	U	41 *	%
Acenaphthene	4300	U	6100	U	5600	U	270	U	27 *	%
2,4-Dinitrophenol	11000	U	15000	U	14000	U	670	U	0 *	%
4-Nitrophenol	11000	U	15000	U	14000	U	670	U	0 *	%
Dibenzofuran	4300	U	6100	U	5600	U	270	U	28 *	%
2,4-Dinitrotoluene	4300	U	6100	U	5600	U	270	U	30 *	%
Diethylphthalate	4300	U	6100	U	5600	U	270	U	31 *	%
4-Chlorophenyl-phenylether	4300	U	6100	U	5600	U	270	U	28 *	%
Fluorene	4300	U	6100	U	5600	U	270	U	27 *	%
4-Nitroaniline	11000	U	15000	U	14000	U	670	U	33 *	%
4,6-Dinitro-2-methylphenol	11000	U	15000	U	14000	U	670	U	23 *	%
N-Nitrosodiphenylamine (1)	4300	U	6100	U	5600	U	270	U	23 *	%
4-Bromophenyl-phenylether	4300	U	6100	U	5600	U	270	U	25 *	%
Hexachlorobenzene	4300	U	6100	U	5600	U	270	U	29 *	%
Pentachlorophenol	11000	U	15000	U	14000	U	670	U	0 *	%
Phenanthrene	4300	U	6100	U	5600	U	270	U	29 *	%
Anthracene	4300	U	6100	U	5600	U	270	U	29 *	%
Carbazole	4300	U	6100	U	5600	U	270	U	30 *	%
Di-n-butylphthalate	420	JB	440	JB	800	JB	18	J	30 *	%
Fluoranthene	4300	U	6100	U	5600	U	270	U	32 *	%
Pyrene	4300	U	6100	U	5600	U	270	U	31 *	%
Butylbenzylphthalate	4300	U	6100	U	5600	U	270	U	33 *	%
3,3'-Dichlorobenzidine	4300	U	6100	U	5600	U	270	U	41	%
Benzo(a)anthracene	4300	U	6100	U	5600	U	270	U	32 *	%
Chrysene	4300	U	6100	U	5600	U	270	U	31 *	%
bis(2-Ethylhexyl)phthalate	580	JB	680	JB	1000	JB	31	J	32 *	%
Di-n-octyl phthalate	4300	U	6100	U	5600	U	270	U	32 *	%
Benzo(b)fluoranthene	4300	U	6100	U	5600	U	270	U	31 *	%
Benzo(k)fluoranthene	4300	U	6100	U	5600	U	270	U	32 *	%
Benzo(a)pyrene	4300	U	6100	U	5600	U	270	U	30 *	%
Indeno(1,2,3-cd)pyrene	4300	U	6100	U	5600	U	270	U	31 *	%
Dibenz(a,h)anthracene	4300	U	6100	U	5600	U	270	U	33 *	%
Benzo(g,h,i)perylene	4300	U	6100	U	5600	U	270	U	32 *	%

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

6/17/06

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0603L498
SDG/SAF # K0238/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 03-13-2006

SEMIVOLATILE

Seven (7) solid (fish) samples were collected on 02-23-2006.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 03-22-2006 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 04-24,25-2006.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

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

2. The sample results were reported on a wet-weight basis. The samples were GPDd and used the reduced sample volume for the extraction due to the nature of the sample matrix. A copy of the Sample Extraction Record has been enclosed.

3. Samples were received outside the extraction holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

4. Non-target compounds were detected in the samples.

5. All surrogate recoveries were within acceptance criteria.

6. One hundred twenty-one (121) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria.

   Sixty-one (61) of sixty-four (64) blank spike recoveries were outside acceptance criteria. The sample J11807 will be re-extracted, analyzed and submitted under separate cover. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

7. The method blank contained the common laboratory contaminants Bis (2-Ethylhexyl) phthalate and Di-n-butylphthalate at levels less than the CRQL. The method blank also contained the target compound 4-Methylphenol at a level less than the CRQL.

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 3 4 pages.

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LIONVILLE LABORATORY INC.

