

0055047

Date: 6 November 2000
 To: Bechtel Hanford Inc. (technical representative)
 From: TechLaw, Inc.
 Project: 105-F/DR Phase III Follow-on Sampling of Valve Pits (F/DR) and Solids
 Subject: PCB - Data Package No. H0991-RLN (SDG No. H0991)

RECEIVED
 JUN 11 2001

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INTRODUCTION

This memo presents the results of data validation on Summary Data Package No. H0991-RLN prepared by Recra LabNet (RLN). A list of the samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analysis
B100T6	8/22/00	Soil	C	PCBs by 8082
B100X1	8/22/00	Soil	C	PCBs by 8082
B100X2	8/22/00	Soil	C	PCBs by 8082
B100X3	8/22/00	Soil	C	PCBs by 8082
B100X4	8/22/00	Soil	C	PCBs by 8082
B100X5	8/22/00	Soil	C	PCBs by 8082
B100W6	8/22/00	Soil	C	PCBs by 8082
B100W7	8/22/00	Soil	C	PCBs by 8082
B100W8	8/22/00	Soil	C	PCBs by 8082
B100W9	8/22/00	Soil	C	PCBs by 8082
B100X0	8/22/00	Soil	C	PCBs by 8082
B100W1	8/22/00	Soil	C	PCBs by 8082
B100W2	8/22/00	Soil	C	PCBs by 8082
B100W3	8/22/00	Soil	C	PCBs by 8082
B100W4	8/22/00	Soil	C	PCBs by 8082
B100W5	8/22/00	Soil	C	PCBs by 8082

Data validation was conducted in accordance with the Bechtel Hanford Incorporated (BHI) validation statement of work and "Sample and Analysis Plan for 105F and 105DR Phase III Below Grade Structures and Underlying Soils" (DOE/RL-99-35). Appendices 1 through 5 provide the following information as indicated below:

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- 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.

- **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 practical quantitation limit (PQL). 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 PQL, the result is qualified as undetected and elevated to the PQL.

All method blank target compound results were acceptable.

Field Blanks

No field blanks were submitted for analysis, therefore, no field blank data was available for review.

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- **Accuracy**

Matrix Spike

Matrix spike 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 analyses are performed in duplicate and must be within control limits 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 matrix spike 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.

Due to a surrogate recovery outside acceptable limits, all PCB results in sample B100XO were qualified as estimates and flagged "J".

All other surrogate recovery 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

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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 matrix spike/matrix spike duplicate precision results were acceptable.

Field Duplicate Samples

One pair of field duplicate samples (samples B100X4/B100X5) were submitted to RLN for analysis. The duplicate sample results were compared using the validation guidelines for determining the RPD between a sample and its duplicate. The RPD for aroclor-1260 (117%) was outside acceptable limits. Under the BHI statement of work, no qualification is required. All other field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the 105-F/DR PQLs, to ensure that laboratory detection levels meet the required criteria. The reported detection limit was exceeded for the following: All undetected results in samples B100X2, B100W6 and B100W8; aroclor-1221 in samples B100W2 and B100X4. Under the BHI statement of work, no qualification is required.

- **Completeness**

Data Package No. H0991-RLN (SDG No. H0991) 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

Due to a surrogate recovery outside acceptable limits, the PCB results in sample B100X0 were qualified as estimates and flagged "J". Data flagged "J" is an estimate, but under the BHI validation SOW, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

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The reported detection limit was exceeded for the following: All undetected results in samples B100X2, B100W6 and B100W8; aroclor-1221 in samples B100W2 and B100X4. Under the BHI statement of work, no qualification is required.

REFERENCES

BHI, MRB-SBB-A23665, *Validation Statement of Work*, Bechtel Hanford Incorporated, September 5, 1997.

DOE/RL-99-35, *Sample and Analysis Plan for 105F and 105DR Phase III Below Grade Structures and Underlying Soils*.

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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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DATA QUALIFICATION SUMMARY

SDG: H0991	REVIEWER: TLI	DATE: 11/6/00	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	J/UJ	B100X0	Surrogate recovery

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Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

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Project: BECHTEL-HANFORD																					
Laboratory: RECRA																					
Case		SDG: H0981																			
Sample Number		B100TS		B100X1		B100X2		B100X3		B100X4		B100X5		B100W6		B100W7		B100W8		B100W9	
Remarks		Duplicate																			
Sample Date		8/22/00		8/22/00		8/22/00		8/22/00		8/22/00		8/22/00		8/22/00		8/22/00		8/22/00		8/22/00	
PCB	POL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aroclor-1016	100	35	U	35	U	180	U	34	U	72	U	37	U	180	U	34	U	180	U	34	U
Aroclor-1221	100	70	U	70	U	380	U	68	U	140	U	73	U	380	U	69	U	380	U	68	U
Aroclor-1232	100	35	U	35	U	180	U	34	U	72	U	37	U	180	U	34	U	180	U	34	U
Aroclor-1242	100	35	U	35	U	180	U	34	U	72	U	37	U	180	U	34	U	180	U	34	U
Aroclor-1248	100	35	U	35	U	180	U	34	U	72	U	37	U	180	U	34	U	180	U	34	U
Aroclor-1254	100	35	U	35	U	180	U	34	U	72	U	37	U	180	U	34	U	180	U	34	U
Aroclor-1260	100	35	U	35	U	580		34	U	420		110		570		34	U	1100		34	U
Sample Number		B100X0		B100W1		B100W2		B100W3		B100W4		B100W5									
Remarks																					
Sample Date		8/22/00		8/22/00		8/22/00		8/22/00		8/22/00		8/22/00									
PCB	POL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aroclor-1016	100	72	U	34	U	35	U	40	U	34	U	34	U	34	U						
Aroclor-1221	100	140	U	68	U	70	U	80	U	69	U	68	U								
Aroclor-1232	100	72	U	34	U	35	U	40	U	34	U	34	U								
Aroclor-1242	100	72	U	34	U	35	U	40	U	34	U	34	U								
Aroclor-1248	100	72	U	34	U	170		40	U	34	U	34	U								
Aroclor-1254	100	72	U	34	U	35	U	40	U	34	U	34	U								
Aroclor-1260	100	270	J	34	U	160		350		34	U	88									

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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.

