

SAF-RC-022
100-BC Burial Grounds –
Other Solid
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Jeanette Duncan (2) H9-02

mjp 03/15/06
INITIAL/DATE

COMMENTS:

SDG K0186

SAF-RC-022

Sample Location/Waste Site: 100-B-24 Spillway

RECEIVED
MAR 21 2006
EDMC

Date: 10 March2006
To: Washington Closure Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 100BC Burial Grounds – Other Solids – Waste Site 100-B-24 Spillway
Subject: PCB - Data Package No. K0186-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K0186 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
J10V95	1/17/06	Solid	C	See note 1
J10V96	1/17/06	Solid	C	See note 1

1 – PCBs by 8082.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, February 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 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".

All holding times were acceptable.

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· **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 70% to 130%. 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.

All 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".

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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 30%. 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.

All precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (J10V95/J10V96) were submitted for analysis. Field duplicates are assessed using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

· **Analytical Detection Levels**

Reported analytical detection levels are compared against the 100 Area RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

· **Completeness**

Data Package No. K0186 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%.

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MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

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

DOE/RL-96-22, Rev. 4, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, February 2005.

Appendix 1

Glossary of Data Reporting Qualifiers

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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).

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Appendix 2

Summary of Data Qualification

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PCB DATA QUALIFICATION SUMMARY*

SDG: K0186	REVIEWER: TLI	PROJECT: 100-B-24	PAGE <u>1</u> OF <u>1</u>
COMMENTS: No qualifiers assigned			

* - 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.

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Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

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Project: WASHINGTON CLOSURE HANFORD					
Laboratory: LLI		SDG: K0186			
Sample Number		J10V95		J10V96	
Remarks		Duplicate			
Sample Date		1/17/06		1/17/06	
Extraction Date		1/19/06		1/19/06	
Analysis Date		1/21/06		1/21/06	
PCB	RQL	Result	Q	Result	Q
Aroclor-1016	100	14 U		14 U	
Aroclor-1221	100	14 U		14 U	
Aroclor-1232	100	14 U		14 U	
Aroclor-1242	100	14 U		14 U	
Aroclor-1248	100	14 U		14 U	
Aroclor-1254	100	14 U		14 U	
Aroclor-1260	100	14 U		14 U	

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Sample Information	Cust ID:	J10V95	J10V95	J10V95	J10V96	PBLKAG	PBLKAG BS
RFW#:	002	002 MS	002 MSD	003	06LE0048-MB1	06LE0048-MB1	
Matrix:	SOLID	SOLID	SOLID	SOLID	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	73 %	82 %	81 %	78 %	77 %	81 %
	Decachlorobiphenyl	73 %	81 %	80 %	76 %	78 %	80 %
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----							
Aroclor-1016	14 U	94 %	94 %	14 U	13 U	95 %	
Aroclor-1221	14 U	29 U	29 U	14 U	13 U	13 U	
Aroclor-1232	14 U	29 U	29 U	14 U	13 U	13 U	
Aroclor-1242	14 U	29 U	29 U	14 U	13 U	13 U	
Aroclor-1248	14 U	29 U	29 U	14 U	13 U	13 U	
Aroclor-1254	14 U	29 U	29 U	14 U	13 U	13 U	
Aroclor-1260	14 U	99 %	99 %	14 U	13 U	99 %	

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3/3/06

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

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

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Case Narrative

Client: TNU-HANFORD RC-022
LVL #: 0601L110
SDG/SAF # K0186 / RC-022

W.O. #: 11343-606-001-9999-00
Date Received: 01-19-2006

PCB

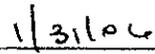
Two (2) solid samples were collected on 01-17-2006.

The samples and their associated QC samples were extracted on 01-19-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 01-21-2006. 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 a sample that met LVL's sample acceptance policy.
2. The samples were extracted and analyzed within required 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 obtainable 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.
10. LVL 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


Date

kimv:\group\data\pestnu hanford\0601-110.pcb
The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 7 pages.

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Collector Doug Bowers/Charlene Martinez / <i>R. Singleton</i>	Company Contact Doug Bowers	Telephone No. 531-0701	Project Coordinator KESSNER, JH	Price Code	Data Turnaround 90000006
Project Designation 100-BC Burial Grounds - Other Solid Quick Turn	Sampling Location 100-B-24 Spillway Waste Site	SAF No. RC-022	Air Quality <input type="checkbox"/>		
Ice Chest No. <i>AFS-04-021</i>	Field Logbook No. EFL 1173 <i>7</i>	COA C11BX4A000	Method of Shipment fed ex		
Shipped To EBERLINE SERVICES <i>LIONVILLE</i>	Offsite Property No. <i>0117/06 A060215</i>	Bill of Lading/Air Bill No. <i>See OSPC</i>			

POSSIBLE SAMPLE HAZARDS/REMARKS none <i>< dot limits</i> Special Handling and/or Storage <i>Cool 4 degrees Centigrade</i> 000014	Preservation	None	Cool 4C	None	None	None						
	Type of Container	aG	aG	G/P	G/P	G/P						
	No. of Container(s)	1	1	1	1	1						
	Volume	250mL	250mL	500mL	250mL	250mL						
SAMPLE ANALYSIS		See item (1) in Special Instructions.	PCBs - 8082	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89/90 - Total Sr						

Sample No.	Matrix *	Sample Date	Sample Time									
J10V94	OTHER SOLID	<i>01/17/06</i>	<i>0900</i>	<i>✓</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>				
J10V95	OTHER SOLID	<i>01/17/06</i>	<i>1012</i>	<i>✓</i>	<i>✓</i>	<i>-</i>	<i>-</i>	<i>-</i>				
J10V96	OTHER SOLID	<i>01/17/06</i>	<i>1015</i>	<i>✓</i>	<i>✓</i>	<i>-</i>	<i>-</i>	<i>-</i>				

CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix * S=Soil SE=Soil/soil 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
Relinquished By/Removed From <i>Kevin Singleton</i>	Date/Time <i>1-17-06</i>	Received By/Stored In <i>3728 RCFB</i>	Date/Time <i>1-17-06</i>	-Run gross alpha/gross beta off available material (1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7470 - (CV) (2) Gamma Spectroscopy (FCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155) <i>(Signature) 01/17/06</i>				
Relinquished By/Removed From <i>3728 IB</i>	Date/Time <i>1-18-06</i>	Received By/Stored In <i>1130</i>	Date/Time <i>1-18-06</i>					
Relinquished By/Removed From <i>R. Steffler R. J. Steffler</i>	Date/Time <i>1-18-06</i>	Received By/Stored In <i>Fed Ex</i>	Date/Time <i>1-18-06</i>					
Relinquished By/Removed From <i>Fed Ex</i>	Date/Time <i>1/19/06</i>	Received By/Stored In <i>(Signature)</i>	Date/Time <i>0920</i>					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

Appendix 5
Data Validation Supporting Documentation

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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 PD

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: 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: _____

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: _____

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: _____

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: _____