8. Internal standard area and retention time criteria were met.

9. Manual integrations are performed according to SOP QA-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. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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.

for Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/30/02
Date

som\gorup\data\bna\tmu-hanford\0603-498.doc

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Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 06M5176

Initiator: Robert Carden
Date: 5/26/06
Client: TNU Hanford RC047

Batch: 0603498
Samples: 001, 001S, 001T, 002, B6
Method: SW846/MCAWW/CLP/

Parameter: 06254
Matrix: Solid
Prep Batch: 0606022

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) 001, 002 appears to have a large no. of target cmpds present spike levels
(2) Samples extracted outside of hold (13 days) client requested analysis priority order
(3) 001S, 001T - low spikes
(4) B6 low spikes

2. Known or Probable Causes(s)

(1) possible spike? possible carryover on GCMS? possible sample mixup?
(2) samples received past hold (4 days)
(3) matrix effect? loss on GPC/extraction? possible sample mixup?
(4) loss on GPC/extraction? possible sample mixup?

3. Discussion and Proposed Action Other Description:

__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
☑ Re-extract 001, 001S, 001T, 002
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

4. Project Manager Instructions...signature/date: 5/26/06

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

Reextracted batch 0606022 5/26/06

5. Final Action...signature/date: 5/26/06 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
(1)	X Project Mgr: Stone/Johnson		__ GC/LC: Kiger
__	__ Data Management: Stilwell	(2)	X MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

RECEIVED
MAY 2006

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0238

DATE RECEIVED: 03/13/06 LVL LOT # :0603L498

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11807	001	SO	06LE0222	02/23/06	03/22/06	04/24/06
J11807	001 MS	SO	06LE0222	02/23/06	03/22/06	04/24/06
J11807	001 MSD	SO	06LE0222	02/23/06	03/22/06	04/24/06
J11863	002	SO	06LE0222	02/23/06	03/22/06	04/24/06
J11864	003	SO	06LE0222	02/23/06	03/22/06	04/24/06
J11865	004	SO	06LE0222	02/23/06	03/22/06	04/24/06
J11866	005	SO	06LE0222	02/23/06	03/22/06	04/24/06
J11867	006	SO	06LE0222	02/23/06	03/22/06	04/25/06
J11868	007	SO	06LE0222	02/23/06	03/22/06	04/25/06
LAB QC:						
SBLKWL	MB1	S	06LE0222	N/A	03/22/06	04/24/06
SBLKWL	MB1 BS	S	06LE0222	N/A	03/22/06	04/24/06

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-137 | Page 1 of 1

Collector: TILLER, B. JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti.	Sampling Location: 300 AREA ELEVATED, SAMPLE 4	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES/ LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: See OSPC

00000023

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ JB 2/14/06	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	G/P	G/P	G/P	aG	aG	aG					
No. of Container(s)	~~0~~ 1 JB 2/14/06	1	~~1~~ 0 JB 2/14/06	0	0	0					
Volume	750g	5g	15g	50g	50g	50g					
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)					
Sample No.	Matrix *	Sample Date	Sample Time								
J11807	OTHER SOLID	2-23-06	1545	X	X						

000022

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 2-23-06 1630	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 2-23-06 1630
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 0745 2-27-06	Received By/Stored In: R.Z. Steffler	Date/Time: 0745 2-27-06
Relinquished By/Removed From: R.Z. Steffler	Date/Time: 1600 2-27-06	Received By/Stored In: Fed Ex	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In:	Date/Time: 07/28/06 9:20
Relinquished By/Removed From: Alex Kleinsal	Date/Time: 3/10/06 16:00	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time: 3-13-06 1100	Received By/Stored In:	Date/Time: 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec, ~~Iso Uranium and Iso Strontium~~ then transship to Lionville Labs, if possible maintain 4 C cooling. JB 2/14/06

NOTE: Lionville- contact ~~Vicky Weiss~~ JOAN upon receipt. BOTTLE

KESSNER JB 2/14/06

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 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-141	Page 1 of 1

Collector TILLER, B. JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Price Code 9N	Data Turnaround 45 Days	Air Quality ☐	
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-K ELEVATED, SAMPLE 1	SAF No. RC-047	
Ice Chest No. AFS-04-052	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060308		Bill of Lading/Air Bill No. SEE OSPC

000000024

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)				
Sample No. / Matrix * / Sample Date / Sample Time											
J11863 / OTHER SOLID / 2-23-06 / 1330	X	X	X								