Recre LabNet - Lincolnville Laboratory

PCBs by GC

Report Date: 10/09/00 11:24

RFM Batch Number: 00081374

Client: TNU-HANFORD B09-052

Work Order: 10985001001 Page: 1

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	Cust ID:	B100T6	B100T6	B100T6	B100X1	B100X2	B100X3
Sample Information	RFM#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	5.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	88 %	78 %	72 %	95 %	88 %	85 %
	Decachlorobiphenyl	76 %	69 %	65 %	45 %	71 %	72 %
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----							
Aroclor-1016		35 U	35 U	35 U	35 U	180 U	34 U
Aroclor-1221		70 U	70 U	70 U	70 U	360 U	68 U
Aroclor-1232		35 U	35 U	35 U	35 U	180 U	34 U
Aroclor-1242		35 U	35 U	35 U	35 U	180 U	34 U
Aroclor-1248		35 U	35 U	35 U	35 U	180 U	34 U
Aroclor-1254		35 U	102 %	96 %	35 U	180 U	34 U
Aroclor-1260		35 U	35 U	35 U	35 U	580	34 U

	Cust ID:	B100X4	B100X5	B100W6	B100W7	B100W8	B100W9
Sample Information	RFM#:	005	006	007	008	009	010
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	2.00	1.00	5.00	1.00	5.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	58 %	58 %	70 %	58 %	65 %	65 %
	Decachlorobiphenyl	69 %	61 %	103 %	54 %	50 %	55 %
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----							
Aroclor-1016		72 U	37 U	180 U	34 U	180 U	34 U
Aroclor-1221		140 U	73 U	360 U	69 U	360 U	68 U
Aroclor-1232		72 U	37 U	180 U	34 U	180 U	34 U
Aroclor-1242		72 U	37 U	180 U	34 U	180 U	34 U
Aroclor-1248		72 U	37 U	180 U	34 U	180 U	34 U
Aroclor-1254		72 U	37 U	180 U	34 U	180 U	34 U
Aroclor-1260		420	110	570	34 U	1100	34 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 GC

11/5/00

10-100

P. 5/13

OCT 23 02:04PM BHI S&D MANAGEMENT 505 372 9487

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Reetra LabNet - Lionville Laboratory

PCBs by GC

Report Date: 10/09/00 11:24

RFW Batch Number: 000BL374

Client: THU-HAMFORD B90-092

Work Order: 10985001001 Page: 2

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P.6/13

Sample Information	Cust ID:	B100X0	B100W1	B100W2	B100W3	B100W4	B100W5
	RFW#:	011	012	013	014	015	016
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	2.00	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	35 ‡	70 ‡	78 ‡	58 ‡	90 ‡	88 ‡
	Decachlorobiphenyl	30 * ‡	61 ‡	82 ‡	61 ‡	76 ‡	73 ‡
		-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----
Aroclor-1016		72 U J	34 U	35 U	40 U	34 U	34 U
Aroclor-1221		140 U	68 U	70 U	80 U	69 U	68 U
Aroclor-1232		72 U	34 U	35 U	40 U	34 U	34 U
Aroclor-1242		72 U	34 U	35 U	40 U	34 U	34 U
Aroclor-1248		72 U	34 U	170	40 U	34 U	34 U
Aroclor-1254		72 U	34 U	35 U	40 U	34 U	34 U
Aroclor-1260		270	34 U	160	350	34 U	86

OCT 23 '00 02:04PM BHI S&D MANAGEMENT 509 372 9487

000013

Cust ID: PBLKYV PBLKYV BS

RFW# 00LE1076-NB1 00LE1076-NB1

Matrix: SOIL SOIL

D.F.: 1.00 1.00

Units: UG/KG UG/KG

Surrogate:	Tetrachloro-m-xylene	75 ‡	82 ‡
	Decachlorobiphenyl	71 ‡	76 ‡
		-----fl-----	-----fl-----
Aroclor-1016		33 U	33 U
Aroclor-1221		67 U	67 U
Aroclor-1232		33 U	33 U
Aroclor-1242		33 U	33 U
Aroclor-1248		33 U	33 U
Aroclor-1254		33 U	84 ‡
Aroclor-1260		33 U	33 U

NV-100
11/5/00

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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Chemical and Environmental Measurement Information



Recra LabNet Philadelphia Analytical Report

Client: TNU HANFORD B00-052
RFW#: 0008L374
SDG/SAFW: H0991/B00-052

W.O.#: 10985-001-001-9999-00
Date Received: 08-26-00

PCB

The set of samples consisted of sixteen (16) soil samples collected on 08-22-00.

The samples and their associated QC samples were extracted on 09-01-00 and analyzed according to Recra OPs based on SW846, 3rd Edition procedures on 09-28,29,30-00 and 10-02-00. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082 for Aroclors only.