000023

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 2-23-06 1630	Received By/Stored In EAS LOCKED STORAGE — Date/Time 2-23-06 1630
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 2-27-06 0745	Received By/Stored In RZ Stiffler — Date/Time 2-27-06 0745
Relinquished By/Removed From RZ Stiffler	Date/Time 2-27-06 1600	Received By/Stored In Fed Ex — Date/Time
Relinquished By/Removed From Fed Ex	Date/Time	Received By/Stored In — Date/Time 07/26/06 9:20
Relinquished By/Removed From	Date/Time 3/10/06 16:00	Received By/Stored In — Date/Time
Relinquished By/Removed From	Date/Time 3-13-06 1100	Received By/Stored In — Date/Time 3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rick Weiss~~ upon receipt.

JOAN KESSNER 4/21/06

Matrix *

S=Soil
SD=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
Li=Liquid
V=Vegetation
X=Other

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-142 | Page 1 of 1

Collector: TILLER, B. JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-K ELEVATED, SAMPLE 2	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	Cool 4C ~~None~~ JH 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	750g	2g	5g	15g	50g	50g	50g			
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)			
Sample No.	Matrix *	Sample Date	Sample Time							
J11864	OTHER SOLID	2-23-06	1400	X	X	X				

000024

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RZ Steffler	2-27-06 0745
RZ Steffler	2-27-06 1600	Fed Ex	
Fed Ex			03/28/06 9:30
Alex Kelley	3/10/06 16:00		
Fed Ex	3-13-06 1100		3-13-06 1100

Sign/Print Names

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weise~~ JOAN KESSNER upon receipt. JH 21406

Matrix *: Se=Soil; SE=Sediment; SO=Solid; Sl=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; Ti=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 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-143	Page 1 of 1

Collector TILLER, B. JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Price Code 9N	Data Turnaround 45 Days	Air Quality ☐	
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-K ELEVATED, SAMPLE 3	SAF No. RC-047	
Ice Chest No. AFS-04-052	Field Logbook No. EL-159	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060308	Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ 2/28/06	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	750g	2g	5g	15g	50g	50g	50g			

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Carbon-14	Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)			
J11865	OTHER SOLID	2-23-06	1430	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RZ Steffler	2-27-06 0745
RZ Steffler	2-27-06 1600	Fed EX	
Fed EX			02/28/06 9:20
Alex Kellum	3/10/06 16:00		
Fed Ex	3-13-06 1100		3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs. if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rick Weiss~~ JOAN KESSNER upon receipt. 4 pA 21906

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 (08/29/2005)

Hanford Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-144 | Page 1 of 1

Collector: TILLER, B. JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: ELEVATED #4 100-K ~~LOW, SAMPLE T~~	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C	None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	750g	2g	5g	15g	50g	50g	50g				

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Carbon-14	Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)			
J11866	OTHER SOLID	2-23-06	1500	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RZ Steffler	2-27-06 0745
RZ Steffler	2-27-06 1600	Fed Ex	
Fed Ex			02/28/06 9:20
Flex Delivery	3/10/06 16:00		
Fed Ex	3-13-06 1100		3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ upon receipt.

JOAN KESSNER

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 (08/29/2005)

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-145 | Page 1 of 1

Collector: TILLER, B. JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: ELEVATED #5 100-K ~~LOW, SAMPLE 2~~	SAF No.: RC-047	
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597 JES 2-27-06	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A060308	Bill of Lading/Air Bill No.: SEE OSPC	

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POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C "None" J/A 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1	1				
Volume	750g	2g	5g	15g	50g	50g	50g				
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)				
Sample No.	Matrix *	Sample Date	Sample Time								
J11867	OTHER SOLID	2-23-06	1515	X	X	X					

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	RZ Steffler	2-27-06 0745
RZ Steffler	2-27-06 1600 WCH	Fed Ex	
Fed Ex			02/28/06 9:20
Alex Lilewski	3/10/06 16:00		
Fed Ex	3-13-06 1600		3-13-06 1100

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ JOANKESSNER upon receipt. J/A 21406

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 (08/29/2005)

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-146 | Page 1 of 1

Collector: TILLER, B. JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-K LOW, SAMPLE		SAF No.: RC-047
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060308		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF FISH"