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

- 1. The cooler temperature has been recorded on the chain-of-custody.
2. All required holding times for extraction and analysis have been met.
3. The samples and their associated QC samples received a sulfuric acid and sulfur cleanup.
4. The method blank was below the reporting limits for all target compounds.
5. One (1) of forty (40) surrogate recoveries was outside QC limits; however, the surrogate recovery acceptance criteria were met (i.e., no more than one outlier per sample).
6. The blank spike recovery was within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. Several samples required instrument dilutions due to the high concentrations of target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.
9. All initial calibrations associated with this data set were within acceptance criteria.
10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

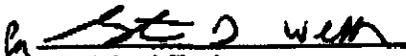
The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13 pages.

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- 11. Patterns for Aroclors 1248, 1254 and 1260 were identified in these samples. The reported Aroclor(s) was/were chosen based on the best pattern match and fit. Quantitation was performed using congeners common to both Aroclors to give the best overall total PCB concentration.

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



J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

10-17-00
Date

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CTO

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Project Coordinator
TRIDENT, SI

Company Contact
Telephones No.
373 3178

Project Designation
05-FDR Phase II: Follow-on Sampling of Valve Pits (FD)

Print Code: 8L

Project Number
800-632

Company Contact
Name Address
1007 South Field Ave

Air Quality

Method of Shipment
FEDEX

Sampling Location
Pit # 1133-4

848518496

8105F280C

OSHA Property No. A-000295

POSSIBLE SAMPLE HAZARD/REMARKS
NONE

Preservation	Out c.	Out c.	Out c.
Type of Container	1	1	1
No. of Containers	1	1	1
Volumes	125ml.	250ml.	250ml.

SPECIAL INSTRUCTIONS
Samples stored in Ref. 3B at Box 3728 Shipping Facility very fragile collector not available to re-ship can plus ref. 3B for shipment.

Sample No.	Matrix	Sample Time	Out c.	Out c.	Out c.	Date/Time
B100w1		1308	X	Y	X	11/01/07
B100w2		1311	Y	Y	Y	11/01/07
B100w3		1320	Y	X	Y	11/01/07
B100w4		1327	X	X	Y	11/01/07
B100w5		1335	Y	Y	Y	11/01/07

CHAIN OF POSSESSION
Significant Events

Received by Doug Brown Date/Time 8/27/00/1640
Received by Doug Brown Date/Time 8/27/00/1659
Received by Doug Brown Date/Time 8/27/00/1700
Received by Doug Brown Date/Time 8/27/00/1700

LABORATORY SECTION
RECEIVED BY
DATE/TIME

FINAL SAMPLE DISPOSITION
RECEIVED BY
DATE/TIME

Bechtel Hanford Inc.		CHAIN OF CUSTODY			Project Coordinator TRENT, B		Price Code 8L	Date 10/20/00
Collector Doug Bowen		Company Contact Jason Adler		Telephone No. 372 2178		SAP No. B08-052		Air Quality <input type="checkbox"/>
Project Designation 105-PDR Phase III: Follow-on Sampling of Valve Pits (FID)		Sampling Location 105F Solid Feed area		Field Logbook No. EFL 1137-B		Method of Shipment FEDEX		21 Days
Site Characterization EKC96058/96001(2)		Office Property No. A-0000295		CDM R105F2280C		Bill of Lading/Air Bill No. 72557953 8485/8496		
Shipped As TMA/RECRA		Preserve Non		Can #1	Can #2	Can #3		
POSSIBLE SAMPLE HAZARDS/REMARKS NONE		Type of Container		1G	1G	1G		
Special Handling and/or Storage		No. of Container(s)		1	1	1		
		Volume		125mL	250mL	375mL		
		Chemical		Non - 7156	ICP Metals - 6000A (P/L) (Chromium)	ICs - 8023		
SAMPLE ANALYSIS								
Sample No.	Matrix *	Sample Date	Sample Time					
D100W6	S	8-22-00	1341	X	X	X		D10108
D100W7	S	8-22-00	1347	X	X	X		D10109
D100W8	S	8-22-00	1354	X	X	X		D10110
D100W9	S	8-22-00	1400	X	X	X		D10111
D100X0	S	8-22-00	1406	X	X	X		D10112
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By: Doug Bowen		Date/Time: 8/22/00/1600		Received By: R.F. 3B		Date/Time: 8-22-00/1600		<ul style="list-style-type: none"> 0-Gal 20-Gallon 50-Gallon 9-Gallon 10-Gallon 15-Gallon 20-Gallon 25-Gallon 30-Gallon 35-Gallon 40-Gallon 45-Gallon 50-Gallon 55-Gallon 60-Gallon 65-Gallon 70-Gallon 75-Gallon 80-Gallon 85-Gallon 90-Gallon 95-Gallon 100-Gallon
Relinquished By: R.F. 3B		Date/Time: 8-25-00		Received By: R. Thorne		Date/Time: 8-25-00		
Relinquished By: R. Thorne		Date/Time: 8-25-00		Received By: FEDEX		Date/Time: 8-25-00		
Relinquished By: FEDEX		Date/Time: 9/26/00		Received By: Keith Henry		Date/Time: 9/26/00		
Relinquished By: Keith Henry		Date/Time: 9/26/00		Received By: Keith Henry		Date/Time: 9/26/00		
LABORATORY SECTION				SPECIAL INSTRUCTIONS				
Received By:		Date/Time:		Samples stored in ReLo 3B at the 3728 Shipping Facility on R.F. 3B Collector and available to relinquish samples on 8/25/00 for shipment.				
FINAL SAMPLE DISPOSITION		Disposal Method:		Date/Time:				

OCT 23 '00 02:05PM BHI S&D MANAGEMENT 509 372 3487

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0000-014

DMU-054-03

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					Price Code 8L		Date Turnaround 21 Days	
Collector Doug Bowers		Company Contact Jason Adler		Telephone No. 372 2178		Project Coordinator TRENT, ST		Air Quality <input type="checkbox"/>		
Project Designation 103-FDR Phase II: Follow-on Sampling of Valve Pits (FD)		Sampling Location 103F valve pit		SAP No. B40-052		Method of Shipment FED EX		Date Turnaround 21 Days		
Ice Chest No. EPC 961058/96001 (2)		Field Logbook No. EPL 1133-8		COA R10SF280C		Bill of Lading/Air Bill No. 42357953-849618485				
Shipped To TMA/TECRA		Offsite Property No. H-0010295								
POSSIBLE SAMPLE HAZARDS/REMARKS NONE				Preservation	Cool 4C	Cool 4C	Cool 4C			
				Type of Container	20	20	20			
				No. of Container(s)	1	1	1			
				Volume	125ml	250ml	250ml			
Special Handling and/or Storage				Chromium Hex - 7136	ICP Meth- 40106 (7AL) (Chromium)	PCOs - 503				
SAMPLE ANALYSIS										
00020										
Sample No.	Matrix *	Sample Date	Sample Time							
B10076	S	8-22-00	0900	X	X	X		B100X8		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *		
Relinquished By Doug Bowers		Received By STAFF		Date/Time 8-22-00/1400		Date/Time 8-22-00/1600		Date/Time		
Relinquished By R. Thorton		Received By R. Thorton		Date/Time 8-25-00		Date/Time 8-25-00		Date/Time		
Relinquished By R. Thorton		Received By FED EX		Date/Time 8-25-00		Date/Time		Date/Time		
Relinquished By B. K.		Received By Trent Henry		Date/Time 8/26/00/1730		Date/Time		Date/Time		
Relinquished By		Received By		Date/Time		Date/Time		Date/Time		
Relinquished By		Received By		Date/Time		Date/Time		Date/Time		
LABORATORY SECTION		Received By		Date/Time		Date/Time		Date/Time		
FINAL SAMPLE DISPOSITION		Disposal Method		Date/Time		Disposed By		Date/Time		

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OCT 23 '00 02:05PM BHI S&D MANAGEMENT 509 372 9487

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Appendix 5

Data Validation Supporting Documentation

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PESTICIDE/PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 10SD/fk <i>Ualva pt</i>			DATA PACKAGE: H0991		
VALIDATOR: TLI		LAB: <i>Recept</i>		DATE: 10/24/00	
CASE:			SDG: H0991		
ANALYSES PERFORMED					
<input type="checkbox"/> CLP3/80	<input type="checkbox"/> SW-846 8080	<input type="checkbox"/> SW-846 8081	<input checked="" type="checkbox"/> 9082	<input type="checkbox"/>	<input type="checkbox"/>
SAMPLES/MATRIX <i>B100T6 B100X1 B100X2 B100X3</i>					
<i>B100X4 B100X5 B100W6 B100W7 B100W8 B100W9</i>					
<i>B100X6 B100W1 B100W2 B100W3 B100W4 B100W5</i>					
<i>soil</i>					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? Yes No **N/A**

Is a case narrative present? **Yes** No **N/A**

Comments: _____

2. HOLDING TIMES

Are sample holding times acceptable? **Yes** No N/A

Comments: _____

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

3.1 INSTRUMENT PERFORMANCE (METHOD 8080 AND 8081)

Are DDT retention times acceptable Yes No **N/A**

Are calibration standard retention times acceptable? Yes No **N/A**

Are DDT and endrin breakdowns acceptable? Yes No **N/A**

A-2000022

PESTICIDE/PCB DATA VALIDATION CHECKLIST

Are DBC retention times acceptable? Yes No (N/A)
Is the GC/MS tuning/performance check acceptable? Yes No (N/A)

Comments: _____

3.2 CALIBRATIONS (METHOD 8080 AND 8081)

Are EVAL standard calibration factors and %RSD values acceptable? Yes No (N/A)
Are quantitation column calibration factor %RSD values acceptable? Yes No (N/A)
Were the analytical sequence requirements met? Yes No (N/A)
Are continuing calibration %D values acceptable? Yes No (N/A)

Comments: _____

3.3 INSTRUMENT PERFORMANCE AND INITIAL CALIBRATION (3/90 SOW)

Was the initial calibration sequence performed? Yes No (N/A)
Was the resolution acceptable in the resolution check mix? . . Yes No (N/A)
Is resolution acceptable in the PEM, INDA and INDB? Yes No (N/A)
Are DDT and Endrin breakdowns acceptable? Yes No (N/A)
Are retention times in PEMs and calibration mixes acceptable? . Yes No (N/A)
Are RPD values in the PEMs acceptable? Yes No (N/A)
Are %RSD values acceptable? Yes No (N/A)

Comments: _____

3.4 CALIBRATION VERIFICATION (3/90 SOW)

Were the analytical sequence requirements met? Yes No (N/A)
Is resolution acceptable in the PEMs? Yes No (N/A)
Are initial calibrations acceptable? Yes No (N/A)

PESTICIDE/PCB DATA VALIDATION CHECKLIST

Are retention times acceptable in the
PEMs, INDA and INDB mixes? Yes No N/A

Are RPD values in the PEMs acceptable? Yes No N/A

Are the DDT and endrin breakdowns acceptable? Yes No N/A

Was GPC cleanup performed? Yes No N/A

Is the GPC calibration check acceptable? Yes No N/A

Was Florisil cleanup performed? Yes No N/A

Is the Florisil performance check acceptable? Yes No N/A

Comments: _____

4. BLANKS

Were laboratory blanks analyzed? Yes No N/A

Are laboratory blank results acceptable? Yes No N/A

Were field/trip blanks analyzed? Yes No N/A

Are field/trip blank results acceptable? Yes No N/A

Comments: XS dup of ytc NO FB

5. ACCURACY

Were surrogates analyzed? Yes No N/A

Are surrogate recoveries acceptable? Yes No N/A

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

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

Were LCS samples analyzed? Yes No N/A

Are LCS results acceptable? Yes No N/A

Comments: DCB 3070 B100X0 - J/UT

PESTICIDE/PCB DATA VALIDATION CHECKLIST

6. PRECISION

- Are MS/MSD RPD values acceptable? Yes No N/A
- Are laboratory duplicate results acceptable? Yes No N/A
- Are field duplicate RPD values acceptable? Yes No N/A
- Are field split RPD values acceptable? Yes No N/A

Comments: _____

 X5 dup of X4 1268 11790

7. SYSTEM PERFORMANCE

- Is chromatographic performance acceptable? Yes No N/A
- Are positive results resolved acceptably? Yes No N/A

Comments: _____

8. COMPOUND IDENTIFICATION AND QUANTITATION

- Is compound identification acceptable? Yes No N/A
- Is compound quantitation acceptable? Yes No N/A

Comments: _____

9. REPORTED RESULTS AND QUANTITATION LIMITS

- Are results reported for all requested analyses? Yes No N/A
- Are all results supported in the raw data? Yes No N/A
- Do results meet the CRQLs? Yes No N/A

Comments: X2, W6, W8 - all under limits
 X0, X4 - 1221

Date: 6 November 2000
 To: Bechtel Hanford Inc. (technical representative)
 From: TechLaw, Inc.
 Project: 105-F/DR Phase III Follow-on Sampling of Valve Pits (F/DR) and Solids
 Subject: Inorganics - Data Package No. H0991-RLN (SDG No. H0991)

INTRODUCTION

This memo presents the results of data validation on Data Package No. H0991-RLN prepared by RECRA LabNet (RLN). 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	Analysis
B100T6	8/22/00	Soil	C	See note 1
B100X1	8/22/00	Soil	C	See note 1
B100X2	8/22/00	Soil	C	See note 1
B100X3	8/22/00	Soil	C	See note 1
B100X4	8/22/00	Soil	C	See note 1
B100X5	8/22/00	Soil	C	See note 1 & 2
B100W6	8/22/00	Soil	C	See note 1
B100W7	8/22/00	Soil	C	See note 1
B100W8	8/22/00	Soil	C	See note 1
B100W9	8/22/00	Soil	C	See note 1
B100X0	8/22/00	Soil	C	See note 1
B100W1	8/22/00	Soil	C	See note 1
B100W2	8/22/00	Soil	C	See note 1
B100W3	8/22/00	Soil	C	See note 1
B100W4	8/22/00	Soil	C	See note 1
B100W5	8/22/00	Soil	C	See note 1

- 1- ICP metals - 6010B (chromium); chromium VI.
- 2 - Chromium VI analysis cancelled.

Data validation was conducted in accordance with the Bechtel hanford Incorporated (BHI) validation statement of work and "Sample and Analysis Plan for 105F and 105DR Phase III Below Grade Structures and Underlying Soils" (DOE/RL-99-35). Appendices 1 through 6 provide the following information as indicated below:

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- 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
- Appendix 6. Additional Data Requested by Client

DATA QUALITY OBJECTIVES

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within six (6) months for ICP metals and 30 days for chromium VI.

All holding times were acceptable.

- **Blanks**

Preparation (Method) Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "U". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the practical quantitation limit (PQL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the PQL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

All preparation blank results were acceptable.

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Field Blanks

No field blanks were submitted for analysis, therefore, no field blank results were available for review.

- **Accuracy**

Matrix Spike

Matrix spike (MS) 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 recoveries must fall within the range of 70% to 130%. Samples with a spike recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a spike recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a spike recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a spike recovery greater than 130% and a sample result less than the IDL, no qualification is required.

Due to a matrix spike recovery of 66.7%, all chromium (ICP) results were qualified as estimates and flagged "J".

All other matrix spike results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the PQL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the PQL, the RPD control limit is less than or equal to two times the PQL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicates

One pair of field duplicate samples (B100X4/B100X5) were submitted for

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analysis. The samples were compared using the same criteria as laboratory duplicates. The RPD for chromium (total) was outside acceptable limits (113%). Under the BHI statement of work, no qualification is required. No RPD could be calculated for chromium VI due to the cancellation of analysis for sample B100X5.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the PQLs to ensure that laboratory detection levels meet the required criteria. All undetected chromium VI results were above the PQL. Under the BHI statement of work, no qualification is required. All other reported laboratory detection levels met the analyte specific PQL.

- **Completeness**

Data package No. H0991-QES (SDG No. H0991) was submitted for validation and verified for completeness. Completion 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

Due to a matrix spike recovery of 66.7%, all chromium (ICP) results were qualified as estimates and flagged "J". Data flagged "J" is an estimate, but under the BHI validation SOW, 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

BHI, MRB-SBB-A23665, *Validation Statement of Work*, Bechtel Hanford Incorporated, September 5, 1997.

DOE/RL-99-35, *Sample and Analysis Plan for 105F and 105DR Phase III Below Grade Structures and Underlying Soils*.

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Appendix 1

Glossary of Data Reporting Qualifiers

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Qualifiers which may be applied by data validators in compliance with BHI 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 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 concentration is an estimate, but the data are usable for decision-making purposes.
- BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.
- 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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DATA QUALIFICATION SUMMARY

SDG: H0991	REVIEWER: TLI	DATE: 11/6/00	PAGE <u>1</u> OF <u>1</u>
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Chromium (ICP)	J/UJ	All	MS percent recovery

0000CS

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

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Soxha LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 10/02/00

CLIENT: TWU-HANFORD 820-012
 WORK ORDER: 10386-001-001-9999-00

KECRA LOT #: 00002374

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B100T6	† Solids Chromium VI	21.8 2.1	† MG/ML	0.01 0.42	1.0 1.0
-002	B100X1	† Solids Chromium VI	25.4 5.6	† MG/ML	0.01 0.42	1.0 1.0
-003	B100X2	† Solids Chromium VI	22.8 0.43 u	† MG/ML	0.01 0.42	1.0 1.0
-004	B100X3	† Solids Chromium VI	27.4 0.66	† MG/ML	0.01 0.42	1.0 1.0
-005	B100X4	† Solids Chromium VI	23.1 0.43 u	† MG/ML	0.01 0.42	1.0 1.0
-006	B100X5	† Solids	21.2	†	0.01	1.0
-007	B100W6	† Solids Chromium VI	23.5 0.43 u	† MG/ML	0.01 0.42	1.0 1.0
-008	B100W7	† Solids Chromium VI	26.2 6.6	† MG/ML	0.01 0.42	1.0 1.0
-009	B100W8	† Solids Chromium VI	22.2 0.43 u	† MG/ML	0.01 0.42	1.0 1.0
-010	B100W9	† Solids Chromium VI	28.5 1.7	† MG/ML	0.01 0.42	1.0 1.0

11/5/00
 /KZ

Recon Lab Inc - Idenville

INORGANICS DATA SUMMARY REPORT 10/02/00

CLIENT: INU-HANFORD 800-052
 WORK ORDER: 10988-001-001-9999-00

RECON LOT #: 00091374

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-011	B100X0	% Solids	92.0	%	0.01	1.0
		Chromium VI	0.43	u	NO/NO	1.0
-012	B100W1	% Solids	97.4	%	0.01	1.0
		Chromium VI	1.4	NO/NO	0.41	1.0
-013	B100W2	% Solids	95.8	%	0.01	1.0
		Chromium VI	0.42	u	NO/NO	1.0
-014	B100W3	% Solids	83.4	%	0.01	1.0
		Chromium VI	0.48	u	NO/NO	1.0
-015	B100W4	% Solids	87.2	%	0.01	1.0
		Chromium VI	1.1	NO/NO	0.41	1.0
-016	B100W5	% Solids	97.2	%	0.01	1.0
		Chromium VI	0.41	u	NO/NO	1.0

11/5/00

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Reza Labret - Louisville

INORGANICS DATA SUMMARY REPORT 09/19/00

CLIENT: TRU-KANFORD 800-032

RECEIVED LOT #: 08882374

WORK ORDER: 10002-001-001-3999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DETECTION FACTOR
-009	2100W8	Chromium, Total	12.8	MG/KG	0.00	1.0 J
-010	2100W9	Chromium, Total	0.2	MG/KG	0.00	1.0 J
-011	2100X0	Chromium, Total	10.0	MG/KG	0.00	1.0 J
-012	2100W1	Chromium, Total	3.0	MG/KG	0.00	1.0 J
-013	2100W2	Chromium, Total	12.5	MG/KG	0.00	1.0 J
-014	2100W3	Chromium, Total	17.4	MG/KG	0.1	1.0 J
-015	2100W4	Chromium, Total	0.7	MG/KG	0.00	1.0 J
-016	2100W5	Chromium, Total	10.3	MG/KG	0.00	1.0 J

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11/5/00

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

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**RECRA
ENVIRONMENTAL
INC.**

Chemical and Environmental Measurement Information



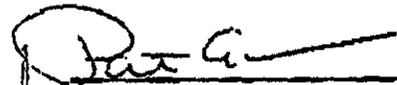
**Recra LabNet Philadelphia
Analytical Report**

Client : TNU-HANFORD B00-052
RFW# : 0008L374
SDG# : H0991
SAF# : B00-052

W.O. # : 10985-001-001-9999-00
Date Received: 08-26-00

INORGANIC CASE NARRATIVE

1. This narrative covers the analyses of 16 soil samples.
2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary.
3. Sample holding times as required by the method and/or contract were met.
4. The cooler temperatures were recorded on the chain-of-custody.
5. The method blank for Chromium VI was within method criteria.
6. The Laboratory Control Samples (LCS) for Chromium VI were within the laboratory control limits.
7. The matrix spike (MS) recovery for Soluble Chromium VI was within the 75-125% control limits, however MS recovery for Insoluble Chromium VI was above the control limits.
8. The replicate analyses were within the 20% Relative Percent Difference (RPD) control limit.
9. Results for solid samples are reported on a dry weight basis.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.



J. Michael Taylor
 Vice President
 Philadelphia Analytical Laboratory

10-17-00
Date

ep400-374

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 17 pages.

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Chemical and Environmental Measurement Information



Recra LabNet Philadelphia Analytical Report

Client: TNU-HANFORD B00-052
RFW#: 0008L374
SDG/SAF#: H0991/B00-052

W.O.#: 10985-001-001-9999-00
Date Received: 08-26-00

METALS CASE NARRATIVE

- 1. This narrative covers the analyses of 16 soil samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. All cooler temperatures have been recorded on the Chain of Custody.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. The preparation/method blank (MB) was within method criteria (less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value). Refer to the Inorganics Method Blank Data Summary.
8. All ICP Interference Check Standards were within control limits.
9. The laboratory control sample (LCS) was within the laboratory control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. The matrix spike (MS) recoveries for Chromium was outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

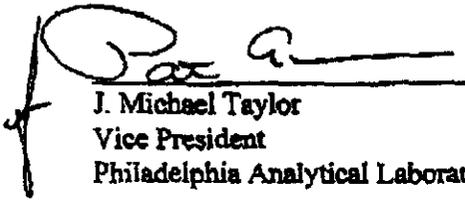
The results presented in this report relate only to the analytical testing and conditions of the samples as received and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 18 pages.

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

<u>Sample ID</u>	<u>Element</u>	<u>PDS Concentration (ppb)</u>	<u>PDS % Recovery</u>
B100T6	Chromium	400	102.6

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


 J. Michael Taylor
 Vice President
 Philadelphia Analytical Laboratory
 jmtm06-374

10-12-00
 Date



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002

Bechtel Hinesford Inc.

Company Contact
Susan Adler

Telephone No.
373 2178

Project Coordinator
TRENTE, EJ

Price Code 8L

21 Days

Contract No.
EPC 96058/9600(2)

Sampling Location
1057 Bldg Field area

SAF No.
B00-052

Air Quality

Field Logbook No.
EPL 1133-B

COA
R105F2280C

Method of Shipment
FED EX

SN of Logging/ALS, BULK
ESS 953 8/185/8496

Onsite Property No.
A-000295

Preservation
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Cat #C
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Cat #C
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Type of Container
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No. of Containers(s)
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125ml

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AG

Cat #C
AG

Cat #C
AG

Quantity
1

Cat #C
AG

Cat #C
AG

Cat #C
AG

Quantity
1

Cat #C
AG

Cat #C
AG

Cat #C
AG

Project Coordinator
TRENTE, EJ

Price Code 8L

SAF No.
B00-052

Method of Shipment
FED EX

SN of Logging/ALS, BULK
ESS 953 8/185/8496

Company Contact
Susan Adler

Telephone No.
373 2178

Project Coordinator
TRENTE, EJ

Price Code 8L

SAF No.
B00-052

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Telephone No.
373 2178

Project Coordinator
TRENTE, EJ

Appendix 5

Data Validation Supporting Documentation

000023

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT:	100D/FK		DATA PACKAGE: H0991		
VALIDATOR:	LAB: Reck		DATE: 10/24/00		
CASE:	SDG: H0991				
ANALYSES PERFORMED					
<input type="checkbox"/> CLP/CP	<input type="checkbox"/> CLP/GFAA	<input type="checkbox"/> CLP/Hg	<input type="checkbox"/> CLP/Cyanide	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> SW-848/CP	<input type="checkbox"/> SW-848/GFAA	<input type="checkbox"/> SW-848/Hg	<input type="checkbox"/> SW-848 Cyanide	<input checked="" type="checkbox"/> CKVI	<input type="checkbox"/>
SAMPLES/MATRIX	B100T06	B100X1	B100X2	B100X3	
	B100X4	B100X5	B100W6	B100W7	B100W8
	B100W9	B100X0	B100W1	B100W2	B100W3
	B100W4	B100W5			
					Sail

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Is technical verification documentation present? Yes No **N/A**

Is a case narrative present? **Yes** No N/A

Comments: _____

2. HOLDING TIMES

Are sample holding times acceptable? **Yes** No N/A

Comments: _____

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

Were initial calibrations performed on all instruments? Yes No N/A
Are initial calibrations acceptable? Yes No N/A
Are ICP interference checks acceptable? Yes No N/A
Were ICV and CCV checks performed on all instruments? Yes No N/A
Are ICV and CCV checks acceptable? Yes No N/A

Comments: _____

4. BLANKS

Were ICB and CCB checks performed for all applicable analyses? Yes No N/A
Are ICB and CCB results acceptable? Yes No N/A
Were preparation blanks analyzed? Yes No N/A
Are preparation blank results acceptable? Yes No N/A
Were field/trip blanks analyzed? Yes No N/A
Are field/trip blank results acceptable? Yes No N/A

Comments: NO FB analyzed

5. ACCURACY

Were spike samples analyzed? Yes No N/A
Are spike sample recoveries acceptable? Yes No N/A
Were laboratory control samples (LCS) analyzed? Yes No N/A
Are LCS recoveries acceptable? Yes No N/A

Comments: CR total 66.7% Jdl

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

6. PRECISION

Were laboratory duplicates analyzed? Yes No N/A
Are laboratory duplicate samples RPD values acceptable? Yes No N/A
Were ICP serial dilution samples analyzed? Yes No N/A
Are ICP serial dilution %D values acceptable? Yes No N/A
Are field duplicate RPD values acceptable? Yes No N/A
Are field split RPD values acceptable? Yes No N/A
Comments: CK total 11370 RPD (Field dup)

7. FURNACE AA QUALITY CONTROL

Were duplicate injections performed as required? Yes No N/A
Are duplicate injection %RSD values acceptable? Yes No N/A
Were analytical spikes performed as required? Yes No N/A
Are analytical spike recoveries acceptable? Yes No N/A
Was MSA performed as required? Yes No N/A
Are MSA results acceptable? Yes No N/A
Comments: _____

8. REPORTED RESULTS AND DETECTION LIMITS

Are results reported for all requested analyses? Yes No N/A
Are all results supported in the raw data? Yes No N/A
Are results calculated properly? Yes No N/A
Do results meet the CRDLs? Yes No N/A
Comments: all CK IIC over

Appendix 6

Additional Documentation Requested by Client

000027

Rocka LabNet - Liverville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/19/00

CLIENT: INU-SAMPORD 246-052

MECRA LOT #: 0000274

WORK ORDER: 10985-001-001-0000-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	99L1556-M01	Chromium, Total	0.09	u g/L	0.09	1.0

000028

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Regra LabNet - Louisville

INORGANIC ACCURACY REPORT 09/19/00

CLIENT: INU-RANFORD 000-012

REGRAL LOT #: 0000L374

WORK ORDER: 10905-001-001-0999-00

SAMPLE	SITE ID	ANALYTE	SPIKED	INITIAL	SPIKED	DILUTION	
			SAMPLE	RESULT	AMOUNT	RECOV	FACTOR (SPK)
-001	SI007W	Chromium, Total	24.7	12.3	18.6	66.7	1.6

000029

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Reera LabNet - Lincolnville

INORGANICS PRECISION REPORT 05/19/08

CLIENT: TPO-NANTON 000-002
WORK ORDER: 10904-001-001-0000-00

REERA LOT #: 00001374

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REF)
			RESULT	REPLICATE STD	STD	
-001REP	010078	Chromium, Total	12.3	9.8	25.7	1.0

000030

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Repts LabMat - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/02/00

CLIENT: TMO-MANFORD 500-082
WORK ORDER: 10905-001-001-9999-00

RCRA LOT #: 00902374

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	00LV1080-001	Chromium VI	0.40	u g/L	0.40	1.0

000031

~~06~~

Beira LabNet - Liverville

INORGANICS ACCURACY REPORT 10/02/00

CLIENT: TRU-HANFORD 800-053
 WORK ORDER: 10985-001-001-9999-00

RECBA LOT #: 00001374

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-005	B100X4	Soluble Chromium VI	5.1	0.43u	4.3	123.7	1.0
		Insoluble Chromium VI	1650	0.43u	1290	127.2	100
BLANK10	001V1088-MB1	Soluble Chromium VI	4.1	0.40u	4.0	102.6	1.0
		Insoluble Chromium VI	1146	0.40u	1176	97.1	100

000032

Regra LabNet - Lenoirville

INFORMATICS PRECISION REPORT 10/02/00

CLIENT: TWO-HANFORD 800-882
WORK ORDER: 10981-001-001-9999-00

REGRA LOT #: 00021374

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REF)
			RESULT	REPLICATE	RFD	
-001RP	810074	± Solids	95.8	95.4	0.41	1.0
-002RP	810074	Chromium VI	0.434	0.47	NC	1.0

000033

Duncan, Jeanette M

From: Weiss, Richard L
Sent: Tuesday, November 07, 2000 4:33 PM
To: Duncan, Jeanette M
Subject: Review of Validation Packages for SDG H0991

Jeante,

Validation packages for SDG H0991 - no comments.

Rich Weiss

FAX

TECHLAW, INC.

451 Hills, Suite 23
Richland, WA 99352
509-375-5667
509-375-5151 (fax)

To: Jeanette Duncan

From: Bruce Christian

Pages: 1

Date: 29 October 2000

Information Request #1

110991 - Metals (Chromium VI)

Sample B100X5 only lists % solids.

CE6 analysis cancelled by Joan Kessner
9/27/00

THE FOLLOWING FILE(S) ERASED

FILE	FILE TYPE	OPTION	TEL NO.	PAGE	RESULT
023	MEMORY TX		12087238944	17/17	OK

ERRORS

- 1) HANG UP OR LINE FAIL
- 2) BUSY
- 3) NO ANSWER
- 4) NO FACSIMILE CONNECTION



RECRA ENVIRONMENTAL INC.

Chemical and Environmental Measurement Information



Recra LabNet Philadelphia Analytical Report

Client : TNU-HANFORD B00-052
 RFW# : 0008L374
 SDG# : H0991
 SAF# : B00-052

W.O. # : 10985-001-001-9999-00
 Date Received: 08-26-00

INORGANIC CASE NARRATIVE

1. This narrative covers the analyses of 16 soil samples.
2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary.
3. Sample holding times as required by the method and/or contract were met.
4. The cooler temperatures were recorded on the chain-of-custody.

THE FOLLOWING FILE(S) ERASED

FILE	FILE TYPE	OPTION	TEL NO.	PAGE	RESULT
022	MEMORY TX		12087238944	1B/1B	OK

ERRORS

- 1) HANG UP OR LINE FAIL
- 2) BUSY
- 3) NO ANSWER
- 4) NO FACSIMILE CONNECTION



**RECRA
ENVIRONMENTAL
INC.**

Chemical and Environmental Measurement Information



**Recra LabNet Philadelphia
Analytical Report**

Client: TNU-HANFORD B00-052
RFW#: 0008L374
SDG/SAF#: H0991/B00-052

W.O.#: 10985-001-001-9999-00
Date Received: 08-26-00

METALS CASE NARRATIVE

1. This narrative covers the analyses of 16 soil samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. All cooler temperatures have been recorded on the Chain of Custody.

THE FOLLOWING FILE(S) ERASED

FILE	FILE TYPE	OPTION	TEL NO.	PAGE	RESULT
021	MEMORY TX		12087238944	13/13	OK

ERRORS

1) HANG UP OR LINE FAIL 2) BUSY 3) NO ANSWER 4) NO FACSIMILE CONNECTION

**RECRA
ENVIRONMENTAL
INC.***Chemical and Environmental Measurement Information***Recra LabNet Philadelphia
Analytical Report****Client: TNU HANFORD B00-052****RFW#: 0008L374****SDG/SAF#: H0991/B00-052****W.O.#: 10985-001-001-9999-00****Date Received: 08-26-00****PCB**

The set of samples consisted of sixteen (16) soil samples collected on 08-22-00.

The samples and their associated QC samples were extracted on 09-01-00 and analyzed according to Recra OPs based on SW846, 3rd Edition procedures on 09-28,29,30-00 and 10-02-00. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082 for Aroclors only.

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

1. The cooler temperature has been recorded on the chain-of-custody