Preservation	COOL 4C ~~None~~ AH 21406	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	G/P	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	750g	2g	5g	15g	50g	50g	50g			
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Carbon-14	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)			

Sample No.	Matrix *	Sample Date	Sample Time										
J11868	OTHER SOLID	2-23-06	1530	X	X	X							

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-23-06 1630	EAS LOCKED STORAGE	2-23-06 1630
EAS LOCKED STORAGE	2-27-06 0745	R2 Stoffler	2-27-06 0745
R2 Stoffler	2-27-06 1600	Fed Ex	
Fed Ex		MFM	07/28/06 9:22
Alex Belcul	3/10/06 16:00		
Fed Ex	3-13-06 1100		3-13-06 1100

Sign/Print Names

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling.

NOTE: Lionville- contact ~~Rich Weiss~~ upon receipt.

JOAN KEDSNER

AH 21406

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 (08/29/2005)

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: RCBRA			DATA PACKAGE: K0238		
VALIDATOR: TLI		LAB: LLI		DATE: 6/14/06	
			SDG: K0238		
ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)
SAMPLES/MATRIX					
J11807	J11863	J11864	J11865	J11866	
J11867	J11868				
					Solid

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? ..... Yes No N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? ..... Yes No N/A

Initial calibrations acceptable? ..... Yes No N/A

Continuing calibrations acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) ..... Yes No N/A

Calibration blank results acceptable? (Levels D, E) ..... Yes No N/A

Laboratory blanks analyzed? ..... Yes No N/A

Laboratory blank results acceptable? ..... Yes No N/A

Field/trip blanks analyzed? (Levels C, D, E) ..... Yes No N/A

Field/trip blank results acceptable? (Levels C, D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: bis (2-ethylhexyl) phthalate - U ~~at~~ 864 64, 65
di-n-butylphthalate - U in 64

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? ..... Yes No N/A

Surrogate/system monitoring compound recoveries acceptable? ..... Yes No N/A

Surrogates traceable? (Levels D, E) ..... Yes No N/A

Surrogates expired? (Levels D, E) ..... Yes No N/A

MS/MSD samples analyzed? ..... Yes No N/A

MS/MSD results acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards? (Levels D, E) ..... Yes No N/A

LCS/BSS samples analyzed? ..... Yes No N/A

LCS/BSS results acceptable? ..... Yes No N/A

Standards traceable? (Levels D, E) ..... Yes No N/A

Standards expired? (Levels D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Performance audit sample(s) analyzed? ..... Yes No N/A

Performance audit sample results acceptable? ..... Yes No N/A

Comments: MS - all out MSD - all but 7 out - J all
LCS - all but 3 out

no PAS

GC/MS ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? ..... Yes No N/A

MS/MSD RPD values acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards expired? (Levels D, E) ..... Yes No N/A

Field duplicate RPD values acceptable? ..... Yes No N/A

Field split RPD values acceptable? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: all RPD's out – J all

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? ..... Yes No N/A

Iinternal standard areas acceptable? ..... Yes No N/A

Internal standard retention times acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Transcription/calculation errors? ..... Yes No N/A

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? ..... Yes No N/A

Sample holding times acceptable? ..... Yes No N/A

Comments: all ~~of~~ <2x the limit – J

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) ..... Yes No N/A

Compound quantitation acceptable? (Levels D, E) ..... Yes No N/A

Results reported for all requested analyses? ..... Yes No N/A

Results supported in the raw data? (Levels D, E) ..... Yes No N/A

Samples properly prepared? (Levels D, E) ..... Yes No N/A

Laboratory properly identified and coded all TIC? (Levels D, E) ..... Yes No N/A

Detection limits meet RDL? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: no RDL specified

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? ..... Yes No N/A

GPC check performed? ..... Yes No N/A

GPC check recoveries acceptable? ..... Yes No N/A

GPC calibration performed? ..... Yes No N/A

GPC calibration check performed? ..... Yes No N/A

GPC calibration check retention times acceptable? ..... Yes No N/A

Check/calibration materials traceable? ..... Yes No N/A

Check/calibration materials Expired? ..... Yes No N/A

Analytical batch QC given similar cleanup? ..... Yes No N/A

Transcription/Calculation Errors? ..... Yes No N/A

Comments: