0071078

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 copies)** H9-02 JE 09/13/06
INITIAL/DATE

COMMENTS:

SDG K0270 SAF-RC-047

RECEIVED
SEP 25 2006
EDMC

Date: 11 September 2006
To: Washington Closure Hanford (technical representative)
From: TechLaw, Inc.
Project: 100 Area and 300 Area Component of the RCBRA Sediment & Tissue
Subject: Inorganic - Data Package No. K0270-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K0270 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	Analysis
J11910	3/22/06	Solid	C	See note 1
J11911	3/22/06	Solid	C	See note 1
J11912	3/23/06	Solid	C	See note 1
J11913	3/23/06	Solid	C	See note 1
J11914	3/23/06	Solid	C	See note 1
J11916	3/21/06	Solid	C	See note 1
J11917	3/21/06	Solid	C	See note 1
J11918	3/22/06	Solid	C	See note 1
J11920	3/22/06	Solid	C	See note 1
J11921	3/22/06	Solid	C	See note 1
J11922	3/22/06	Solid	C	See note 1
J11923	3/22/06	Solid	C	See note 1
J11924	3/22/06	Solid	C	See note 1
J11925	3/23/06	Solid	C	See note 1

1 - ICP metals (6010B) and mercury by 7471A.

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 6 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
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

- **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 6 months for ICP metals and 28 days for mercury.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Preparation 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 contract required detection limit (CRDL), 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 CRDL, 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.

Due to method blank contamination, all lithium results were qualified as estimates and flagged "UJ".

All other preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and 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%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 79% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 120% or less than 80% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 120% and a sample result less than the IDL, no qualification is required.

Due to a matrix spike recovery outside QC limits (6%), all zinc results were qualified as estimates and flagged "J".

Due to a matrix spike recovery outside QC limits (131%), all silicon results were qualified as estimates and flagged "J".

Due to an LCS recover outside QC limits (48.6%), all silicon results were qualified as estimates and flagged "J".

All other accuracy 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 CRDL and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to an RPD outside QC limits (76%), all copper results were qualified as estimates and flagged "J".

Due to an RPD outside QC limits (45%), all zinc results were qualified as estimates and flagged "J".

All other laboratory duplicate results were acceptable.

Field Duplicate

No field duplicates were submitted for analysis.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the 100 and 300 Area RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data package No. K0270 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, all lithium results were qualified as estimates and flagged "UJ".
- Due to a matrix spike recovery outside QC limits (6%), all zinc results were qualified as estimates and flagged "J".
- Due to a matrix spike recovery outside QC limits (131%), all silicon results were qualified as estimates and flagged "J".
- Due to an LCS recover outside QC limits (48.6%), all silicon results were qualified as estimates and flagged "J".
- Due to an RPD outside QC limits (76%), all copper results were qualified as estimates and flagged "J".
- Due to an RPD outside QC limits (45%), all zinc 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 & Analysis Plan*.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with 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 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).

Appendix 2

Summary of Data Qualification

METALS DATA QUALIFICATION SUMMARY*

SDG: K0270	REVIEWER: TLI	Project: RCBRA	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Lithium	UJ	All	Method blank contamination
Silicon	J	All	LCS recovery
Zinc Silicon	J	All	MS recovery
Copper Zinc	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

Project: WASHINGTON CLOSURE HANFORD

Laboratory: LLI SDG: K0270

Sample Number		J11910		J11911		J11912		J11913		J11914		J11916		J11917		J11918		J11920		J11921	
Remarks																					
Sample Date		3/22/06		3/22/06		3/23/06		3/23/06		3/23/06		3/21/06		3/21/06		3/22/06		3/22/06		3/22/06	
Inorganics	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Silver	1	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U
Aluminum		35.5		56.7		56.5		17.0		36.6		42.5		176		55.0		50.5		33.8	
Arsenic	10	0.59	U	0.60	U	0.60	U	0.60	U	0.58	U	0.58	U	0.59	U	0.59	U	0.59	U	0.58	U
Boron		1.7		2.2		0.90		0.74		0.79		1.3		1.0		0.94		0.93		0.64	
Barium	2	3.4		2.8		3.6		1.5		3.2		1.9		2.3		3.8		2.0		1.6	
Beryllium		0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
Bismuth		0.50	U	0.50	U	0.50	U	0.50	U	0.48	U	0.48	U	0.50	U	0.49	U	0.50	U	0.49	U
Calcium		10900		12700		14000		6220		9290		8410		9210		13500		10800		7640	
Cadmium	0.5	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U	0.07	U
Cobalt		0.14	U	0.14	U	0.14	U	0.14	U	0.13	U	0.13	U	0.14	U	0.13	U	0.14	U	0.13	U
Chromium	1	0.80		0.63		0.85		0.91		0.72		0.62		0.80		0.83		0.87		0.46	
Copper	1	11.1	J	3.7	J	4.1	J	3.7	J	4.0	J	3.5	J	4.1	J	4.5	J	3.7	J	4.0	J
Iron		112		112		142		216		115		151		104		87.1		128		188	
Mercury		0.01	U	0.02		0.02	U	0.01	U	0.02		0.02	U	0.02	U	0.02		0.02	U	0.01	U
Potassium	400	3180		3100		2940		2800		2990		3370		3270		3530		3340		3540	
Lithium	5	0.08	UJ	0.09	UJ	0.13	UJ	0.07	UJ	0.09	UJ	0.1	UJ	0.07	UJ	0.09	UJ	0.08	UJ	0.06	UJ
Magnesium		603		520		564		339		451		494		567		690		593		481	
Manganese		4.2		4.2		4.1		2.1		3.2		5.1		5.9		5.5		4.4		3.1	
Molybdenum		0.28	U	0.28	U	0.28	U	0.28	U	0.27	U	0.30		0.29		0.28	U	0.32		0.28	U
Sodium		2080		1780		1640		1430		1560		1750		1580		1860		2500		1680	
Nickel		1.1		0.35		0.51		1.4		0.58		0.38		0.93		1.4		1.2		0.23	U
Phosphorous	5	7520		8050		8640		4850		6080		6120		6620		8700		7540		6120	
Lead	5	0.38		0.35		0.73		0.35		1.2		0.69		0.57		0.48		0.66		0.44	
Antimony	6	0.43	U	0.43	U	0.43	U	0.43	U	0.41	U	0.41	U	0.43	U	0.42	U	0.43	U	0.42	U
Selenium		0.78		1.1		1.1		0.67		0.76		0.99		0.77		0.81		0.86		0.98	
Silicon		40.1	J	28.5	J	41.7	J	25.3	J	49.2	J	54.9	J	46.4	J	38.2	J	55.8	J	35.4	J
Tin		1.2		1.3		1.1		1.0	U	1.2		1.1		1.0	U	1.1		1.1		1.0	U
Titanium		1.6		0.55		1.6		0.51		2.0		2.9		1.1		0.69		2.7		0.44	
Thallium		0.68	U	0.69	U	0.69	U	0.69	U	0.66	U	0.66	U	0.68	U	0.67	U	0.68	U	0.67	U
Uranium	30	0.98		1.4		1.5		0.86	U	0.83	U	0.87		0.85	U	0.85	U	0.85	U	0.84	U
Vanadium		0.1		0.09	U	0.14		0.09	U	0.1		0.1		0.09	U	0.09	U	0.09	U	0.09	U
Zinc		117	J	70.0	J	89.9	J	56.5	J	120	J	92.4	J	86.9	J	106	J	65.5	J	63.5	J
Zirconium	1	0.63		0.63		0.88		0.84		0.81		0.81		0.81		0.84		0.85		0.81	

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.

Project: WASHINGTON CLOSURE HANFORD

Laboratory: LLI SDG: K0270

Sample Number		J11922		J11923		J11924		J11925													
Remarks																					
Sample Date		3/22/06		3/22/06		3/22/06		3/23/06													
Inorganics	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q		
Silver	1	0.07	U	0.07	U	0.07	U	0.07	U												
Aluminum	5	39.9		43.2		32.1		39.8													
Arsenic	10	0.58	U	0.58	U	0.59	U	0.58	U												
Boron		0.81		0.71		0.71		0.53													
Barium	2	3.0		3.9		3.4		3.7													
Beryllium	0.05	0.02	U	0.02	U	0.02	U	0.02	U												
Bismuth		0.48	U	0.49	U	0.50	U	0.49	U												
Calcium		14300		18100		10100		11800													
Cadmium	0.5	0.07	U	0.07	U	0.07	U	0.07	U												
Cobalt		0.13	U	0.13	U	0.14	U	0.13	U												
Chromium		0.57		0.76		0.42		0.69													
Copper	1	3.1	J	3.8	J	2.9	J	3.0	J												
Iron	5	109		112		167		82.4													
Mercury	0.2	0.02	U	0.01	U	0.03		0.03													
Potassium		3380		3450		2870		2930													
Lithium	2	0.07	UJ	0.08	UJ	0.08	UJ	0.07	UJ												
Magnesium		665		788		474		468													
Manganese	5	4.9		4.6		3.7		4.1													
Molybdenum		0.28		0.28	U	0.28	U	0.28	U												
Sodium		3400		1790		1440		1470													
Nickel	40	0.31		0.47		0.24		0.36													
Phosphorous		8970		11900		6940		7740													
Lead	5	0.42		0.57		0.36		0.40													
Antimony	6	0.41	U	0.42	U	0.43	U	0.42	U												
Selenium		0.68		1.0		0.79		0.50													
Silicon		43.1	J	41.3	J	45.1	J	43.9	J												
Tin	5	1.0	U	1.1		1.2		1.0	U												
Titanium		1.0		0.95		1.5		1.9													
Thallium		0.66	U	0.67	U	0.68	U	0.67	U												
Uranium	30	0.98		0.84	U	0.85	U	1.2													
Vanadium	2.5	0.08	U	0.09	U	0.09	U	0.09	U												
Zinc	1	61.8	J	71.9	J	58.2	J	72.9	J												
Zirconium		0.85		1.0		1.1		0.70													

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.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/16/06

CLIENT: TMUHANFORD RC-047 X0270 LVL LOT #: 0604L725

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J11910	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	35.5	MG/KG	2.6	1.0
		Arsenic, Total	0.59 u	MG/KG	0.59	1.0
		Boron, Total	1.7	MG/KG	0.23	1.0
		Barium, Total	3.4	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.50 u	MG/KG	0.50	1.0
		Calcium, Total	10900	MG/KG	1.6	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.14 u	MG/KG	0.14	1.0
		Chromium, Total	0.80	MG/KG	0.12	1.0
		Copper, Total	11.1 J	MG/KG	0.12	1.0
		Iron, Total	112	MG/KG	3.4	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	3180	MG/KG	2.2	1.0
		Lithium, Total	0.08 UJ	MG/KG	0.03	1.0
		Magnesium, Total	603	MG/KG	0.94	1.0
		Manganese, Total	4.2	MG/KG	0.03	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	2080	MG/KG	0.74	1.0
		Nickel, Total	1.1	MG/KG	0.23	1.0
		Phosphorus, Total	7520	MG/KG	0.87	1.0
		Lead, Total	0.38	MG/KG	0.30	1.0
		Antimony, Total	0.43 u	MG/KG	0.43	1.0
		Selenium, Total	0.78	MG/KG	0.46	1.0
		Silicon, Total	40.1 J	MG/KG	2.2	1.0
		Tin, Total	1.2	MG/KG	1.0	1.0
		Titanium, Total	1.6	MG/KG	0.03	1.0
		Thallium, Total	0.68 u	MG/KG	0.68	1.0
		Uranium, Total	0.98	MG/KG	0.85	1.0
		Vanadium, Total	0.1	MG/KG	0.09	1.0
		Zinc, Total	117 J	MG/KG	0.16	1.0
		Zirconium, Total	0.63	MG/KG	0.31	1.0

9/10/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J11911	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	56.7	MG/KG	2.8	1.0
		Arsenic, Total	0.60 u	MG/KG	0.60	1.0
		Boron, Total	2.2	MG/KG	0.24	1.0
		Barium, Total	2.8	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.50 u	MG/KG	0.50	1.0
		Calcium, Total	12700	MG/KG	1.6	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.14 u	MG/KG	0.14	1.0
		Chromium, Total	0.63	MG/KG	0.12	1.0
		Copper, Total	3.7 J	MG/KG	0.12	1.0
		Iron, Total	112	MG/KG	3.4	1.0
		Mercury, Total	0.02	MG/KG	0.01	1.0
		Potassium, Total	3100	MG/KG	2.2	1.0
		Lithium, Total	0.09 UJ	MG/KG	0.03	1.0
		Magnesium, Total	520	MG/KG	0.95	1.0
		Manganese, Total	4.2	MG/KG	0.03	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1780	MG/KG	0.74	1.0
		Nickel, Total	0.35	MG/KG	0.24	1.0
		Phosphorus, Total	8050	MG/KG	0.88	1.0
		Lead, Total	0.35	MG/KG	0.20	1.0
		Antimony, Total	0.43 u	MG/KG	0.43	1.0
		Selenium, Total	1.1	MG/KG	0.46	1.0
		Silicon, Total	28.5 J	MG/KG	2.2	1.0
		Tin, Total	1.3	MG/KG	1.0	1.0
		Titanium, Total	0.55	MG/KG	0.03	1.0
		Thallium, Total	0.69 u	MG/KG	0.69	1.0
		Uranium, Total	1.4	MG/KG	0.86	1.0
		Vanadium, Total	0.09 u	MG/KG	0.09	1.0
		Zinc, Total	70.0 J	MG/KG	0.16	1.0
		Zirconium, Total	0.63	MG/KG	0.31	1.0

K 9/10/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J11912	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	56.5	MG/KG	2.8	1.0
		Arsenic, Total	0.60 u	MG/KG	0.60	1.0
		Boron, Total	0.90	MG/KG	0.24	1.0
		Barium, Total	3.6	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.50 u	MG/KG	0.50	1.0
		Calcium, Total	14000	MG/KG	1.6	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.14 u	MG/KG	0.14	1.0
		Chromium, Total	0.65	MG/KG	0.13	1.0
		Copper, Total	4.1 J	MG/KG	0.12	1.0
		Iron, Total	142	MG/KG	3.4	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	2940	MG/KG	2.2	1.0
		Lithium, Total	0.13 UJ	MG/KG	0.03	1.0
		Magnesium, Total	564	MG/KG	0.95	1.0
		Manganese, Total	4.1	MG/KG	0.03	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1640	MG/KG	0.74	1.0
		Nickel, Total	0.51	MG/KG	0.24	1.0
		Phosphorus, Total	8640	MG/KG	0.88	1.0
		Lead, Total	0.73	MG/KG	0.30	1.0
		Antimony, Total	0.43 u	MG/KG	0.43	1.0
		Selenium, Total	1.1	MG/KG	0.46	1.0
		Silicon, Total	41.7 J	MG/KG	2.2	1.0
		Tin, Total	1.1	MG/KG	1.0	1.0
		Titanium, Total	1.6	MG/KG	0.03	1.0
		Thallium, Total	0.69 u	MG/KG	0.69	1.0
		Uranium, Total	1.5	MG/KG	0.86	1.0
		Vanadium, Total	0.14	MG/KG	0.09	1.0
		Zinc, Total	89.9 J	MG/KG	0.16	1.0
		Zirconium, Total	0.88	MG/KG	0.31	1.0

9/10/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

WORK ORDER: 11343-506-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J11913	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	17.0	MG/KG	2.8	1.0
		Arsenic, Total	0.60 u	MG/KG	0.60	1.0
		Boron, Total	0.74	MG/KG	0.24	1.0
		Barium, Total	1.5	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.50 u	MG/KG	0.50	1.0
		Calcium, Total	6220	MG/KG	1.6	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.14 u	MG/KG	0.14	1.0
		Chromium, Total	0.91	MG/KG	0.13	1.0
		Copper, Total	3.7 J	MG/KG	0.12	1.0
		Iron, Total	216	MG/KG	3.4	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	2800	MG/KG	2.2	1.0
		Lithium, Total	0.07 UJ	MG/KG	0.03	1.0
		Magnesium, Total	339	MG/KG	0.95	1.0
		Manganese, Total	2.1	MG/KG	0.03	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1430	MG/KG	0.74	1.0
		Nickel, Total	1.4	MG/KG	0.24	1.0
		Phosphorus, Total	4850	MG/KG	0.88	1.0
		Lead, Total	0.35	MG/KG	0.30	1.0
		Antimony, Total	0.43 u	MG/KG	0.43	1.0
		Selenium, Total	0.67	MG/KG	0.46	1.0
		Silicon, Total	25.3 J	MG/KG	2.2	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	0.51	MG/KG	0.03	1.0
		Thallium, Total	0.69 u	MG/KG	0.69	1.0
		Uranium, Total	0.86 u	MG/KG	0.86	1.0
		Vanadium, Total	0.09 u	MG/KG	0.09	1.0
		Zinc, Total	56.5 J	MG/KG	0.16	1.0
		Zirconium, Total	0.84	MG/KG	0.21	1.0

9/10/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J11914	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	36.6	MG/KG	2.7	1.0
		Arsenic, Total	0.58 u	MG/KG	0.58	1.0
		Boron, Total	0.79	MG/KG	0.23	1.0
		Barium, Total	3.2	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.48 u	MG/KG	0.48	1.0
		Calcium, Total	9290	MG/KG	1.5	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.72	MG/KG	0.12	1.0
		Copper, Total	4.0 J	MG/KG	0.11	1.0
		Iron, Total	115	MG/KG	3.3	1.0
		Mercury, Total	0.02	MG/KG	0.01	1.0
		Potassium, Total	2990	MG/KG	2.1	1.0
		Lithium, Total	0.09 UJ	MG/KG	0.03	1.0
		Magnesium, Total	451	MG/KG	0.91	1.0
		Manganese, Total	3.2	MG/KG	0.03	1.0
		Molybdenum, Total	0.27 u	MG/KG	0.27	1.0
		Sodium, Total	1560	MG/KG	0.72	1.0
		Nickel, Total	0.58	MG/KG	0.23	1.0
		Phosphorus, Total	6080	MG/KG	0.85	1.0
		Lead, Total	1.2	MG/KG	0.29	1.0
		Antimony, Total	0.41 u	MG/KG	0.41	1.0
		Selenium, Total	0.76	MG/KG	0.44	1.0
		Silicon, Total	49.2 J	MG/KG	2.1	1.0
		Tin, Total	1.2	MG/KG	1.0	1.0
		Titanium, Total	2.0	MG/KG	0.03	1.0
		Thallium, Total	0.66 u	MG/KG	0.66	1.0
		Uranium, Total	0.83 u	MG/KG	0.83	1.0
		Vanadium, Total	0.1	MG/KG	0.08	1.0
		Zinc, Total	120 J	MG/KG	0.15	1.0
		Zirconium, Total	0.81	MG/KG	0.30	1.0

9/10/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J11916	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	42.5	MG/KG	2.7	1.0
		Arsenic, Total	0.58 u	MG/KG	0.58	1.0
		Boron, Total	1.3	MG/KG	0.23	1.0
		Barium, Total	1.9	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.48 u	MG/KG	0.48	1.0
		Calcium, Total	8410	MG/KG	1.5	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.62	MG/KG	0.12	1.0
		Copper, Total	3.5 J	MG/KG	0.11	1.0
		Iron, Total	151	MG/KG	3.3	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	3370	MG/KG	2.1	1.0
		Lithium, Total	0.1 UJ	MG/KG	0.03	1.0
		Magnesium, Total	494	MG/KG	0.91	1.0
		Manganese, Total	5.1	MG/KG	0.03	1.0
		Molybdenum, Total	0.30	MG/KG	0.27	1.0
		Sodium, Total	1750	MG/KG	0.72	1.0
		Nickel, Total	0.38	MG/KG	0.23	1.0
		Phosphorus, Total	6120	MG/KG	0.85	1.0
		Lead, Total	0.69	MG/KG	0.29	1.0
		Antimony, Total	0.41 u	MG/KG	0.41	1.0
		Selenium, Total	0.99	MG/KG	0.44	1.0
		Silicon, Total	54.9 J	MG/KG	2.1	1.0
		Tin, Total	1.1	MG/KG	1.0	1.0
		Titanium, Total	2.9	MG/KG	0.03	1.0
		Thallium, Total	0.66 u	MG/KG	0.66	1.0
		Uranium, Total	0.87	MG/KG	0.83	1.0
		Vanadium, Total	0.1	MG/KG	0.08	1.0
		Zinc, Total	92.4 J	MG/KG	0.15	1.0
		Zirconium, Total	0.81	MG/KG	0.20	1.0

9/10/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J11917	Silver, Total	0.07	u	MG/KG	0.07	1.0
		Aluminum, Total	176		MG/KG	2.8	1.0
		Arsenic, Total	0.59	u	MG/KG	0.59	1.0
		Boron, Total	1.0		MG/KG	0.23	1.0
		Barium, Total	2.3		MG/KG	0.02	1.0
		Beryllium, Total	0.02	u	MG/KG	0.02	1.0
		Bismuth, Total	0.50	u	MG/KG	0.50	1.0
		Calcium, Total	9210		MG/KG	1.6	1.0
		Cadmium, Total	0.07	u	MG/KG	0.07	1.0
		Cobalt, Total	0.14	u	MG/KG	0.14	1.0
		Chromium, Total	0.80		MG/KG	0.13	1.0
		Copper, Total	4.1	J	MG/KG	0.12	1.0
		Iron, Total	104		MG/KG	3.4	1.0
		Mercury, Total	0.02	u	MG/KG	0.02	1.0
		Potassium, Total	3270		MG/KG	2.2	1.0
		Lithium, Total	0.07	UJ	MG/KG	0.03	1.0
		Magnesium, Total	567		MG/KG	0.94	1.0
		Manganese, Total	5.9		MG/KG	0.03	1.0
		Molybdenum, Total	0.29		MG/KG	0.28	1.0
		Sodium, Total	1580		MG/KG	0.74	1.0
		Nickel, Total	0.93		MG/KG	0.23	1.0
		Phosphorus, Total	6620		MG/KG	0.87	1.0
		Lead, Total	0.57		MG/KG	0.30	1.0
		Antimony, Total	0.43	u	MG/KG	0.43	1.0
		Selenium, Total	0.77		MG/KG	0.46	1.0
		Silicon, Total	46.4	J	MG/KG	2.2	1.0
		Tin, Total	1.0	u	MG/KG	1.0	1.0
		Titanium, Total	1.1		MG/KG	0.03	1.0
		Thallium, Total	0.68	u	MG/KG	0.68	1.0
		Uranium, Total	0.85	u	MG/KG	0.85	1.0
		Vanadium, Total	0.09	u	MG/KG	0.09	1.0
		Zinc, Total	86.9	J	MG/KG	0.16	1.0
		Zirconium, Total	0.81		MG/KG	0.31	1.0

JR 9/10/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

WORK ORDER:-11143-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-008	J11918	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	55.0	MG/KG	2.8	1.0
		Arsenic, Total	0.59 u	MG/KG	0.59	1.0
		Boron, Total	0.94	MG/KG	0.23	1.0
		Barium, Total	3.8	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.49 u	MG/KG	0.49	1.0
		Calcium, Total	13500	MG/KG	1.6	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.83	MG/KG	0.12	1.0
		Copper, Total	4.5 J	MG/KG	0.12	1.0
		Iron, Total	87.1	MG/KG	3.4	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Potassium, Total	3530	MG/KG	2.2	1.0
		Lithium, Total	0.09 UJ	MG/KG	0.03	1.0
		Magnesium, Total	690	MG/KG	0.93	1.0
		Manganese, Total	5.5	MG/KG	0.03	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1860	MG/KG	0.73	1.0
		Nickel, Total	1.4	MG/KG	0.23	1.0
		Phosphorus, Total	8700	MG/KG	0.86	1.0
		Lead, Total	0.48	MG/KG	0.30	1.0
		Antimony, Total	0.42 u	MG/KG	0.42	1.0
		Selenium, Total	0.81	MG/KG	0.45	1.0
		Silicon, Total	38.2 J	MG/KG	2.2	1.0
		Tin, Total	1.1	MG/KG	1.0	1.0
		Titanium, Total	0.69	MG/KG	0.03	1.0
		Thallium, Total	0.67 u	MG/KG	0.67	1.0
		Uranium, Total	0.85 u	MG/KG	0.85	1.0
		Vanadium, Total	0.09 u	MG/KG	0.09	1.0
		Zinc, Total	106 J	MG/KG	0.15	1.0
		Zirconium, Total	0.84	MG/KG	0.31	1.0

9/10/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

WORK ORDER: 11342-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-009	J11920	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	50.5	MG/KG	2.8	1.0
		Arsenic, Total	0.59 u	MG/KG	0.59	1.0
		Boron, Total	0.93	MG/KG	0.23	1.0
		Barium, Total	2.0	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.50 u	MG/KG	0.50	1.0
		Calcium, Total	10800	MG/KG	1.6	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.14 u	MG/KG	0.14	1.0
		Chromium, Total	0.87	MG/KG	0.13	1.0
		Copper, Total	3.7 J	MG/KG	0.12	1.0
		Iron, Total	128	MG/KG	3.4	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	3340	MG/KG	2.2	1.0
		Lithium, Total	0.08 UJ	MG/KG	0.03	1.0
		Magnesium, Total	593	MG/KG	0.94	1.0
		Manganese, Total	4.4	MG/KG	0.03	1.0
		Molybdenum, Total	0.32	MG/KG	0.28	1.0
		Sodium, Total	2500	MG/KG	0.74	1.0
		Nickel, Total	1.2	MG/KG	0.23	1.0
		Phosphorus, Total	7540	MG/KG	0.87	1.0
		Lead, Total	0.66	MG/KG	0.20	1.0
		Antimony, Total	0.43 u	MG/KG	0.43	1.0
		Selenium, Total	0.86	MG/KG	0.46	1.0
		Silicon, Total	55.8 J	MG/KG	2.2	1.0
		Tin, Total	1.1	MG/KG	1.0	1.0
		Titanium, Total	2.7	MG/KG	0.03	1.0
		Thallium, Total	0.68 u	MG/KG	0.68	1.0
		Uranium, Total	0.85 u	MG/KG	0.85	1.0
		Vanadium, Total	0.09 u	MG/KG	0.09	1.0
		Zinc, Total	65.5 J	MG/KG	0.16	1.0
		Zirconium, Total	0.85	MG/KG	0.31	1.0

9/10/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-010	J11921	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	33.8	MG/KG	2.7	1.0
		Arsenic, Total	0.58 u	MG/KG	0.58	1.0
		Boron, Total	0.64	MG/KG	0.23	1.0
		Barium, Total	1.6	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.49 u	MG/KG	0.49	1.0
		Calcium, Total	7640	MG/KG	1.6	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.46	MG/KG	0.12	1.0
		Copper, Total	4.0 J	MG/KG	0.11	1.0
		Iron, Total	188	MG/KG	3.3	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	3540	MG/KG	2.2	1.0
		Lithium, Total	0.06 UJ	MG/KG	0.03	1.0
		Magnesium, Total	481	MG/KG	0.92	1.0
		Manganese, Total	3.1	MG/KG	0.03	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1680	MG/KG	0.72	1.0
		Nickel, Total	0.23 u	MG/KG	0.23	1.0
		Phosphorus, Total	6120	MG/KG	0.86	1.0
		Lead, Total	0.44	MG/KG	0.30	1.0
		Antimony, Total	0.42 u	MG/KG	0.42	1.0
		Selenium, Total	0.98	MG/KG	0.45	1.0
		Silicon, Total	35.4 J	MG/KG	2.2	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	0.44	MG/KG	0.03	1.0
		Thallium, Total	0.67 u	MG/KG	0.67	1.0
		Uranium, Total	0.84 u	MG/KG	0.84	1.0
		Vanadium, Total	0.09 u	MG/KG	0.09	1.0
		Zinc, Total	63.5 J	MG/KG	0.15	1.0
		Zirconium, Total	0.81	MG/KG	0.30	1.0

9/10/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-011	J11922	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	39.9	MG/KG	2.7	1.0
		Arsenic, Total	0.58 u	MG/KG	0.58	1.0
		Boron, Total	0.81	MG/KG	0.23	1.0
		Barium, Total	3.0	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.48 u	MG/KG	0.48	1.0
		Calcium, Total	14300	MG/KG	1.5	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.12 u	MG/KG	0.12	1.0
		Chromium, Total	0.57	MG/KG	0.12	1.0
		Copper, Total	3.1 J	MG/KG	0.11	1.0
		Iron, Total	109	MG/KG	3.3	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	3380	MG/KG	2.1	1.0
		Lithium, Total	0.07 UJ	MG/KG	0.02	1.0
		Magnesium, Total	665	MG/KG	0.91	1.0
		Manganese, Total	4.9	MG/KG	0.02	1.0
		Molybdenum, Total	0.28	MG/KG	0.27	1.0
		Sodium, Total	3400	MG/KG	0.72	1.0
		Nickel, Total	0.31	MG/KG	0.23	1.0
		Phosphorus, Total	8970	MG/KG	0.85	1.0
		Lead, Total	0.42	MG/KG	0.29	1.0
		Antimony, Total	0.41 u	MG/KG	0.41	1.0
		Selenium, Total	0.68	MG/KG	0.44	1.0
		Silicon, Total	43.1 J	MG/KG	2.1	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	1.0	MG/KG	0.03	1.0
		Thallium, Total	0.66 u	MG/KG	0.66	1.0
		Uranium, Total	0.98	MG/KG	0.83	1.0
		Vanadium, Total	0.08 u	MG/KG	0.08	1.0
		Zinc, Total	61.8 J	MG/KG	0.15	1.0
		Zirconium, Total	0.85	MG/KG	0.20	1.0

9/10/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/26/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-012	J11923	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	43.2	MG/KG	2.7	1.0
		Arsenic, Total	0.58 u	MG/KG	0.58	1.0
		Boron, Total	0.71	MG/KG	0.23	1.0
		Barium, Total	3.9	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.49 u	MG/KG	0.49	1.0
		Calcium, Total	18100	MG/KG	1.6	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.76	MG/KG	0.12	1.0
		Copper, Total	3.8 J	MG/KG	0.11	1.0
		Iron, Total	112	MG/KG	3.3	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	3450	MG/KG	2.2	1.0
		Lithium, Total	0.08 UJ	MG/KG	0.03	1.0
		Magnesium, Total	788	MG/KG	0.92	1.0
		Manganese, Total	4.6	MG/KG	0.03	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1790	MG/KG	0.72	1.0
		Nickel, Total	0.47	MG/KG	0.23	1.0
		Phosphorus, Total	11900	MG/KG	10.3	12.0
		Lead, Total	0.57	MG/KG	0.30	1.0
		Antimony, Total	0.42 u	MG/KG	0.42	1.0
		Selenium, Total	1.0	MG/KG	0.45	1.0
		Silicon, Total	41.3 J	MG/KG	2.2	1.0
		Tin, Total	1.1	MG/KG	1.0	1.0
		Titanium, Total	0.95	MG/KG	0.03	1.0
		Thallium, Total	0.67 u	MG/KG	0.67	1.0
		Uranium, Total	0.84 u	MG/KG	0.84	1.0
		Vanadium, Total	0.09 u	MG/KG	0.09	1.0
		Zinc, Total	71.9 J	MG/KG	0.15	1.0
		Zirconium, Total	1.0	MG/KG	0.20	1.0

9/10/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-013	J11924	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	32.1	MG/KG	2.8	1.0
		Arsenic, Total	0.59 u	MG/KG	0.59	1.0
		Boron, Total	0.71	MG/KG	0.23	1.0
		Barium, Total	3.4	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.50 u	MG/KG	0.50	1.0
		Calcium, Total	10100	MG/KG	1.6	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.14 u	MG/KG	0.14	1.0
		Chromium, Total	0.42	MG/KG	0.13	1.0
		Copper, Total	2.9 J	MG/KG	0.12	1.0
		Iron, Total	167	MG/KG	3.4	1.0
		Mercury, Total	0.03	MG/KG	0.01	1.0
		Potassium, Total	2870	MG/KG	2.2	1.0
		Lithium, Total	0.08 UJ	MG/KG	0.03	1.0
		Magnesium, Total	474	MG/KG	0.94	1.0
		Manganese, Total	3.7	MG/KG	0.03	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1440	MG/KG	0.74	1.0
		Nickel, Total	0.24	MG/KG	0.23	1.0
		Phosphorus, Total	6940	MG/KG	0.87	1.0
		Lead, Total	0.36	MG/KG	0.30	1.0
		Antimony, Total	0.43 u	MG/KG	0.43	1.0
		Selenium, Total	0.79	MG/KG	0.46	1.0
		Silicon, Total	45.1 J	MG/KG	2.2	1.0
		Tin, Total	1.2	MG/KG	1.0	1.0
		Titanium, Total	1.5	MG/KG	0.03	1.0
		Thallium, Total	0.68 u	MG/KG	0.68	1.0
		Uranium, Total	0.85 u	MG/KG	0.85	1.0
		Vanadium, Total	0.09 u	MG/KG	0.09	1.0
		Zinc, Total	58.2 J	MG/KG	0.16	1.0
		Zirconium, Total	1.1	MG/KG	0.31	1.0

9/10/06

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/26/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

WORK ORDER: 11342-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-014	J11925	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	39.8	MG/KG	2.7	1.0
		Arsenic, Total	0.58 u	MG/KG	0.58	1.0
		Boron, Total	0.53	MG/KG	0.23	1.0
		Barium, Total	3.7	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Bismuth, Total	0.49 u	MG/KG	0.49	1.0
		Calcium, Total	11800	MG/KG	1.6	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.13 u	MG/KG	0.13	1.0
		Chromium, Total	0.69	MG/KG	0.12	1.0
		Copper, Total	3.0 J	MG/KG	0.11	1.0
		Iron, Total	82.4	MG/KG	3.3	1.0
		Mercury, Total	0.03	MG/KG	0.01	1.0
		Potassium, Total	2930	MG/KG	2.2	1.0
		Lithium, Total	0.07 UJ	MG/KG	0.03	1.0
		Magnesium, Total	468	MG/KG	0.92	1.0
		Manganese, Total	4.1	MG/KG	0.03	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	1470	MG/KG	0.72	1.0
		Nickel, Total	0.36	MG/KG	0.23	1.0
		Phosphorus, Total	7740	MG/KG	0.86	1.0
		Lead, Total	0.40	MG/KG	0.30	1.0
		Antimony, Total	0.42 u	MG/KG	0.42	1.0
		Selenium, Total	0.50	MG/KG	0.45	1.0
		Silicon, Total	43.9 J	MG/KG	2.2	1.0
		Tin, Total	1.0 u	MG/KG	1.0	1.0
		Titanium, Total	1.9	MG/KG	0.03	1.0
		Thallium, Total	0.67 u	MG/KG	0.67	1.0
		Uranium, Total	1.2	MG/KG	0.84	1.0
		Vanadium, Total	0.09 u	MG/KG	0.09	1.0
		Zinc, Total	72.9 J	MG/KG	0.15	1.0
		Zirconium, Total	0.70	MG/KG	0.30	1.0

9/10/06

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-047
LVL#: 0604L725
SDG/SAF#: K0270/RC-047

W.O.#: 11343-606-001-9999-00
Date Received: 04-08-06

METALS CASE NARRATIVE

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

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 14 solid samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples are reported on a wet weight, 'as received' basis.

   Sample J11923 was rerun with a 12-fold dilution for Phosphorous due to high concentration.

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

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).

6. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

7. All ICP Interference Check Standards were within control limits.

8. All laboratory control samples (LCS) were within the 80-120% control limits with the exception of Silicon at 48.6%. Refer to the Inorganics Laboratory Control Standards Report. Associated sample results may be biased low.

9. The matrix spike (MS) recoveries for 7 analytes were outside the 75-125% control limits.

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 57 pages.

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

Refer to the Inorganics Accuracy Report.

10. 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 level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J11910	Calcium	10,000	94.8
	Copper	100	109.8
	Phosphorous	5,000	103.2
	Silicon	1,100	105.1
	Tin	100	104.8
	Zinc	100	102.7
	Zirconium	100	101.7

11. The duplicate analyses for 8 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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

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

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

Judy Stone

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/17/06
Date

jjw/m04-725

LvLI LIONVILLE LABORATORY INC.

Washington Closure Hanford

CHAIN OF CUSTODY RECORD

Collector TILLER, B. / TRK / JRB	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-K RIPARIAN #4 OFFAL K0270 (7407)		SAF No. RC-047
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060322		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9N

Air Quality ☐

Data Turnaround 45 Days

000000043

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF MICE"

000030

SAMPLE ANALYSIS SDG# K0270

Preservation	COOL 4C ~~None~~ Approved	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	250mL	2g	5g	15g	50g	50g	50g			
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)			
J11910	OTHER SOLID	03-22-06	0835	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	3-24-06 1200	EAS LOCKED STORAGE	3-24-06 1200
EAS LOCKED STORAGE	03-27-06 0900	T.R. Shandon	3-27-06 0900
T.R. Shandon	3-27-06 1500	FED EX	
FED EX		MM	3/28/06 10:15
Rick Kelly	4/7/06 16:00	FED EX	
FED EX	4-8-06 10:15	D. Mann	4-8-06 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then ship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

mcm 3/29/06

SDG# K0270

Matrix *

S=Soil
Sl=Sediment
SO=Solid
Sh=Shale
W = Water
Oil=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
Ti=Tissue
Wi=Wipe
L=Liquid
Ve=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

Collector: TILLER, B.	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 RIPARIAN #5 OFFAL K0270 (7407)	SAF No.: RC-047	
Ice Chest No. ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322	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 MICE"

SAMPLE ANALYSIS
SDG# K0270

Preservation	COOL 4C ~~None~~ All ≤270C	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG					
No. of Containers	1	1	1	0	0	0	0					
Volume	250mL	2g	5g	15g	50g	50g	50g					
	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									
J11911	OTHER SOLID	03-22-06	0745	X	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1200 3-27-06	EAS LOCKED STORAGE	1700 3-27-06
EAS LOCKED STORAGE	0900 03-27-06	JR Edmundson	3-27-06 0900
JR Edmundson	WCH 3-27-06 1500	FED EX	
FED EX		[illegible]	3/28/06 10:15
[illegible]	4/7/06 16:00	FED EX	
FED EX	4-8-06 10:15	[illegible]	4-8-06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma – Sb125, Ru106, Be7, Co134

MLM
3/29/06

SDG# K0270

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

000000044

0000031

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: TILLER, B. / JCB / TRK	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: UPRIVER REF. RIPARIAN #12 OFFAL K0270(7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322	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 MICE"

000032

SAMPLE ANALYSIS

SOG# K0270

Preservation	Cool 4C *None* 1µl 2ZnOl	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	250mL	2g	5g	15g	50g	50g	50g			
	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									
J11912	OTHER SOLID	MAR 23 2006	0745	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: JAMES BERNHARD	EAS LOCKED STORAGE	1200 3-24-06
Relinquished By/Removed From: EAS LOCKED STORAGE	J.R. Edmundson	0900 03-27-06
Relinquished By/Removed From: J.R. Edmundson	Received By/Stored In: FED EX	1500 3-27-06
Relinquished By/Removed From: FED EX	Received By/Stored In:	3/28/06 10:15
Relinquished By/Removed From:	Received By/Stored In: FED EX	4/7/06 16:00
Relinquished By/Removed From: FED EX	Received By/Stored In:	4-8-06 / 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs. if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST.SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Bi7, Co134

MUM 3/29/6

SOG # K0270

Matrix *
SoSoil
SESediment
SOSolid
SlSludge
WaWater
OiOil
AiAir
DSDrum Solids
DLDrum Liquids
TsTissue
WiWipe
LiLiquid
VeVegetation
XoOther

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

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

000000045

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-214

Collector: TILLER, B. / JCB / TKK	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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: UPRIVER REF. RIPARIAN #13 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060322	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 MICE"

Preservation	COOL 4C	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG
No. of Container(s)	1	1	1	0	0	0	0
Volume	250mL	2g	5g	15g	50g	50g	50g

SAMPLE ANALYSIS

SDG# K0270

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)
J11913	OTHER SOLID	MAR 23 2006	0815	X	X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	3-24-06 1200	EAS LOCKED STORAGE	3-24-06 1200
EAS LOCKED STORAGE	3-27-06 0900	L. Blanchard	3-27-06 0900
L. Blanchard	3-27-06 1500	FED EX	
FED EX		MJM	3/28/06 9:15
Alex Rebenich	4/7/06 16:00	FED EX	
FED EX	4-8-06 10:15	D Smith	4-8-06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals. PCB, PEST,SVOC is this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134
MJM
3/29/6

SDG# K0270

Matrix *
SnSoil
SlSediment
SOSolid
SlsSludge
WaWater
OnOil
AnAir
DSnDrum Solids
DLnDrum Liquids
TnTissue
WnWipe
LnLeaper
VnVegetation
XnOther

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

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

0000033

0000000046

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: TILLER, B. /TRK/JEB	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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: UPRIVER REF. RIPARIAN #16 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322	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 MICE"

000034

SAMPLE ANALYSIS
SDG# K0270

Preservation	COOL 4 C	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG						
No. of Container(s)	1	1	1	0	0	0	0						
Volume	250mL	2g	5g	15g	50g	50g	50g						
	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										
J11914	OTHER SOLID	03-23-06	0934	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 3-24-06 1200	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 3-24-06 1200
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 03-27-06 0900	Received By/Stored In: JR Edmundson	Date/Time: 3-27-06 0900
Relinquished By/Removed From: JR Edmundson	Date/Time: 3-27-06 1500	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In:	Date/Time: 3/28/06 10:15
Relinquished By/Removed From:	Date/Time: 4/7/06 16:00	Received By/Stored In: FEDEX	Date/Time:
Relinquished By/Removed From: FEDEX	Date/Time: 4-8-06 10:15	Received By/Stored In: D. Smith	Date/Time: 4-8-06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134
mcm
3/29/6

SDG# K0270

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
W1=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)

000000047

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: TILLER, B. / JEB / TRK	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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-H RIPARIAN #1 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322	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 MICE"

000035

SAMPLE ANALYSIS
SDG# K0270

Preservation	COOL 4C ~~None~~ ~~None~~ 8/8-2-7/06		Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	0	0	0	0					
Volume	250mL	5g	15g	50g	50g	50g					
	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									
J11916	OTHER SOLID	03-21-06	1400	X	X							

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: JAMES BERNHARD		1700 3-24-06
Received By/Stored In: EAS LOCKED STORAGE		1700 3-24-06
Relinquished By/Removed From: EAS LOCKED STORAGE		0900 03-27-06
Received By/Stored In:		0900 3-27-06
Relinquished By/Removed From:		1500 3-27-06
Received By/Stored In: FED EX		
Relinquished By/Removed From: FED EX		
Received By/Stored In:		3/28/06 10:15
Relinquished By/Removed From:		4/7/06 16:00
Received By/Stored In: FEDEX		
Relinquished By/Removed From: FED EX		4-8-06 10:15
Received By/Stored In:		4-8-06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co154
mm
3/29/06

SDG# K0270

Matrix *
B=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)

000000048

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-047-217

Collector: TILLER, B. /TRK/JEB	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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-D RIPARIAN #2 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-05 S	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060322	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 MICE"

000036

SAMPLE ANALYSIS
SDG# K0270

Preservation	COOL 4C	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	G/P	G/P	aG	aG	aG							
No. of Container(s)	1	1	0	0	0	0							
Volume	250mL	5g	15g	50g	50g	50g							
	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										
J11917	OTHER SOLID	03-21-06	1440	X	X								

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From	JAMES BERNHARD	1700 3-24-06	Received By/Stored In: EAS LOCKED STORAGE	1700 3-24-06
Relinquished By/Removed From: EAS LOCKED STORAGE		0700 03-27-06	Received By/Stored In: T.R. Edmundson	3-27-06 OFAL
Relinquished By/Removed From: T.R. Edmundson	WCH	3-27-06/1500	Received By/Stored In: FED EX	
Relinquished By/Removed From: FED EX			Received By/Stored In: MM	3/28/06 10:15
Relinquished By/Removed From: Alex Kelly		4/7/06 16:00	Received By/Stored In: FEDEX	
Relinquished By/Removed From: Fed Ex		4-8-06 10:15	Received By/Stored In: D. Smith	4-8-06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

Gamma - Sb125, Ru106, Ba7, Co134
MM
3/29/6

SDG# K0270

Matrix *
SoSoil
SEaSediment
SOaSolid
SlaSludge
WaWater
OaOil
AaAir
DSaDrum Solids
DLaDrum Liquids
TaTissue
WIaWipe
LaLeaped
VaVegetation
XaOther

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

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

000000049

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

Collector: TILLER, B. /TRK/JCR	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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-D RIPARIAN #3 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: (EBERLINE SERVICES) LIONVILLE	Offsite Property No.: A060322		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 MICE"

000037

SAMPLE ANALYSIS
SDG# K0270

Preservation	COOL 4C	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	G/P	G/P	aG	aG	aG							
No. of Container(s)	1	1	0	0	0	0							
Volume	250mL	5g	15g	50g	50g	50g							
	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										
J11918	OTHER SOLID	03-22-06	0745	X	X								

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: JAMES BERNHARD	Received By/Stored In: EAS LOCKED STORAGE	3-21-06 1200
Relinquished By/Removed From: EAS LOCKED STORAGE	Received By/Stored In:	03-27-06 0900
Relinquished By/Removed From:	Received By/Stored In: FED EX	3-27-06/1500
Relinquished By/Removed From: FED EX	Received By/Stored In:	3/28/06 10:15
Relinquished By/Removed From:	Received By/Stored In: FEDEX	4/7/06 16:00
Relinquished By/Removed From: FED EX	Received By/Stored In:	4-8-06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then warship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134
MM
3/29/06

SDG# K0270

Matrix *
Se=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
Ta=Tissue
Wi=Wipe
Li=Liquid
Ve=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)

000000050

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		
Collector TILLER, B. /TDK/JG	Company Contact JOAN KESSNER	Telephone No. 375-4688 K0270	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-F RIPARIAN #7 OFFAL (7407)		SAF No. RC-047
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060322		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9N

Air Quality ☐

Data Turnaround 45 Days

000000051

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF MICE"

000038

SAMPLE ANALYSIS

SDG# K0270

Preservation	COOL 4C	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	aG	G/P	G/P	aG	aG	aG						
No. of Container(s)	1	1	0	0	0	0						
Volume	250mL	5g	15g	50g	50g	50g						
	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									
J11920	OTHER SOLID	MAR 22 2006	1100	X	X							

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1700 3-24-06	EAS LOCKED STORAGE	1200 3-24-06
EAS LOCKED STORAGE	03-27-06 0900	EAS LOCKED STORAGE	0700
	3-27-06 / 1500	FED EX	
FED EX			3/28/06 10:15
	4/7/06 16:00	FEDEX	
	4-8-06 / 10:15		4-8-06 / 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST.SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma- Sb125, Ru106, Be7, Co134

mm 3/29/6

SDG# K0270

Matrix *

SeSeal
SEnSediment
SOnSoil
SlnSludge
W = Water
OnOil
A=Air
DSnDrum Solids
DLnDrum Liquids
TnTissue
WIn Wipe
LnLiquid
VnVegetation
XnOther

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

Collector: TILLER, B. /TRK/ [illegible]	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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-H RIPARIAN #8 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322	Bill of Lading/Air Bill No.: SEE OSPC	

000000052

POSSIBLE SAMPLE HAZARDS/REMARKS
POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF MICE"

000039

SAMPLE ANALYSIS
SDG# K0270

Preservation	COOL 4C ~~None~~ HH 03206	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	G/P	G/P	aG	aG	aG							
No. of Container(s)	1	1	0	0	0	0							
Volume	250mL	5g	15g	50g	50g	50g							
	Gamma Spec - (Full Lim)	Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full Lim); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)							
Sample No.	Matrix *	Sample Date	Sample Time										
J11921	OTHER SOLID	MAR 22 2006	1155	X	X								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 3-24-06 1200	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 3-24-06 1200
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 03-27-06 0900	Received By/Stored In: [illegible]	Date/Time: 3-27-06 0900
Relinquished By/Removed From: [illegible]	Date/Time: 3-27-06 1500	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In: [illegible]	Date/Time: 03/28/06 10:15
Relinquished By/Removed From: [illegible]	Date/Time: 4/7/06 16:00	Received By/Stored In: FEDEX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time: 4-8-06 1015	Received By/Stored In: [illegible]	Date/Time: 4-8-06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Ba7, Co134
mm
3/29/6

SDG# K0270

Matrix *
S=Soil
SE=Sediment
SO=Solid
Bio=Biota
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

Collector: TILLER, B. / TRK / JEB	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days		
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-H RIPARIAN #9 OFFAL (7407)	SAF No.: RC-047	Air Quality ☐
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322		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 MICE"

000040

SAMPLE ANALYSIS
SDG# K0270

Preservation	COOL 4C	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	G/P	G/P	aG	aG	aG							
No. of Container(s)	1	1	0	0	0	0							
Volume	250mL	5g	15g	50g	50g	50g							
	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										
J11922	OTHER SOLID	03-22-06	1345	X	X								

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: JAMES BERNHARD PCA, Date/Time: 3-24-06 1200	Received By/Stored In: EAS LOCKED STORAGE PCA, Date/Time: 3-24-06 1200
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time: 03-27-06 0900	Received By/Stored In: J.R. Edmundson, Date/Time: 3-27-06 0900
Relinquished By/Removed From: J.R. Edmundson WCH, Date/Time: 3-27-06 1500	Received By/Stored In: FED EX, Date/Time:
Relinquished By/Removed From: FED EX, Date/Time:	Received By/Stored In: [illegible] 3/28/06 10:15
Relinquished By/Removed From: Flex Relief, Date/Time: 4/7/06 16:00	Received By/Stored In: FEDEX, Date/Time:
Relinquished By/Removed From: FED EX, Date/Time: 4.8.06 10:15	Received By/Stored In: D. J. Smith, Date/Time: 4.8.06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma-Sb125, Ru106, Be7, Co134
mum
3/29/06

SDG# K0270

Matrix *
S=Soil
SE=Sediment
SL=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

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

000000053

Washington Closure Hanford | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

Collector: TILLER, B. / JEB / TRK	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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-D RIPARIAN #10 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322	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 MICE"

000041

Preservation	Cool 4C ~~None~~	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	0	0	0	0					
Volume	250mL	5g	15g	50g	50g	50g					
SAMPLE ANALYSIS SDG# K0270	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								
J11923	OTHER SOLID	MAR 22 2006	1427	X	X						

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: JAMES BERNHARD, Date/Time: 3-24-06 1200	Received By/Stored In: EAS LOCKED STORAGE, Date/Time: 3-24-06 1200
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time: 03-27-06 0900	Received By/Stored In: T.R. Edmundson, Date/Time: 3-27-06 0900
Relinquished By/Removed From: T.R. Edmundson, Date/Time: 3-27-06 / 1500	Received By/Stored In: FED EX, Date/Time:
Relinquished By/Removed From: FED EX, Date/Time:	Received By/Stored In: [illegible] 3/28/06, Date/Time: 10:15
Relinquished By/Removed From: [illegible], Date/Time: 4/7/06 11:00	Received By/Stored In: FEDEX, Date/Time:
Relinquished By/Removed From: FED EX, Date/Time: 4.8.06 1015	Received By/Stored In: D. Smith, Date/Time: 4.8.06 / 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

MLM
3/29/06

SDG# K0270

Matrix *
SoSoil
SdSediment
SOnSolid
SlnSludge
W = Water
OnOil
AnAir
DSnDrum Solids
DLnDrum Liquids
TnTissue
WInWipe
LnLiquid
VnVegetation
XnOther

LABORATORY SECTION	Received By: [illegible] 10:15	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 REMOVAL REQUEST

Collector: TILLER, B. / JEB / FRK	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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: UPRIVER REF. RIPARIAN #11 OFFAL (T407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EHERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322		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 MICE"

000042

SAMPLE ANALYSIS

SDG# K0270

Preservation	COOL 4C ~~None~~ 4/4 2006	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C
Type of Container	aG	G/P	G/P	aG	aG	aG
No. of Container(s)	1	1	0	0	0	0
Volume	250mL	5g	15g	50g	50g	50g
	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									
J11924	OTHER SOLID	MAR 22 2006	1457	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	3-21-06 1200	EAS LOCKED STORAGE	3-21-06 1200
EAS LOCKED STORAGE	3-27-06 0900	T.R. Edmundson / TR Edmundson	3-27-06 0900
T.R. Edmundson / TR Edmundson	3-27-06 1500	FED EX	
FED EX		MM	3/28/06 10:15
Alex Kelly	4/7/06 16:00	FEDEX	
FedEx	4-8-06 10:15	MM	4-8-06 10:15

SPECIAL INSTRUCTIONS

NOTE: Eherline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Ba7, Co134

mm 3/29/6

SDG# K0270

Matrix *

Se=Soil	
SE=Sediment	
SO=Solid	
Sl=Sludge	
W = Water	
O=Oil	
A=Air	
DS=Drum Solids	
DL=Drum Liquids	
T=Tissue	
Wi=Wipe	
Li=Liquid	
Ve=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)

000000055

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: TILLER, B. / TRK / JEB	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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: UPRIVER REF. RIPARIAN #14 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322	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 MICE"

000043

SAMPLE ANALYSIS
SDG# K0270

Preservation	COOL 4C ~~None~~ JB 22306	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	aG	G/P	G/P	aG	aG	aG						
No. of Container(s)	1	1	0	0	0	0						
Volume	250mL	5g	15g	50g	50g	50g						
	Gamma Spec - (Full List)	Sunniam 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									
J11925	OTHER SOLID	03-23-06	0904	X	X	X JB 22306						

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 3-27-06	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 3-27-06
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 03-27-06	Received By/Stored In: J.R. Edmundson	Date/Time: 3-27-06 0900
Relinquished By/Removed From: J.R. Edmundson	Date/Time: 3-27-06 1500	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In:	Date/Time: 3/28/06 10:15
Relinquished By/Removed From: Alex Kelleu	Date/Time: 4/7/06 16:00	Received By/Stored In: FEDEX	Date/Time:
Relinquished By/Removed From: FEDEX	Date/Time: 4-8-06 1015	Received By/Stored In:	Date/Time: 4-8-06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134
mm 3/29/06

SDG# K0270

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
Li=Liquid
Ve=Vegetation
X=Other

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

BHI-EE-011 (09/29/2005)

000000056

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT:	RCBRA		DATA PACKAGE:	K0270	
VALIDATOR:	TCF	LAB: LCI		DATE: 9/9/02	
			SDG:	K0270	
ANALYSES PERFORMED					
SW-846/ICP	SW-846/GFAA	SW-846/Hg	SW-846 Cyanide		
SAMPLES/MATRIX					
J11910	J11911	J11912	J11913	J11914	J11916
J11917	J11918	J11920	J11921	~~J11922~~	J11922
J11923	J11924	J11925			
					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 performed on all instruments? ..... Yes No N/A

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

ICP interference checks acceptable? ..... Yes No N/A

ICV and CCV checks performed on all instruments? ..... Yes No N/A

ICV and CCV checks 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: _____

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

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

ICB and CCB checks performed for all applicable analyses? (Levels D, E) ..... Yes No N/A
ICB and CCB 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 blanks analyzed? (Levels C, D, E) ..... Yes No N/A
Field blank results acceptable? (Levels C, D, E) ..... Yes No N/A
Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: Lithium - UJ all no FB

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

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 - Silicon 131% - J all no PAS
MS - Zinc - 6.4% - J all

LCS - Silicon 48% - J all

INORGANIC ANALYSIS 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: Copper - 75% > J cell
Zinc - 74%

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? ..... Yes No N/A
ICP serial dilution %D values acceptable? ..... Yes No N/A
ICP post digestion spike required? ..... Yes No N/A
ICP post digestion spike values 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:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? ..... Yes No N/A
Duplicate injection %RSD values acceptable? ..... Yes No N/A
Analytical spikes performed as required? ..... Yes No N/A
Analytical spike recoveries acceptable? ..... Yes No N/A
Standards traceable? ..... Yes No N/A
Standards expired? ..... Yes No N/A
MSA performed as required? ..... Yes No N/A
MSA results acceptable? ..... Yes No N/A
Transcription/calculation errors? ..... Yes No N/A
Comments:

8. HOLDING TIMES (all levels)

Samples properly preserved? ..... Yes No N/A
Sample holding times acceptable? ..... Yes No N/A
Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

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:

Appendix 6

Additional Documentation Requested by Client

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	06L0266-MB1	Silver, Total	0.07	u	MG/KG	0.07	1.0
		Aluminum, Total	2.9	u	MG/KG	2.9	1.0
		Arsenic, Total	0.61	u	MG/KG	0.61	1.0
		Boron, Total	0.24	u	MG/KG	0.24	1.0
		Barium, Total	0.05		MG/KG	0.02	1.0
		Beryllium, Total	0.02	u	MG/KG	0.02	1.0
		Bismuth, Total	0.51	u	MG/KG	0.51	1.0
		Calcium, Total	1.7		MG/KG	1.6	1.0
		Cadmium, Total	0.07	u	MG/KG	0.07	1.0
		Cobalt, Total	0.14	u	MG/KG	0.14	1.0
		Chromium, Total	0.13	u	MG/KG	0.13	1.0
		Copper, Total	0.12	u	MG/KG	0.12	1.0
		Iron, Total	3.5	u	MG/KG	3.5	1.0
		Potassium, Total	2.3	u	MG/KG	2.3	1.0
		Lithium, Total	0.08		MG/KG	0.03	1.0
		Magnesium, Total	0.97	u	MG/KG	0.97	1.0
		Manganese, Total	0.03	u	MG/KG	0.03	1.0
		Molybdenum, Total	0.29	u	MG/KG	0.29	1.0
		Sodium, Total	0.76	u	MG/KG	0.76	1.0
		Nickel, Total	0.24	u	MG/KG	0.24	1.0
		Phosphorus, Total	0.90	u	MG/KG	0.90	1.0
		Lead, Total	0.31	u	MG/KG	0.31	1.0
		Antimony, Total	0.44	u	MG/KG	0.44	1.0
		Selenium, Total	0.47	u	MG/KG	0.47	1.0
		Silicon, Total	2.3	u	MG/KG	2.3	1.0
		Tin, Total	1.1	u	MG/KG	1.1	1.0
		Titanium, Total	0.04		MG/KG	0.03	1.0
		Thallium, Total	0.70	u	MG/KG	0.70	1.0
		Uranium, Total	0.88	u	MG/KG	0.88	1.0
		Vanadium, Total	0.09	u	MG/KG	0.09	1.0
		Zinc, Total	0.16	u	MG/KG	0.16	1.0
		Zirconium, Total	0.32	u	MG/KG	0.32	1.0
BLANK1	06C0069-MB1	Mercury, Total	0.02	u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J11910	Silver, Total	4.5	0.07u	4.9	91.8	1.0
		Aluminum, Total	242	35.5	194	106.2	1.0
		Arsenic, Total	177	0.59u	194	90.9	1.0
		Boron, Total	89.5	1.7	97.1	90.4	1.0
		Barium, Total	186	3.4	194	93.9	1.0
		Beryllium, Total	4.6	0.02u	4.9	93.9	1.0
		Bismuth, Total	478	0.50u	486	98.5	1.0
		Calcium, Total	8130	10900	2430	-110. *	1.0
		Cadmium, Total	4.4	0.07u	4.9	89.8	1.0
		Cobalt, Total	44.5	0.14u	48.6	91.6	1.0
		Chromium, Total	18.9	0.80	19.4	93.3	1.0
		Copper, Total	28.3	11.1	24.3	70.8	1.0
		Iron, Total	195	112	97.1	85.0	1.0
		Mercury, Total	0.12	0.01u	0.12	92.0	1.0
		Mercury, Total MSD	0.30	0.01u	0.32	91.3	1.0
		Potassium, Total	5430	3180	2430	92.5	1.0
		Lithium, Total	103	0.08	97.1	105.7	1.0
		Magnesium, Total	2560	603	2430	80.6	1.0
		Manganese, Total	51.6	4.2	48.6	97.9	1.0
		Molybdenum, Total	90.1	0.28u	97.1	92.8	1.0
		Sodium, Total	4110	2080	2430	83.7	1.0
		Nickel, Total	45.8	1.1	48.6	92.0	1.0
		Phosphorus, Total	4900	7520	486	-540. *	1.0
		Lead, Total	44.4	0.38	48.6	90.6	1.0
		Antimony, Total	43.5	0.43u	48.6	89.5	1.0
		Selenium, Total	174	0.78	194	89.5	1.0
		Silicon, Total	168	40.1	97.1	131.6	1.0
		Tin, Total	72.2	1.2	97.1	73.1	1.0
		Titanium, Total	87.1	1.6	97.1	88.1	1.0
		Thallium, Total	178	0.68u	194	91.7	1.0
		Uranium, Total	225	0.98	~~400~~ 243	~~40.1~~ 92.2	1.0
		Vanadium, Total	45.1	0.1	48.6	92.6	1.0
		Zinc, Total	120	117	48.6	6.4	1.0
		Zirconium, Total	88.0	0.63	486	18.0	1.0

corrected entries MJS 5/16/06

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270

LVL LOT #: 0604L725*

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

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
-001	J11910	Mercury, Total	92.0	91.3	0.73

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J11910	Silver, Total	0.07u	0.07u	NC	1.0
		Aluminum, Total	35.5	32.4	9.1	1.0
		Arsenic, Total	0.59u	0.59u	NC	1.0
		Boron, Total	1.7	1.1	42.9	1.0
		Barium, Total	3.4	2.6	26.7	1.0
		Beryllium, Total	0.02u	0.02u	NC	1.0
		Bismuth, Total	0.50u	0.49u	NC	1.0
		Calcium, Total	10900	9160	17.4	1.0
		Cadmium, Total	0.07u	0.07u	NC	1.0
		Cobalt, Total	0.14u	0.13u	NC	1.0
		Chromium, Total	0.80	0.87	8.1	1.0
		Copper, Total	11.1	5.0	75.8	1.0
		Iron, Total	112	114	1.2	1.0
		Mercury, Total	0.01u	0.02u	NC	1.0
		Potassium, Total	3180	3140	1.4	1.0
		Lithium, Total	0.08	0.08	4.7	1.0
		Magnesium, Total	602	497	19.3	1.0
		Manganese, Total	4.2	4.9	15.4	1.0
		Molybdenum, Total	0.28u	0.28u	NC	1.0
		Sodium, Total	2080	1740	17.9	1.0
		Nickel, Total	1.1	1.1	0.00	1.0
		Phosphorus, Total	7520	6300	17.7	1.0
		Lead, Total	0.38	0.54	35.2	1.0
		Antimony, Total	0.42u	0.42u	NC	1.0
		Selenium, Total	0.78	0.81	3.7	1.0
		Silicon, Total	40.1	50.2	22.4	1.0
		Tin, Total	1.2	1.1	8.7	1.0
		Titanium, Total	1.6	1.5	6.5	1.0
		Thallium, Total	0.68u	0.67u	NC	1.0
		Uranium, Total	0.98	0.85u	~~NC~~ 200	1.0
		Vanadium, Total	0.1	0.09u	~~NC~~ 200	1.0
		Zinc, Total	117	74.3	44.6	1.0
		Zirconium, Total	0.63	0.69	9.0	1.0

corrected entries JW 5/16/06

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/16/06

CLIENT: TNUHANFORD RC-047 K0270 LVL LOT #: 0604L725

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	06L0266-LC1	Silver, LCS	50.3	50.0	MG/KG	100.6
		Aluminum, LCS	498	500	MG/KG	99.7
		Arsenic, LCS	965	1000	MG/KG	96.5
		Boron, LCS	491	500	MG/KG	98.3
		Barium, LCS	501	500	MG/KG	100.2
		Beryllium, LCS	25.3	25.0	MG/KG	101.2
		Bismuth, LCS	520	500	MG/KG	104.1
		Calcium, LCS	2500	2500	MG/KG	100.2
		Cadmium, LCS	24.8	25.0	MG/KG	99.2
		Cobalt, LCS	251	250	MG/KG	100.3
		Chromium, LCS	50.8	50.0	MG/KG	101.6
		Copper, LCS	127	125	MG/KG	101.9
		Iron, LCS	505	500	MG/KG	100.9
		Potassium, LCS	2350	2500	MG/KG	93.9
		Lithium, LCS	516	500	MG/KG	103.3
		Magnesium, LCS	2450	2500	MG/KG	97.9
		Manganese, LCS	76.5	75.0	MG/KG	102.0
		Molybdenum, LCS	514	500	MG/KG	102.7
		Sodium, LCS	2380	2500	MG/KG	95.1
		Nickel, LCS	200	200	MG/KG	100.2
		Phosphorus, LCS	442	500	MG/KG	88.4
		Lead, LCS	248	250	MG/KG	99.0
		Antimony, LCS	295	300	MG/KG	98.4
		Selenium, LCS	932	1000	MG/KG	93.2
		Silicon, LCS	243	500	MG/KG	48.6
		Tin, LCS	509	500	MG/KG	101.9
		Titanium, LCS	508	500	MG/KG	101.5
		Thallium, LCS	999	1000	MG/KG	99.9
		Uranium, LCS	245	250 ~~250~~ *	MG/KG	* ~~40.0~~ 97.8
		Vanadium, LCS	251	250	MG/KG	100.3
		Zinc, LCS	98.5	100	MG/KG	98.5
		Zirconium, LCS	492	500	MG/KG	98.4
LCS1	06C0069-LC1	Mercury, LCS	7.0	6.2	MG/KG	113.0

* corrected entries PN 5/16/06

Date: 11 September 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. K0270-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K0270 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	Analysis
J11910	3/22/06	Solid	C	See note 1
J11911	3/22/06	Solid	C	See note 1
J11912	3/23/06	Solid	C	See note 1
J11913	3/23/06	Solid	C	See note 1
J11914	3/23/06	Solid	C	See note 1
J11916	3/21/06	Solid	C	See note 1
J11917	3/21/06	Solid	C	See note 1
J11918	3/22/06	Solid	C	See note 1
J11920	3/22/06	Solid	C	See note 1
J11921	3/22/06	Solid	C	See note 1
J11922	3/22/06	Solid	C	See note 1
J11923	3/22/06	Solid	C	See note 1
J11924	3/22/06	Solid	C	See note 1
J11925	3/23/06	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".

Per WCH instructions, the holding time was counted from receipt of the samples at Lionville Laboratories Inc. (4/8/06) instead of the date of sample collection (3/21/06 through 3/23/06). Using the sample collection date would have resulted in the sample results being either qualified as estimates "J" or rejected "R".

Due to the holding time being exceeded by less than 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, all detected di-n-butylphthalate results were qualified as undetected, raised to the RQL and flagged "U".

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 and/or matrix spike duplicate results outside QC limits, all semivolatile organic results (except 2,4,6-trichlorophenol) were qualified as estimates and flagged "J".

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

All other matrix spike/matrix spike duplicate and LSC 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".

Due to surrogate recoveries outside QC limits, all nitrobenzene-d5 associated results (2-nitrophenol, 2,4-dinitrophenol, nitrobenzene, n-nitroso-di-n-propylamine, 4-chloroaniline, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 2,6-dinitrotoluene, n-nitrosodiphenylamine) in samples J11910, J11911, J11913, J11914, J11917, J11918, J11921, J11922 and J11924 were qualified as estimates and flagged "J".

Due to surrogate recoveries outside QC limits, all nitrobenzene-d5 associated results (2-nitrophenol, 2,4-dinitrophenol, nitrobenzene, n-nitroso-di-n-propylamine, 4-chloroaniline, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 2,6-dinitrotoluene, n-nitrosodiphenylamine) in sample J11916 were rejected and flagged "UR".

Due to surrogate recoveries outside QC limits, all 2-fluorbiphenyl associated results (1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, 1,2,4-trichlorobenzene, 2-chloronaphthalene, hexachlorobenzene, hexachloroethane, trichlorobutadiene, tetrachlorobutadiene, pentachlorobutadiene, hexachlorobutadiene, hexachlorocyclopentadiene, 4-chloroaniline, benzidine, 3,3'dichlorobenzidine) in samples J11910, J11911, J11913, J11914, J11916, J11917, J11918, J11921, J11922, J11923 and J11924 were qualified as estimates and flagged "J".

Due to surrogate recoveries outside QC limits, all terphenyl-d14 associated results (naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthrene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, benzo(g,h,i)perylene) in sample J11916 were qualified as estimates and flagged "J".

Due to surrogate recoveries outside QC limits, all phenol-d5 associated results (phenol, 2-methylphenol, 4-methylphenol, 2,4-dimethylphenol, 2-nitrophenol, 2,4-dinitrophenol, dimethyl phthalate, diethyl phthalate, di-n-butyl phthalate, butylbenzylphthalate, bis(2-ethylhexyl) phthalate, di-n-octylphthalate, isophorone) in samples J11910, J11911, J11912, J11913, J11914, J11916, J11917, J11918, J11921, J11922, and J11924 were qualified as estimates and flagged "J".

Due to surrogate recoveries outside QC limits, all 2-fluorophenol associated results (2-chlorophenol, 2,4-dichlorophenol, 4-chloro-3-methyl phenol) in samples J11910, J11911, J11912, J11913, J11914, J11918, J11921, J11922, J11923, J11924 and J11925 were qualified as estimates and flagged "J".

Due to surrogate recoveries outside QC limits, all 2-fluorophenol associated results (2-chlorophenol, 2,4-dichlorophenol, 4-chloro-3-methyl phenol) in samples J11916 and J11917 were rejected and flagged "UR".

Due to surrogate recoveries outside QC limits, all 2,4,6-tribromophenol associated results (2,4-dichlorophenol, 2,4,6-trichlorophenol, 2,4,5-trichlorophenol, pentachlorophenol, bis(2-chloroethyl)ether, bis(2-chloroisopropyl)ether, bis(2-chloroethoxy)methane, 4-chlorophenyl phenyl ether, 4-bromophenyl phenyl ether) in samples J11916 and J11917 were qualified as estimates and flagged "J".

All other 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 exceeding QC limits, all semivolatile 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 required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. All analytes with RQLs exceeded the RQL. Under the WCH statement of work, no qualification is required.

- **Completeness**

Data package No. K0270 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 99.4%.

MAJOR DEFICIENCIES

The following major deficiencies were noted:

- Due to surrogate recoveries outside QC limits, all nitrobenzene-d5 associated results (2-nitrophenol, 2,4-dinitrophenol, nitrobenzene, n-nitroso-di-n-propylamine, 4-chloroaniline, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 2,6-dinitrotoluene, n-nitrosodiphenylamine) in sample J11916 were rejected and flagged "UR".

- Due to surrogate recoveries outside QC limits, all 2-fluorophenol associated results (2-chlorophenol, 2,4-dichlorophenol, 4-chloro-3-methyl phenol) in samples J11916 and J11917 were rejected and flagged "UR".

Rejected data is unusable and should not be reported.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

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

- Due to method blank contamination, all detected di-n-butylphthalate results were qualified as undetected, raised to the RQL and flagged "U".

- Due to matrix spike and/or matrix spike duplicate results outside QC limits, all semivolatile organic results (except 2,4,6-trichlorophenol) were qualified as estimates and flagged "J".

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

- Due to surrogate recoveries outside QC limits, all nitrobenzene-d5 associated results (2-nitrophenol, 2,4-dinitrophenol, nitrobenzene, n-nitroso-di-n-propylamine, 4-chloroaniline, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 2,6-dinitrotoluene, n-nitrosodiphenylamine) in samples J11910, J11911, J11913, J11914, J11917, J11918, J11921, J11922 and J11924 were qualified as estimates and flagged "J".

- Due to surrogate recoveries outside QC limits, all 2-fluorbiphenyl associated results (1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, 1,2,4-trichlorobenzene, 2-chloronaphthalene, hexachlorobenzene, hexachloroethane, trichlorobutadiene, tetrachlorobutadiene, pentachlorobutadiene, hexachlorobutadiene, hexachlorocyclopentadiene, 4-chloroaniline, benzidine, 3,3'dichlorobenzidine) in samples J11910, J11911, J11913, J11914, J11916, J11917, J11918, J11921, J11922, J11923 and J11924 were qualified as estimates and flagged "J".

- Due to surrogate recoveries outside QC limits, all terphenyl-d14 associated results (naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthrene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, benzo(g,h,i)perylene) in sample J11916 were qualified as estimates and flagged "J".

- Due to surrogate recoveries outside QC limits, all phenol-d5 associated results (phenol, 2-methylphenol, 4-methylphenol, 2,4-dimethylphenol, 2-nitrophenol, 2,4-dinitrophenol, dimethyl phthalate, diethyl phthalate, di-n-butyl phthalate, butylbenzylphthalate, bis(2-ethylhexyl) phthalate, di-n-octylphthalate, isophorone) in samples J11910, J11911, J11912, J11913, J11914, J11916, J11917, J11918, J11921, J11922, and J11924 were qualified as estimates and flagged "J".

- Due to surrogate recoveries outside QC limits, all 2-fluorophenol associated results (2-chlorophenol, 2,4-dichlorophenol, 4-chloro-3-methyl phenol) in samples J11910, J11911, J11912, J11913, J11914, J11918, J11921, J11922, J11923, J11924 and J11925 were qualified as estimates and flagged "J".

- Due to surrogate recoveries outside QC limits, all 2,4,6-tribromophenol associated results (2,4-dichlorophenol, 2,4,6-trichlorophenol, 2,4,5-trichlorophenol, pentachlorophenol, bis(2-chloroethyl)ether, bis(2-chloroisopropyl)ether, bis(2-chloroethoxy)methane, 4-chlorophenyl phenyl ether, 4-bromophenyl phenyl ether) in samples J11916 and J11917 were qualified as estimates and flagged "J".

- Due to RPDs exceeding 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.

All analytes with RQLs exceeded the RQL. Under the WCH 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 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: K0270	REVIEWER: TEI	Project: RCBRA	PAGE 1 OF 1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All	J	All	Holding time
Di-n-butylphthalate	U at RQL	All detects	Method blank contamination
All (except 2,4,6-trichlorophenol)	J	All	MS/MSD recovery
All (except 4-chloroanaline, hexachlorocyclopentadiene, 2,4,6-trichlorophenol, di-n-butylphthalate and 3,3'-dichlorobenzidine)	J	All	LCS recovery
2-nitrophenol, 2,4-dinitrophenol, nitrobenzene, n-nitroso-di-n-propylamine, 4-chloroaniline, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 2,6-dinitrotoluene, n-nitrosodiphenylamine	J	J11910, J11911, J11913, J11914, J11917, J11918, J11921, J11922 J11924	Surrogate recovery
2-nitrophenol, 2,4-dinitrophenol, nitrobenzene, n-nitroso-di-n-propylamine, 4-chloroaniline, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 2,6-dinitrotoluene, n-nitrosodiphenylamine	UR	J11916	Surrogate recovery
1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, 1,2,4-trichlorobenzene, 2-chloronaphthalene, hexachlorobenzene, hexachloroethane, trichlorobutadiene,	J	J11910, J11911, J11913, J11914, J11916, J11917, J11918, J11921, J11922, J11923 J11924	Surrogate recovery

SEMIVOLATILE DATA QUALIFICATION SUMMARY*

SDG: K0270	REVIEWER: TLL	Project: RCBRA	PAGE 1 OF 1
tetrachlorobutadiene, pentachlorobutadiene, hexachlorobutadiene, hexachlorocyclopentadiene, 4-chloroaniline, benzidine, 3,3'dichlorobenzidine			
naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthrene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, benzo(g,h,i)perylene	J	J11916	Surrogate recovery
phenol, 2-methylphenol, 4-methylphenol, 2,4-dimethylphenol, 2-nitrophenol, 2,4-dinitrophenol, dimethyl phthalate, diethyl phthalate, di-n-butyl phthalate, butylbenzylphthalate, bis(2-ethylhexyl) phthalate, di-n-octylphthalate, isophorone	J	J11910, J11911, J11912, J11913, J11914, J11916, J11917, J11918, J11921, J11922, J11924	Surrogate recovery
2-chlorophenol, 2,4-dichlorophenol, 4-chloro-3-methyl phenol	J	J11910, J11911, J11912, J11913, J11914, J11918, J11921, J11922, J11923, J11924 J11925	Surrogate recovery

SEMIVOLATILE DATA QUALIFICATION SUMMARY*

SDG: K0270	REVIEWER: TLF	Project: RCBRA	PAGE 1 OF 1
2-chlorophenol, 2,4-dichlorophenol, 4-chloro-3-methyl phenol	UR	J11916, J11917	Surrogate recovery
2,4-dichlorophenol, 2,4,6-trichlorophenol, 2,4,5-trichlorophenol, pentachlorophenol, bis(2-chloroethyl)ether, bis(2-chloroisopropyl)ether, bis(2-chloroethoxy)methane, 4-chlorophenyl phenyl ether, 4-bromophenyl phenyl ether	J	J11916, J11917	Surrogate recovery
All	J	All	RPDs

* - 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 PAH ANALYSIS, SOIL MATRIX, (UG/KG)

Project: WASHINGTON CLOSURE HANFORD
Laboratory: LLI SDG: K0270

Sample Number		J11910		J11911		J11912		J11913		J11914		J11916		J11917		J11918		J11920		J11921	
Remarks																					
Sample Date		3/22/06		3/22/06		3/23/06		3/23/06		3/23/06		3/21/06		3/21/06		3/22/06		3/22/06		3/22/06	
Extraction Date		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06	
Analysis Date		6/28/06		6/28/06		6/28/06		6/28/06		6/28/06		6/28/06		6/28/06		6/28/06		6/29/06		6/29/06	
Semivolatile (8270C)	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol		400	J	3900	UJ	380	J	390	J	1200	J	270	J	290	J	560	J	540	J	250	J
bis(2-Chloroethyl)ether		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
2-Chlorophenol		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UR	2900	UR	3300	UJ	3400	UJ	3600	UJ
1,3-Dichlorobenzene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
1,4-Dichlorobenzene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
1,2-Dichlorobenzene	330	2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
2-Methylphenol		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
2,2'-oxybis(1-chloropropane)		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
4-Methylphenol		2900	UJ	3900	UJ	220	J	190	J	320	J	3400	UJ	150	J	310	J	340	J	3600	UJ
N-Nitroso-di-n-propylamine		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UR	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Hexachloroethane		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Nitrobenzene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UR	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Isophorone		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
2-Nitrophenol		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UR	2900	UJ	3300	UJ	3400	UJ	3600	UJ
2,4-Dimethylphenol		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
bis(2-Chloroethoxy)methane		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
2,4-Dichlorophenol		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UR	2900	UR	3300	UJ	3400	UJ	3600	UJ
1,2,4-Trichlorobenzene	330	2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Naphthalene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
4-Chloroaniline		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UR	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Hexachlorobutadiene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
4-Chloro-3-methylphenol		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UR	2900	UR	3300	UJ	3400	UJ	3600	UJ
2-Methylnaphthalene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Hexachlorocyclopentadiene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
2,4,6-Trichlorophenol	330	2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
2,4,5-Trichlorophenol	330	7100	UJ	9800	UJ	7800	UJ	7900	UJ	6800	UJ	8500	UJ	7300	UJ	8200	UJ	8600	UJ	8900	UJ
2-Chloronaphthalene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
2-Nitroaniline		7100	UJ	9800	UJ	7800	UJ	7900	UJ	6800	UJ	8500	UR	7300	UJ	8200	UJ	8600	UJ	8900	UJ
Dimethylphthalate		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Acenaphthylene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
2,6-Dinitrotoluene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UR	2900	UJ	3300	UJ	3400	UJ	3600	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 PAH ANALYSIS, SOIL MATRIX, (UG/KG)

Project: WASHINGTON CLOSURE HANFORD
Laboratory: LLI SDG: K0270

Sample Number		J11910		J11911		J11912		J11913		J11914		J11916		J11917		J11918		J11920		J11921	
Remarks																					
Sample Date		3/22/06		3/22/06		3/23/06		3/23/06		3/23/06		3/21/06		3/21/06		3/22/06		3/22/06		3/22/06	
Extraction Date		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06	
Analysis Date		6/28/06		6/28/06		6/28/06		6/28/06		6/28/06		6/28/06		6/28/06		6/28/06		6/29/06		6/29/06	
Semivolatile (8270C)	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
3-Nitroaniline		7100	UJ	9800	UJ	7800	UJ	7900	UJ	6800	UJ	8500	UR	7300	UJ	8200	UJ	8600	UJ	8900	UJ
Acenaphthene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
2,4-Dinitrophenol		7100	UJ	9800	UJ	7800	UJ	7900	UJ	6800	UJ	8500	UR	7300	UJ	8200	UJ	8600	UJ	8900	UJ
4-Nitrophenol		7100	UJ	9800	UJ	7800	UJ	7900	UJ	6800	UJ	8500	UJ	7300	UJ	8200	UJ	8600	UJ	8900	UJ
Dibenzofuran	330	2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
2,4-Dinitrotoluene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Diethylphthalate		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
4-Chlorophenyl-phenyl ether		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Fluorene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
4-Nitroaniline		7100	UJ	9800	UJ	7800	UJ	7900	UJ	6800	UJ	8500	UR	7300	UJ	8200	UJ	8600	UJ	8900	UJ
4,6-Dinitro-2-methylphenol		7100	UJ	9800	UJ	7800	UJ	7900	UJ	6800	UJ	8500	UJ	7300	UJ	8200	UJ	8600	UJ	8900	UJ
N-Nitrosodiphenylamine		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UR	2900	UJ	3300	UJ	3400	UJ	3600	UJ
4-Bromophenyl-phenyl ether		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Hexachlorobenzene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Pentachlorophenol	330	7100	UJ	9800	UJ	7800	UJ	7900	UJ	6800	UJ	8500	UJ	7300	UJ	8200	UJ	8600	UJ	8900	UJ
Phenanthrene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Anthracene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Carbazole		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Di-n-butylphthalate		2900	UJ	3900	UJ	660	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	660	UJ	660	UJ	660	UJ
Fluoranthene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Pyrene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Butylbenzylphthalate		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
3,3'-Dichlorobenzidine		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Benzo(a)anthracene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Chrysene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
bis(2-Ethylhexyl)phthalate		380	J	570	J	1600	J	410	J	470	J	240	J	230	J	360	J	920	J	470	J
Di-n-octylphthalate		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Benzo(b)fluoranthene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Benzo(k)fluoranthene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Benzo(a)pyrene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Indeno(1,2,3-cd)pyrene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Dibenz(a,h)anthracene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
Benzo(g,h,i)perylene		2900	UJ	3900	UJ	3100	UJ	3200	UJ	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	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 PAH ANALYSIS, SOIL MATRIX, (UG/KG)

Project: WASHINGTON CLOSURE HANFORD																					
Laboratory: LLI	SDG: K0270																				
Sample Number		J11922		J11923		J11924		J11925													
Remarks																					
Sample Date		3/22/06		3/22/06		3/22/06		3/23/06													
Extraction Date		4/20/06		4/20/06		4/20/06		4/20/06													
Analysis Date		6/29/06		6/29/06		6/29/06		6/29/06													
Semivolatile (8270C)	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Phenol		380	J	380	J	170	J	230	J												
bis(2-Chloroethyl)ether		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
2-Chlorophenol		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
1,3-Dichlorobenzene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
1,4-Dichlorobenzene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
1,2-Dichlorobenzene	330	3900	UJ	3600	UJ	3500	UJ	2900	UJ												
2-Methylphenol		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
2,2'-oxybis(1-chloropropane)		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
3 and/or 4-Methylphenol.		3900	UJ	3600	UJ	3500	UJ	180	J												
N-Nitroso-di-n-propylamine		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Hexachloroethane		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Nitrobenzene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Isophorone		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
2-Nitrophenol		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
2,4-Dimethylphenol		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
bis(2-Chloroethoxy)methane		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
2,4-Dichlorophenol		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
1,2,4-Trichlorobenzene	330	3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Naphthalene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
4-Chloroaniline		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Hexachlorobutadiene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
4-Chloro-3-methylphenol		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
2-Methylnaphthalene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Hexachlorocyclopentadiene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
2,4,6-Trichlorophenol	330	3900	UJ	3600	UJ	3500	UJ	2900	UJ												
2,4,5-Trichlorophenol	330	9800	UJ	9000	UJ	8700	UJ	7300	UJ												
2-Chloronaphthalene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
2-Nitroaniline		9800	UJ	9000	UJ	8700	UJ	7300	UJ												
Dimethylphthalate		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Acenaphthylene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
2,6-Dinitrotoluene		3900	UJ	3600	UJ	3500	UJ	2900	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

000018

SEMIVOLATILE PAH ANALYSIS, SOIL MATRIX, (UG/KG)

Project: WASHINGTON CLOSURE HANFORD
Laboratory: LLI SDG: K0270

Sample Number		J11921		J11921		J11921		J11921													
Remarks																					
Sample Date		3/22/06		3/22/06		3/22/06		3/23/06													
Extraction Date		4/20/06		4/20/06		4/20/06		4/20/06													
Analysis Date		6/29/06		6/29/06		6/29/06		6/29/06													
Semivolatile (8270C)	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
3-Nitroaniline		9800	UJ	9000	UJ	8700	UJ	7300	UJ												
Acenaphthene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
2,4-Dinitrophenol		9800	UJ	9000	UJ	8700	UJ	7300	UJ												
4-Nitrophenol		9800	UJ	9000	UJ	8700	UJ	7300	UJ												
Dibenzofuran	330	3900	UJ	3600	UJ	3500	UJ	2900	UJ												
2,4-Dinitrotoluene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Diethylphthalate		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
4-Chlorophenyl-phenyl ether		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Fluorene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
4-Nitroaniline		9800	UJ	9000	UJ	8700	UJ	7300	UJ												
4,6-Dinitro-2-methylphenol		9800	UJ	9000	UJ	8700	UJ	7300	UJ												
N-Nitrosodiphenylamine		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
4-Bromophenyl-phenyl ether		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Hexachlorobenzene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Pentachlorophenol	330	9800	UJ	9000	UJ	8700	UJ	7300	UJ												
Phenanthrene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Anthracene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Carbazole		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Di-n-butylphthalate		3900	UJ	660	UJ	660	UJ	660	UJ												
Fluoranthene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Pyrene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Butylbenzylphthalate		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
3,3'-Dichlorobenzidine		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Benzo(a)anthracene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Chrysene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
bis(2-Ethylhexyl)phthalate		650	J	1700	J	970	J	770	J												
Di-n-octylphthalate		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Benzo(b)fluoranthene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Benzo(k)fluoranthene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Benzo(a)pyrene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Indeno(1,2,3-cd)pyrene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Dibenz(a,h)anthracene		3900	UJ	3600	UJ	3500	UJ	2900	UJ												
Benzo(g,h,i)perylene		3900	UJ	3600	UJ	3500	UJ	2900	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

Semivolatiles by GC/MS, HSL List

RFW Batch Number: 0604L725 Client: TNUHANFORD RC-047 K0270 Work Order: 11343606001 Report Date: 07/05/06 11:09 Page: 1a

	Cust ID:	J11910	J11910	J11910	J11911	J11912	J11913
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	17 * %	30 %	9 * %	18 * %	25 %	16 * %
	2-Fluorobiphenyl	20 * %	37 %	11 * %	21 * %	30 %	22 * %
	Terphenyl-d14	26 %	43 %	14 * %	26 %	34 %	24 %
	Phenol-d5	16 * %	29 %	9 * %	20 * %	23 * %	15 * %
	2-Fluorophenol	13 * %	23 * %	6 * %	16 * %	19 * %	13 * %
	2,4,6-Tribromophenol	19 %	37 %	14 * %	22 %	28 %	22 %
		fl	fl	fl	fl	fl	fl
Phenol		400 J	35 * %	10 * %	3900 U J	380 J	390 J
bis(2-Chloroethyl)ether		2900 U	35 * %	10 * %	3900 U	3100 U	3200 U
2-Chlorophenol		2900 U	33 * %	10 * %	3900 U	3100 U	3200 U
1,3-Dichlorobenzene		2900 U	28 * %	8 * %	3900 U	3100 U	3200 U
1,4-Dichlorobenzene		2900 U	29 * %	8 * %	3900 U	3100 U	3200 U
1,2-Dichlorobenzene		2900 U	31 * %	9 * %	3900 U	3100 U	3200 U
2-Methylphenol		2900 U	35 * %	11 * %	3900 U	3100 U	3200 U
2,2'-oxybis(1-Chloropropane)		2900 U	35 * %	10 * %	3900 U	3100 U	3200 U
4-Methylphenol		2900 U	40 * %	13 * %	3900 U	220 J	190 J
N-Nitroso-di-n-propylamine		2900 U	41 * %	12 * %	3900 U	3100 U	3200 U
Hexachloroethane		2900 U	27 * %	7 * %	3900 U	3100 U	3200 U
Nitrobenzene		2900 U	35 * %	10 * %	3900 U	3100 U	3200 U
Isophorone		2900 U	38 * %	11 * %	3900 U	3100 U	3200 U
2-Nitrophenol		2900 U	37 * %	11 * %	3900 U	3100 U	3200 U
2,4-Dimethylphenol		2900 U	40 * %	13 * %	3900 U	3100 U	3200 U
bis(2-Chloroethoxy)methane		2900 U	39 * %	11 * %	3900 U	3100 U	3200 U
2,4-Dichlorophenol		2900 U	37 * %	12 * %	3900 U	3100 U	3200 U
1,2,4-Trichlorobenzene		2900 U	34 * %	10 * %	3900 U	3100 U	3200 U
Naphthalene		2900 U	35 * %	10 * %	3900 U	3100 U	3200 U
4-Chloroaniline		2900 U	22 %	8 * %	3900 U	3100 U	3200 U
Hexachlorobutadiene		2900 U	36 * %	11 * %	3900 U	3100 U	3200 U
4-Chloro-3-methylphenol		2900 U	34 * %	11 * %	3900 U	3100 U	3200 U
2-Methylnaphthalene		2900 U	38 * %	11 * %	3900 U	3100 U	3200 U
Hexachlorocyclopentadiene		2900 U	29 %	5 * %	3900 U	3100 U	3200 U
2,4,6-Trichlorophenol		2900 U	45 %	15 %	3900 U	3100 U	3200 U
2,4,5-Trichlorophenol		7100 U	39 * %	13 * %	9800 U	7800 U	7900 U

*= Outside of EPA CLP QC limits.

000000008

000020

9/10/06

Cust ID:	J11910	J11910	J11910	J11911	J11912	J11913
RFW#:	001	001 MS	001 MSD	002	003	004
2-Chloronaphthalene	2900 U J	41 * %	13 * %	3900 U J	3100 U J	3200 U J
2-Nitroaniline	7100 U	38 * %	14 * %	9800 U	7800 U	7900 U
Dimethylphthalate	2900 U	34 * %	14 * %	3900 U	3100 U	3200 U
Acenaphthylene	2900 U	40 * %	12 * %	3900 U	3100 U	3200 U
2,6-Dinitrotoluene	2900 U	36 * %	14 * %	3900 U	3100 U	3200 U
3-Nitroaniline	7100 U	24 * %	11 * %	9800 U	7800 U	7900 U
Acenaphthene	2900 U	40 %	13 * %	3900 U	3100 U	3200 U
2,4-Dinitrophenol	7100 U	39 %	12 * %	9800 U	7800 U	7900 U
4-Nitrophenol	7100 U	8 * %	1 * %	9800 U	7800 U	7900 U
Dibenzofuran	2900 U	40 * %	13 * %	3900 U	3100 U	3200 U
2,4-Dinitrotoluene	2900 U	37 * %	13 * %	3900 U	3100 U	3200 U
Diethylphthalate	2900 U	32 * %	13 * %	3900 U	3100 U	3200 U
4-Chlorophenyl-phenylether	2900 U	42 * %	13 * %	3900 U	3100 U	3200 U
Fluorene	2900 U	40 * %	13 * %	3900 U	3100 U	3200 U
4-Nitroaniline	7100 U	25 * %	11 * %	9800 U	7800 U	7900 U
4,6-Dinitro-2-methylphenol	7100 U	40 %	14 * %	9800 U	7800 U	7900 U
N-Nitrosodiphenylamine (1)	2900 U	35 * %	13 * %	3900 U	3100 U	3200 U
4-Bromophenyl-phenylether	2900 U	39 * %	13 * %	3900 U	3100 U	3200 U
Hexachlorobenzene	2900 U	47 * %	15 * %	3900 U	3100 U	3200 U
Pentachlorophenol	7100 U	38 %	8 * %	9800 U	7800 U	7900 U
Phenanthrene	2900 U	60 %	13 * %	3900 U	3100 U	3200 U
Anthracene	2900 U	38 * %	13 * %	3900 U	3100 U	3200 U
Carbazole	2900 U	34 * %	12 * %	3900 U	3100 U	3200 U
Di-n-butylphthalate	2900 U	40 %	14 * %	3900 U	660 ~~2900~~ JBU	3200 U
Fluoranthene	2900 U	39 * %	14 * %	3900 U	3100 U	3200 U
Pyrene	2900 U	41 * %	13 * %	3900 U	3100 U	3200 U
Butylbenzylphthalate	2900 U	42 * %	13 * %	3900 U	3100 U	3200 U
3,3'-Dichlorobenzidine	2900 U	24 %	9 * %	3900 U	3100 U	3200 U
Benzo(a)anthracene	2900 U	43 * %	14 * %	3900 U	3100 U	3200 U
Chrysene	2900 U	40 * %	14 * %	3900 U	3100 U	3200 U
bis(2-Ethylhexyl)phthalate	380 J	39 * %	12 * %	570 J	1600 J	410 J
Di-n-octyl phthalate	2900 U	31 * %	10 * %	3900 U	3100 U	3200 U
Benzo(b)fluoranthene	2900 U	40 * %	14 * %	3900 U	3100 U	3200 U
Benzo(k)fluoranthene	2900 U	36 * %	13 * %	3900 U	3100 U	3200 U
Benzo(a)pyrene	2900 U	37 * %	12 * %	3900 U	3100 U	3200 U
Indeno(1,2,3-cd)pyrene	2900 U	45 * %	16 * %	3900 U	3100 U	3200 U
Dibenz(a,h)anthracene	2900 U	46 * %	16 * %	3900 U	3100 U	3200 U
Benzo(g,h,i)perylene	2900 U	43 * %	15 * %	3900 U	3100 U	3200 U

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

JL 9/10/06

	Cust ID:	J11914	J11916	J11917	J11918	J11920	J11921
Sample Information	RFW#:	005	006	007	008	009	010
	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	19 * %	9 * %	13 * %	18 * %	37 %	16 * %
	2-Fluorobiphenyl	23 * %	10 * %	15 * %	25 * %	47 %	21 * %
	Terphenyl-d14	28 %	14 * %	18 %	32 %	56 %	29 %
	Phenol-d5	21 * %	10 * %	11 * %	16 * %	40 %	21 * %
	2-Fluorophenol	18 * %	8 * %	9 * %	14 * %	34 %	15 * %
	2,4,6-Tribromophenol	22 %	11 * %	14 * %	25 %	46 %	22 %
		fl	fl	fl	fl	fl	fl
Phenol		1200 J	270 J	290 J	560 J	540 J	250 J
bis(2-Chloroethyl)ether		2700 U	3400 U J	2900 U J	3300 U	3400 U	3600 U
2-Chlorophenol		2700 U	3400 U R	2900 U R	3300 U	3400 U	3600 U
1,3-Dichlorobenzene		2700 U	3400 U J	2900 U J	3300 U	3400 U	3600 U
1,4-Dichlorobenzene		2700 U	3400 U J	2900 U	3300 U	3400 U	3600 U
1,2-Dichlorobenzene		2700 U	3400 U J	2900 U	3300 U	3400 U	3600 U
2-Methylphenol		2700 U	3400 U J	2900 U	3300 U	3400 U	3600 U
2,2'-oxybis(1-Chloropropane)		2700 U	3400 U J	2900 U	3300 U	3400 U	3600 U
4-Methylphenol		320 J	3400 U J	150 J	310 J	340 J	3600 U
N-Nitroso-di-n-propylamine		2700 U	3400 U R	2900 U	3300 U	3400 U	3600 U
Hexachloroethane		2700 U	3400 U J	2900 U	3300 U	3400 U	3600 U
Nitrobenzene		2700 U	3400 U R	2900 U	3300 U	3400 U	3600 U
Isophorone		2700 U	3400 U J	2900 U	3300 U	3400 U	3600 U
2-Nitrophenol		2700 U	3400 U R	2900 U	3300 U	3400 U	3600 U
2,4-Dimethylphenol		2700 U	3400 U J	2900 U	3300 U	3400 U	3600 U
bis(2-Chloroethoxy)methane		2700 U	3400 U R J	2900 U	3300 U	3400 U	3600 U
2,4-Dichlorophenol		2700 U	3400 U R	2900 U R	3300 U	3400 U	3600 U
1,2,4-Trichlorobenzene		2700 U	3400 U J	2900 U J	3300 U	3400 U	3600 U
Naphthalene		2700 U	3400 U R J	2900 U	3300 U	3400 U	3600 U
4-Chloroaniline		2700 U	3400 U R	2900 U	3300 U	3400 U	3600 U
Hexachlorobutadiene		2700 U	3400 U R J	2900 U	3300 U	3400 U	3600 U
4-Chloro-3-methylphenol		2700 U	3400 U R	2900 U R	3300 U	3400 U	3600 U
2-Methylnaphthalene		2700 U	3400 U J	2900 U J	3300 U	3400 U	3600 U
Hexachlorocyclopentadiene		2700 U	3400 U J	2900 U	3300 U	3400 U	3600 U
2,4,6-Trichlorophenol		2700 U	3400 U J	2900 U	3300 U	3400 U	3600 U
2,4,5-Trichlorophenol		6800 U	8500 U J	7300 U	8200 U	8600 U	8900 U

*= Outside of EPA CLP QC limits.

000022

000000010

Cust ID:	J11914		J11916		J11917		J11918		J11920		J11921	
RFW#:	005		006		007		008		009		010	
2-Chloronaphthalene	2700	UJ	3400	UJ	2900	UJ	3300	UJ	3400	UJ	3600	UJ
2-Nitroaniline	6800	U	8500	UR	7300	U	8200	U	8600	U	8900	U
Dimethylphthalate	2700	U	3400	UJ	2900	U	3300	U	3400	U	3600	U
Acenaphthylene	2700	U	3400	UJ	2900	U	3300	U	3400	U	3600	U
2,6-Dinitrotoluene	2700	U	3400	UR	2900	U	3300	U	3400	U	3600	U
3-Nitroaniline	6800	U	8500	UR	7300	U	8200	U	8600	U	8900	U
Acenaphthene	2700	U	3400	UJ	2900	U	3300	U	3400	U	3600	U
2,4-Dinitrophenol	6800	U	8500	UR	7300	U	8200	U	8600	U	8900	U
4-Nitrophenol	6800	U	8500	UJ	7300	U	8200	U	8600	U	8900	U
Dibenzofuran	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
2,4-Dinitrotoluene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Diethylphthalate	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
4-Chlorophenyl-phenylether	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Fluorene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
4-Nitroaniline	6800	U	8500	UR	7300	U	8200	U	8600	U	8900	U
4,6-Dinitro-2-methylphenol	6800	U	8500	UJ	7300	U	8200	U	8600	U	8900	U
N-Nitrosodiphenylamine (1)	2700	U	3400	UR	2900	U	3300	U	3400	U	3600	U
4-Bromophenyl-phenylether	2700	U	3400	UJ	2900	U	3300	U	3400	U	3600	U
Hexachlorobenzene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Pentachlorophenol	6800	U	8500	U	7300	U	8200	U	8600	U	8900	U
Phenanthrene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Anthracene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Carbazole	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Di-n-butylphthalate	2700	U	3400	U	2900	U	660	JBU	660	JBU	660	JBU
Fluoranthene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Pyrene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Butylbenzylphthalate	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
3,3'-Dichlorobenzidine	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Benzo(a)anthracene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Chrysene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
bis(2-Ethylhexyl)phthalate	470	J	240	J	230	J	360	J	920	J	470	J
Di-n-octyl phthalate	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Benzo(b)fluoranthene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Benzo(k)fluoranthene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Benzo(a)pyrene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Indeno(1,2,3-cd)pyrene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Dibenz(a,h)anthracene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U
Benzo(g,h,i)perylene	2700	U	3400	U	2900	U	3300	U	3400	U	3600	U

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

9/10/α

000023

000000011

	Cust ID:	J11922	J11923	J11924	J11925	SBLKZF	SBLKZF BS
Sample Information	RFW#:	011	012	013	014	06LE0304-MB1	06LE0304-MB1
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOIL	SOIL
	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	15 * %	24 %	14 * %	25 %	22 * %	29 %
	2-Fluorobiphenyl	19 * %	29 * %	19 * %	30 %	27 * %	34 %
	Terphenyl-d14	29 %	38 %	24 %	37 %	46 %	40 %
	Phenol-d5	17 * %	24 %	17 * %	27 %	25 %	29 %
	2-Fluorophenol	13 * %	18 * %	13 * %	22 * %	25 %	26 %
	2,4,6-Tribromophenol	20 %	31 %	19 %	30 %	29 %	37 %
		fl	fl	fl	fl	fl	fl
Phenol		380 J	380 J	170 J	230 J	4000 U	30 * %
bis(2-Chloroethyl)ether		3900 U	3600 U	3500 U	2900 U	4000 U	33 * %
2-Chlorophenol		3900 U	3600 U	3500 U	2900 U	4000 U	30 * %
1,3-Dichlorobenzene		3900 U	3600 U	3500 U	2900 U	4000 U	27 * %
1,4-Dichlorobenzene		3900 U	3600 U	3500 U	2900 U	4000 U	26 * %
1,2-Dichlorobenzene		3900 U	3600 U	3500 U	2900 U	4000 U	27 * %
2-Methylphenol		3900 U	3600 U	3500 U	2900 U	4000 U	28 * %
2,2'-oxybis(1-Chloropropane)		3900 U	3600 U	3500 U	2900 U	4000 U	33 * %
4-Methylphenol		3900 U	3600 U	3500 U	180 J	4000 U	31 * %
N-Nitroso-di-n-propylamine		3900 U	3600 U	3500 U	2900 U	4000 U	35 * %
Hexachloroethane		3900 U	3600 U	3500 U	2900 U	4000 U	27 * %
Nitrobenzene		3900 U	3600 U	3500 U	2900 U	4000 U	31 * %
Isophorone		3900 U	3600 U	3500 U	2900 U	4000 U	35 * %
2-Nitrophenol		3900 U	3600 U	3500 U	2900 U	4000 U	30 * %
2,4-Dimethylphenol		3900 U	3600 U	3500 U	2900 U	4000 U	23 * %
bis(2-Chloroethoxy)methane		3900 U	3600 U	3500 U	2900 U	4000 U	34 * %
2,4-Dichlorophenol		3900 U	3600 U	3500 U	2900 U	4000 U	30 * %
1,2,4-Trichlorobenzene		3900 U	3600 U	3500 U	2900 U	4000 U	29 * %
Naphthalene		3900 U	3600 U	3500 U	2900 U	4000 U	30 * %
4-Chloroaniline		3900 U	3600 U	3500 U	2900 U	4000 U	35 %
Hexachlorobutadiene		3900 U	3600 U	3500 U	2900 U	4000 U	33 * %
4-Chloro-3-methylphenol		3900 U	3600 U	3500 U	2900 U	4000 U	34 * %
2-Methylnaphthalene		3900 U	3600 U	3500 U	2900 U	4000 U	31 * %
Hexachlorocyclopentadiene		3900 U	3600 U	3500 U	2900 U	4000 U	20 %
2,4,6-Trichlorophenol		3900 U	3600 U	3500 U	2900 U	4000 U	33 %
2,4,5-Trichlorophenol		9800 U	9000 U	8700 U	7300 U	10000 U	36 * %

*= Outside of EPA CLP QC limits.

9/10/06

000000012

000024

Cust ID:	J11922		J11923		J11924		J11925		SBLKZF		SBLKZF BS	
RFW#:	011		012		013		014		06LE0304-MB1		06LE0304-MB1	
2-Chloronaphthalene	3900	U J	3600	U J	3500	U J	2900	U J	4000	U	33	* %
2-Nitroaniline	9800	U	9000	U	8700	U	7300	U	10000	U	38	* %
Dimethylphthalate	3900	U	3600	U	3500	U	2900	U	4000	U	41	* %
Acenaphthylene	3900	U	3600	U	3500	U	2900	U	4000	U	35	* %
2,6-Dinitrotoluene	3900	U	3600	U	3500	U	2900	U	4000	U	39	* %
3-Nitroaniline	9800	U	9000	U	8700	U	7300	U	10000	U	39	* %
Acenaphthene	3900	U	3600	U	3500	U	2900	U	4000	U	35	* %
2,4-Dinitrophenol	9800	U	9000	U	8700	U	7300	U	10000	U	5	* %
4-Nitrophenol	9800	U	9000	U	8700	U	7300	U	10000	U	1	* %
Dibenzofuran	3900	U	3600	U	3500	U	2900	U	4000	U	36	* %
2,4-Dinitrotoluene	3900	U	3600	U	3500	U	2900	U	4000	U	42	* %
Diethylphthalate	3900	U	3600	U	3500	U	2900	U	4000	U	42	* %
4-Chlorophenyl-phenylether	3900	U	3600	U	3500	U	2900	U	4000	U	37	* %
Fluorene	3900	U	3600	U	3500	U	2900	U	4000	U	38	* %
4-Nitroaniline	9800	U	9000	U	8700	U	7300	U	10000	U	37	* %
4,6-Dinitro-2-methylphenol	9800	U	9000	U	8700	U	7300	U	10000	U	29	* %
N-Nitrosodiphenylamine (1)	3900	U	3600	U	3500	U	2900	U	4000	U	31	* %
4-Bromophenyl-phenylether	3900	U	3600	U	3500	U	2900	U	4000	U	34	* %
Hexachlorobenzene	3900	U	3600	U	3500	U	2900	U	4000	U	39	* %
Pentachlorophenol	9800	U	9000	U	8700	U	7300	U	10000	U	29	* %
Phenanthrene	3900	U	3600	U	3500	U	2900	U	4000	U	39	* %
Anthracene	3900	U	3600	U	3500	U	2900	U	4000	U	40	* %
Carbazole	3900	U	3600	U	3500	U	2900	U	4000	U	40	* %
Di-n-butylphthalate	3900	U	660 ~~240~~ JB	U	660 ~~270~~ JB	U	660 ~~390~~ JB	U	590	J	43	%
Fluoranthene	3900	U	3600	U	3500	U	2900	U	4000	U	43	* %
Pyrene	3900	U	3600	U	3500	U	2900	U	4000	U	41	* %
Butylbenzylphthalate	3900	U	3600	U	3500	U	2900	U	4000	U	44	* %
3,3'-Dichlorobenzidine	3900	U	3600	U	3500	U	2900	U	4000	U	39	%
Benzo(a)anthracene	3900	U	3600	U	3500	U	2900	U	4000	U	39	* %
Chrysene	3900	U	3600	U	3500	U	2900	U	4000	U	41	* %
bis(2-Ethylhexyl)phthalate	650	J	1700	J	970	J	770	J	4000	U	40	* %
Di-n-octyl phthalate	3900	U	3600	U	3500	U	2900	U	4000	U	32	* %
Benzo(b)fluoranthene	3900	U	3600	U	3500	U	2900	U	4000	U	42	* %
Benzo(k)fluoranthene	3900	U	3600	U	3500	U	2900	U	4000	U	40	* %
Benzo(a)pyrene	3900	U	3600	U	3500	U	2900	U	4000	U	40	* %
Indeno(1,2,3-cd)pyrene	3900	U	3600	U	3500	U	2900	U	4000	U	43	* %
Dibenz(a,h)anthracene	3900	U	3600	U	3500	U	2900	U	4000	U	42	* %
Benzo(g,h,i)perylene	3900	U	3600	U	3500	U	2900	U	4000	U	42	* %

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

R 9/10/06

000000013

000025

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0604L725
SDG/SAF # K0270\RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 04-08-2006

SEMIVOLATILE

Fourteen (14) solid (mice) samples were collected on 03-21,22,23-2006.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 04-20-2006 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 06-28,29-2006.

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

2. All solid sample results were reported on a wet-weight basis.

3. Due to the nature of the sample matrix, all samples were extracted using reduced sample volume, extracts were also GPDd and were analyzed using reduced final volume. A copy of the Sample Extraction Record has been enclosed.

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

5. Fifty-seven (57) of one hundred eight (108) surrogate recoveries were outside acceptance criteria. The surrogate recovery criteria were not met for several samples. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

6. One hundred seventeen (117) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

7. Fifty-nine (59) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

8. The method blank contained the common laboratory contaminant Di-n-butylphthalate 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 47 pages.

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

LIONVILLE LABORATORY INC.

9. Internal standard area criteria were not met for several samples; however, the GC/MS instrument was inspected for possible malfunction and was judged to be functioning properly.

10. 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").

11. 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.

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.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

7/10/06
Date

som\gorup\data\bna\tnu-hanford\0604-725.doc

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

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 06M5229

Initiator: Robert Carden
Date: 7/6/06
Client: INV Hanford RC047

Batch: 06M6725
Samples: ALL
Method: SW846/MCAWW/CLP/

Parameter: 0625H
Matrix: Solid
Prep Batch: 06LE0304

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) Samples extracted 16, 15, 14 days beyond hold time
(2) Samples analyzed 29, 30 days beyond hold time
(3) 57 of 108 surrogates outside QC criteria
(4) 170 of 192 spike recoveries outside QC criteria in MS/MSD/BS

2. Known or Probable Causes(s)

(1) due to limited sample volume SVOC extractions had to wait until sample became available after metals, PCB, Pest as per COC
(2) Samples not received by BX until 6/28/06 - awaiting additional clean (GPC)
(3) matrix effect? / low during extraction process (concentration on standards / concentration on NEAT / GPC)?
(4) matrix effect in matrix? low during extraction process (concentration on standards / concentration on NEAT / GPC) in BS/MS/MSD?

3. Discussion and Proposed Action

Other Description: Nunite

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

4. Project Manager Instructions...signature/date: 7/6/06

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

5. Final Action...signature/date: 7/7/06

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

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0270

RECEIVED JUL 2006

DATE RECEIVED: 04/08/06 LVL LOT # :06

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11910	001	SO	06LE0304	03/22/06	04/20/06	06/28/06
J11910	001 MS	SO	06LE0304	03/22/06	04/20/06	06/28/06
J11910	001 MSD	SO	06LE0304	03/22/06	04/20/06	06/28/06
J11911	002	SO	06LE0304	03/22/06	04/20/06	06/28/06
J11912	003	SO	06LE0304	03/23/06	04/20/06	06/28/06
J11913	004	SO	06LE0304	03/23/06	04/20/06	06/28/06
J11914	005	SO	06LE0304	03/23/06	04/20/06	06/28/06
J11916	006	SO	06LE0304	03/21/06	04/20/06	06/28/06
J11917	007	SO	06LE0304	03/21/06	04/20/06	06/28/06
J11918	008	SO	06LE0304	03/22/06	04/20/06	06/28/06
J11920	009	SO	06LE0304	03/22/06	04/20/06	06/29/06
J11921	010	SO	06LE0304	03/22/06	04/20/06	06/29/06
J11922	011	SO	06LE0304	03/22/06	04/20/06	06/29/06
J11923	012	SO	06LE0304	03/22/06	04/20/06	06/29/06
J11924	013	SO	06LE0304	03/22/06	04/20/06	06/29/06
J11925	014	SO	06LE0304	03/23/06	04/20/06	06/29/06

LAB QC:

SBLKZF	MB1	S	06LE0304	N/A	04/20/06	06/28/06
SBLKZF	MB1 BS	S	06LE0304	N/A	04/20/06	06/28/06

Lionville Laboratory Use Only

06041725

Custody Transfer Record/Lab Work Request

Page 1 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNU Hanford RC-047

LL Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: Spec. Del: Std. TAT: 30 Days

Date Rec'd: 4-8-06 Date Due: 5/8/06

Refrigerator #		A												
#/Type Container	Liquid / Solid	2												
Volume	Liquid / Solid	1 L / 250												
Preservatives		→												
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb	Pest			INORG: Metals	CN				
Lionville Laboratory Use Only			0625H	0PCB		0608H			METALS					

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0PCB		0608H			METALS						
001	J11910	✓	✓	SO *	3.22.06	0835	X	X		X			X						
002	J11911					0945	X	X		X			X						
003	J11912				3.22.06	0745	X	X		X			X						
004	J11913					0815	X	X		X			X						
005	J11914					0934	X	X		X			X						
006	J11916				3.21.06	1400	X	X		X			X						
007	J11917					1440	X	X		X			X						
008	J11918				3.22.06	0745	X	X		X			X						
009	J11920					1100	X	X		X			X						
010	J11921					1155	X	X		X			X						

Special Instructions:

per Joan Kessner / Perform Metals, PCB, Pest, SVOC in this order as sample is available.

METALS (1) = HSL + B, Li, Mo, Si, Sn, Ti, U, P, Zr, Ga

DATE/REVISIONS:

* 1. Matrix Composed of Mice".

2.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
FedEx	D. Smith	4.8.06	10:15

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"			

ORIGINAL REWRITTEN

0000000031

Lionville Laboratory Use Only

06041725

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TRU Hanford RC-047

Est. Final Proj. Sampling Date:

Project #:

Project Contact/Phone #: [illegible]

Lionville Laboratory Project Manager: Orlette Johnson

QC: Dal: TAT:

Date Rec'd: 4-8-06 Date Due:

Refrigerator #			A														
#/Type Container	Liquid / Solid		2														
Volume	Liquid / Solid		191														
Preservatives			250														
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb	Pest			Metal	CN							
		Lionville Laboratory Use Only															
			0625H	OPCB		060814			METALS								

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected		0625H	OPCB		060814			METALS						
011	J11922			SO	3-23-06	1345		X	X		X			X						
012	J11923					1427		X	X		X			X						
013	J11924				3-23-06	1457		X	X		X			X						
014	J11925				3-23-06	0904		X	X		X			X						

Special Instructions:

MS/MSD = HSL + B, Li, Mo, Si, Sn, Ti, U, P, Bi, Zr

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time
[illegible]	D. Smith	4-8-06	10:15

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

000000032

000000032

Collector: TILLER, B. / TRK / JTB	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 RIPARIAN #4 OFFAL K0270 (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060322	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 MICE"

000033

SAMPLE ANALYSIS SDG# K0270

Preservation	COOL 4C	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	1	0	0	0	0					
Volume	250mL	2g	5g	15g	50g	50g	50g					
	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									
J11910	OTHER SOLID	03-22-06	0835	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: JAMES BERNHARD, Date/Time: 3-24-06 1200	Received By/Stored In: EAS LOCKED STORAGE, Date/Time: 3-24-06 1200
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time: 03-27-06 0900	Received By/Stored In: J.R. Glanzman, Date/Time: 3-27-06 0900
Relinquished By/Removed From: J.R. Glanzman, Date/Time: 3-27-06 1500	Received By/Stored In: FED EX, Date/Time:
Relinquished By/Removed From: FED EX, Date/Time:	Received By/Stored In: [illegible], Date/Time: 3/28/06 10:15
Relinquished By/Removed From: [illegible], Date/Time: 4/7/06 16:00	Received By/Stored In: FED EX, Date/Time:
Relinquished By/Removed From: FED EX, Date/Time: 4-8-06 10:15	Received By/Stored In: D. Johnson, Date/Time: 4-8-06 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

mcm
3/29/06

SDG# K0270

Matrix *
Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
Air=Air
DS=Drum Solids
DL=Drum Liquids
Tis=Tissue
Wip=Wipe
Liq=Liquid
Veg=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)

000000033

Collector	Company Contact	Telephone No.	Project Coordinator	Price Code	Data Turnaround
TILLER, B.	JOAN KESSNER	375-4688	KESSNER, JH	9N	45 Days

Project Designation	Sampling Location	SAF No.	Air Quality
100 & 300 Area Component of the RCBRA Sediment and Ti	100-K RIPARIAN #5 OFFAL K0270 (7407)	RC-047	☐

Ice Chest No.	Field Logbook No.	COA	Method of Shipment
ERC-96-058	EL-1595	BESRAS6520	FED EX

Shipped To	Offsite Property No.	Bill of Lading/Air Bill No.
EBERLINE SERVICES / LIONVILLE	A060322	SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF MICE"

000034

SAMPLE ANALYSIS

SDG# K0270

Preservation	COOL 4C ~~None~~ 5/8 22706	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	1	0	0	0	0					
Volume	250mL	2g	5g	15g	50g	50g	50g					
	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									
J11911	OTHER SOLID	03-22-06	0945	X	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	12:00 3-27-06	EAS LOCKED STORAGE	1700 3-27-06
EAS LOCKED STORAGE	0900 03-27-06	J.R. Thornton	3-27-06 0900
J.R. Thornton / J.E. Thornton	3-27-06 1500	FED EX	
FED EX		MLM	3/28/06 10:15
Alex Kellinsky	4/7/06 16:00	FED EX	
FED EX	4-8-06 10:15	[illegible]	4-8-06 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

MLM
3/29/06

SDG# K0270

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)

000000034

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector TILLER, B. / JCB / TRK	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 UPRIVER REF. RIPARIAN #12 OFFAL K0270(7407)	SAF No. RC-047	
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060322	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 MICE"

000035

SAMPLE ANALYSIS

SOG# K0270

Preservation	Cool 4C ~~None~~ 1M HCl	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	1	0	0	0	0					
Volume	250mL	2g	5g	15g	50g	50g	50g					
	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									
J11912	OTHER SOLID	MAR 23 2006	6745	X	X	X						

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From ECR JAMES BERNHARD	EAS LOCKED STORAGE ECR	1200 3-24-06
Relinquished By/Removed From EAS LOCKED STORAGE	T.L. Edmundson	0900 3-27-06
Relinquished By/Removed From WCH T.L. Edmundson	FED EX	1500 3-27-06
Relinquished By/Removed From FED EX		3/28/06 10:15
Relinquished By/Removed From	FED EX	4/7/06 16:00
Relinquished By/Removed From FED EX		4.8.06 / 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

Gamma - Sb125, Ru106, Be7, Co60

MLM 3/29/6

SOG # K0270

Matrix *

Se=Soil
SFs=Sediments
SO=Solid
SlS=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
Li=Liquid
Ve=Vegetation
Xo=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/ANALYSIS REQUEST

Collector: TILLER, B. / JCB / TRK	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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: UPRIVER REF. RIPARIAN #13 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060322	Bill of Lading/Air Bill No.: SEE OSPC	

000000036

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS.

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF MICE"

Preservation	COOL 4C ~~None~~ JB 2/27/06	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	250mL	2g	5g	15g	50g	50g	50g				

SAMPLE ANALYSIS

SDG# K0270

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)			
J11913	OTHER SOLID	MAR 23 2006	0815	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	3-24-06 1200	EAS LOCKED STORAGE	3-24-06 1200
EAS LOCKED STORAGE	03-27-06 0900	T.L. Edmundson	3-27-06 0900
T.L. Edmundson	3-27-06 1500	FED EX	
FED EX		MJM	3/28/06 10:15
Alex Kelling	4/7/06 16:00	FED EX	
Alex	4-8-06 10:15	D Smith	4-8-06 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline - perform Gamma Spec then transfer bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST, SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

MJM 8/29/6

SDG# K0270

Matrix *

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

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

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

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: TILLER, B. / TKK / SES	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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: UPRIVER REF. RIPARIAN #16 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060322	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 MICE"

Preservation	COOL 4C	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	sG	G/P	G/P	G/P	sG	sG	sG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	250mL	2g	5g	15g	50g	50g	50g				

SAMPLE ANALYSIS
SDG# K0270

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)			
J11914	OTHER SOLID	03-23-06	0934	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: JAMES BERNHARD		1200 3-24-06
Received By/Stored In: EAS LOCKED STORAGE		1700 3-24-06
Relinquished By/Removed From: EAS LOCKED STORAGE		0900 03-27-06
Received By/Stored In: JR Edmundson		3-27-06 0900
Relinquished By/Removed From: T.K. Edmundson / JR Edmundson		3-27-06 1500
Received By/Stored In: FED EX		
Relinquished By/Removed From: FED EX		
Received By/Stored In: MM		3/28/06 10:15
Relinquished By/Removed From: Jill Kelly		4/7/06 16:00
Received By/Stored In: FEDEX		
Relinquished By/Removed From: FEDEX		4-8-06 10:15
Received By/Stored In: D Smith		4-8-06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then ship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134
MCM
3/29/6

SDG# K0270

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
W/I=Wipe
L=Liquid
Ve=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)

000000037

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector TILLER, B. / JEB / TRK	Company Contact JOAN KESSNER	Telephone No. 375-4688 K0270	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-H RIPARIAN #1 OFFAL (7407)	SAF No. RC-047	
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060322	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 MICE"

Preservation	COOL 4C ~~None~~ ~~None~~ 8/13-2706		Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	aG	G/P	G/P	aG	aG	aG	
No. of Container(s)	1	1	0	0	0	0	
Volume	250mL	5g	15g	50g	50g	50g	

SAMPLE ANALYSIS SDGH K0270

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Stromium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)				
J11916	OTHER SOLID	03-21-06	1400	X	X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1700 3-24-06	EAS LOCKED STORAGE	1700 3-24-06
EAS LOCKED STORAGE	0900 03-27-06	T.G. Edmundson / J.B. Edmundson	3-27-06 0900
T.G. Edmundson / J.B. Edmundson	WCH 3-27-06 / 1500	FED EX	
FED EX		FEDEX / 3/28/06	10:15
Alex Kelly	4/7/06 16:00	FEDEX	
FEDEX	4-8-06 / 10:15	D. Smith	4-8-06 / 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma-Sb125, Ru106, Be7, Co134

MLM 3/29/06

SDGH K0270

Matrix *

S=Soil
SD=Sediment
SL=Solid
Sl=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
Li=Liquid
Ve=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)

000038

000000038

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: TILLER, B. /TRK/JEB	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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-D RIPARIAN #2 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-05 S	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A060322	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 MICE"

Preservation	COOL 4C	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	0	0	0	0					
Volume	250mL	5g	15g	50g	50g	50g					
SAMPLE ANALYSIS SDGH K0270	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								
J11917	OTHER SOLID	03-21-06	1440	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FED EX JAMES BERNHARD	1700 3-24-06	JCL EAS LOCKED STORAGE	1700 3-24-06
EAS LOCKED STORAGE	0730 03-27-06	J.R. Edmundson	3-27-06 OFFAL
J.R. Edmundson LCH	3-27-06/1500	FED EX	
FED EX		MJM 3/28/06	0:15
Alex Kelly	4/7/06 16:00	FEDEX	
Fed Ex	4-8-06 10:15	D. Smith	4-8-06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs. If possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

Gamma - Sb125, Ru106, Be7, Co134
MJM 3/29/06

SDGH K0270

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
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)

000000039

000000039

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: TILLER, B. / TRK / JCB	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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-D RIPARIAN #3 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060322	Bill of Lading/Air Bill No.: SEE OSPC	

000000040

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF MICE"

000040

SAMPLE ANALYSIS

SDG# K0270

Preservation	COOL 4C ~~None~~	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	aG	G/P	G/P	aG	aG	aG						
No. of Container(s)	1	1	0	0	0	0						
Volume	250mL	5g	15g	30g	30g	30g						
	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									
J11918	OTHER SOLID	03-22-06	0745	X	X							

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: JAMES BERNHARD, Date/Time: 1240 3-24-06	Received By/Stored In: EAS LOCKED STORAGE Date/Time: 1200 3-24-06	
Relinquished By/Removed From: EAS LOCKED STORAGE Date/Time: 03-27-06 0900	Received By/Stored In: Date/Time: 3-27-06 0900	
Relinquished By/Removed From: Date/Time: 3-27-06/1500	Received By/Stored In: FED EX Date/Time:	
Relinquished By/Removed From: FED EX Date/Time:	Received By/Stored In: Date/Time: 3/28/06 10:15	
Relinquished By/Removed From: Date/Time: 4/7/06 16:00	Received By/Stored In: FEDEX Date/Time:	
Relinquished By/Removed From: FED EX Date/Time: 4-8-06 10:15	Received By/Stored In: Date/Time: 4-8-06 10:15	

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

MM 3/29/06

SDG# K0270

Matrix *

Solid
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
As=Air
DS=Drum Solids
DL=Drum Liquids
To=Tissue
Wi=Wipe
L=Liquid
Ve=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

Collector TILLER, B. ITCK/JCG	Company Contact JOAN KESSNER	Telephone No. 375-4688 K0270 (7407)	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-F RIPARIAN #7 OFFAL		SAF No. RC-047	Air Quality ☐
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060322		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 MICE"

Preservation	COOL 4C None AB 2006	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	aG	G/P	G/P	aG	aG	aG	
No. of Container(s)	1	1	0	0	0	0	
Volume	250mL	5g	15g	50g	50g	50g	

SAMPLE ANALYSIS SDG# K0270

Sample No.	Matrix *	Sample Date	Sample Time	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)				
J11920	OTHER SOLID	MAR 22 2006	1100	X	X								

000041

CHAIN OF POSSESSION — EAS LOCKED STORAGE

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	3-24-06 1200	EAS LOCKED STORAGE	3-24-06 1200
EAS LOCKED STORAGE	03-27-06 0700	EAS LOCKED STORAGE	3-27-06 0700
T.E. Edmondson	3-27-06 1500	FED EX	
FED EX			3/28/06 10:15
	4/7/06 16:00	FEDEX	
	4-8-06 10:15		4-8-06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

Gamma- Sb125, Ru106, Be7, Co134
mm
3/29/06

SDG# K0270

Matrix *
S=Soil
Sed=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
Ve=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)

000000041

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: TILLER, B. /TCK/	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCDRA Sediment and Ti	Sampling Location: 100-H RIPARIAN #8 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322	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 MICE"

000042

SAMPLE ANALYSIS
SDG# K0270

Preservation	COOL 4C ~~None~~ HH 3.3.06	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	G/P	G/P	aG	aG	aG							
No. of Container(s)	1	1	0	0	0	0							
Volume	250mL	5g	15g	50g	50g	50g							
	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										
J11921	OTHER SOLID	MAR 22 2006	1155	X	X								

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: GCE	Received By/Stored In: GCE EAS LOCKED STORAGE	1200 3-24-06
Relinquished By/Removed From: JAMES BERNHARD / EAS LOCKED STORAGE	Received By/Stored In: T.K. Edmundson	0900 03-27-06
Relinquished By/Removed From: WCH / T.K. Edmundson	Received By/Stored In: FED EX	3-27-06 1500
Relinquished By/Removed From: FED EX	Received By/Stored In:	03/28/06 10:15
Relinquished By/Removed From:	Received By/Stored In: FEDEX	4/7/06 16:00
Relinquished By/Removed From: Fed Ex	Received By/Stored In:	4-8-06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline - perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134
mm 3/29/6

SDG# K0270

Matrix *
Soil=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
Li=Liquid
Ve=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)

000000042

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS RECORD

Collector: TILLER, B. / TRK / JES	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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-H RIPARIAN #9 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060322	Bill of Lading/Air Bill No.: SEE OSPC	

000000043

POSSIBLE SAMPLE HAZARDS/REMARKS
POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF MICE"

000043

SAMPLE ANALYSIS
SDG# K0270

Preservation	COOL 4C ~~None~~ 1/18 22306	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	aG	G/P	G/P	aG	aG	aG						
No. of Container(s)	1	1	0	0	0	0						
Volume	250mL	5g	15g	50g	50g	50g						
	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									
J11922	OTHER SOLID	03-22-06	1315	X	X							

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From: JAMES BERNHARD	PCR 3-24-06	1200	EAS LOCKED STORAGE PCR	3-24-06 1200
Relinquished By/Removed From: EAS LOCKED STORAGE	03-27-06	0900	[illegible]	3-27-06 0900
Relinquished By/Removed From: WLH	T.R. Edmundson 3-27-06	1500	Received By/Stored In: FED EX	
Relinquished By/Removed From: FED EX			Received By/Stored In: MW	3/28/06 10:15
Relinquished By/Removed From: Alex Kellen		4/7/06 16:00	Received By/Stored In: FEDEX	
Relinquished By/Removed From: FED EX		4.8.06 10:15	Received By/Stored In: D. J. Smith	4.8.06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma- Sb125, Ru106, Ba7, Co134
mcm
3/29/06

SDG-# K0270

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
Ve=Vegetation
X=Other

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

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

Washington Closure Hanford

Collector: TILLER, B. / JEG / JEK	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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-D RIPARIAN #10 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322	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 MICE"

000044

Preservation	Cool 4C chlorine 2/10 2006	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	0	0	0	0					
Volume	250mL	5g	15g	50g	50g	50g					

SAMPLE ANALYSIS

SDG# K0270

Sample No.	Matrix *	Sample Date	Sample Time	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)					
J11923	OTHER SOLID	MAR 22 2006	1427	X	X									

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: JAMES BERNHARD	Received By/Stored In: EAS LOCKED STORAGE	1200 3-24-06
Relinquished By/Removed From: EAS LOCKED STORAGE	Received By/Stored In: T.R. Edmundson	0700 03-27-06
Relinquished By/Removed From: WCH T.R. Edmundson	Received By/Stored In: FED EX	3-27-06 / 1500
Relinquished By/Removed From: FED EX	Received By/Stored In: FED EX	3/28/06 10:15
Relinquished By/Removed From: Felix Edwards	Received By/Stored In: FEDEX	4/7/06 16:00
Relinquished By/Removed From: FED EX	Received By/Stored In: D. J. Smith	4-8-06 1095 / 4-8-06 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

mcm
3/29/6

SDG# K0270

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; Ve=Vegetation; X=Other

LABORATORY SECTION	Received By: 4-8-06 10:15	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

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

000000044

Washington Closure Hanford

Collector TILLER, B. / JEB / TRK	Company Contact JOAN KESSNER	Telephone No. 375-4688 K0270	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location UPRIVER REF. RIPARIAN #11 OFFAL (T407)		SAP No. RC-047
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060322		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9N

Air Quality ☐

Data Turnaround 45 Days

000000045

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF MICE"

000045

Preservation	COOL 4C ~~None~~ 3/8 2006	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	aG	G/P	G/P	aG	aG	aG						
No. of Container(s)	1	1	0	0	0	0						
Volume	250mL	5g	15g	50g	50g	50g						
SAMPLE ANALYSIS SDG# K0270	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									
J11924	OTHER SOLID	MAR 22 2006	1457	X	X							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From JAMES BERNHARD	Date/Time 3-24-06 1700	Received By/Stored In EAS LOCKED STORAGE	Date/Time 3-24-06 1200
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 03-27-06 0900	Received By/Stored In J.R. Elmendorf	Date/Time 3-27-06 0900
Relinquished By/Removed From J.R. Elmendorf 3-27-06 1500	Date/Time	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In 3/28/06	Date/Time 10:15
Relinquished By/Removed From Alex Kelly	Date/Time 4/7/06 16:00	Received By/Stored In FEDEX	Date/Time
Relinquished By/Removed From FEDEX	Date/Time 4-8-06 1015	Received By/Stored In N. Smith	Date/Time 4-8-06 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Ba7, Co134

mm 3/29/6

SDG# K0270

Matrix *

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	
Ve=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

Collector TILLER, B. / TRK / JCB	Company Contact JOAN KESSNER	Telephone No. 375-4688 K0270	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 UPRIVER REF. RIPARIAN #14 OFFAL (7407)	SAF No. RC-047	
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060322	Bill of Lading/Air Bill No. SEE OSPC	

000000046

POSSIBLE SAMPLE HAZARDS/REMARKS
POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF MICE"

000046

SAMPLE ANALYSIS SDGH K0270

			Preservation	COOL 4C	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
			Type of Container	aG	G/P	G/P	aG	aG	aG				
			No. of Container(s)	1	1	0	0	0	0				
			Volume	250mL	5g	15g	50g	50g	50g				
				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										
J11925	OTHER SOLID	03-23-06	0904	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD Date/Time 3-24-06 1200	Received By/Stored In EAS LOCKED STORAGE Date/Time 3-24-06 1200	
Relinquished By/Removed From EAS LOCKED STORAGE 03-27-06 Date/Time 0900	Received By/Stored In TR Edmundson 3-27-06 0900	
Relinquished By/Removed From TR Edmundson 3-27-06 1500 Date/Time WCH	Received By/Stored In FED EX Date/Time	
Relinquished By/Removed From FED EX Date/Time	Received By/Stored In FED EX 3/28/06 10:15 Date/Time	
Relinquished By/Removed From FEDEX Date/Time 4/7/06 16:00	Received By/Stored In FEDEX Date/Time	
Relinquished By/Removed From FED EX 4-8-06 1015 Date/Time	Received By/Stored In 4-8-06 10:15 Date/Time	

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134
mwj 3/29/06

SDGH K0270

Matrix *
Su=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W=Water
O=Oil
Air=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
Li=Liquid
Ve=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: K0270		
VALIDATOR: TLI		LAB: LLI		DATE: 9/10/06	
			SDG: K0270		
ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)
SAMPLES/MATRIX					
J11910	J11911	J11912	J11913	J11914	J11916	J11917
J11918	J11920	J11921	J11922	J11923	J11924	J11925
					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: di-n-butylphthalate - U at RQL - all dates

no FB

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/MSD - J all except 2,4,6-trichlorophenol

Surr nitrobenzene assoc - J in → 10, 11, 13, 14, 17, 18, 21, 22, 24
nitrobenzene assoc - R in → 16
2 Fluorobiphenyl assoc - J in → 10, 11, 13, 14, 16, 17, 18, 21, 22, 23, 24

* See comment 9

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 <2X – J all

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: all over

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:

Comments:

Surr - Terphyl assoc - 16, - J

Surr - phenol assoc - 10, 11, 12, 13, 14, 16, 17, 18, 21, 22, 24 - J

Surr - Fluorophenol assoc - 10, 11, 12, 13, 14, 18, 21, 22, 23, 24, 25 - J

Surr - Fluorophenol assoc - 16, 17 - R

Surr - 2,4,6 tribromophenol - 16, 17, - J

LCS - all but 5 over - J. all (but the 5)

Date: 11 September 2006
To: Washington Closure Hanford (technical representative)
From: TechLaw, Inc.
Project: 100 Area and 300 Area Component of the RCBRA Sediment & Tissue
Subject: Pesticide/PCB - Data Package No. K0270-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. K0270 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	Analysis
J11910	3/22/06	Solid	C	See note 1
J11911	3/22/06	Solid	C	See note 1
J11912	3/23/06	Solid	C	See note 1
J11913	3/23/06	Solid	C	See note 1
J11914	3/23/06	Solid	C	See note 1
J11916	3/21/06	Solid	C	See note 1
J11917	3/21/06	Solid	C	See note 1
J11918	3/22/06	Solid	C	See note 1
J11920	3/22/06	Solid	C	See note 1
J11921	3/22/06	Solid	C	See note 1
J11922	3/22/06	Solid	C	See note 1
J11923	3/22/06	Solid	C	See note 1
J11924	3/22/06	Solid	C	See note 1
J11925	3/23/06	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 or equal to twice 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".

Per WCH instructions, the holding time was counted from receipt of the samples at Lionville Laboratories Inc. (4/8/06) instead of the date of sample collection (3/21/06 through 3/23/06). Using the sample collection date would have resulted in the sample results being either qualified as estimates "J" or rejected "R".
Using the LLI sample receipt date, 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 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.

<u>Field Blanks</u>

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 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 duplicate recoveries outside QC limits (23% & 26%), all PCB results were qualified as estimates and flagged "J".

Due to matrix spike and matrix spike duplicate recoveries outside QC limits, all endrin aldehyde (13% & 3%), endosulfan sulfate (38% & 31%) and endrin ketone (49% & 44%) results were qualified as estimates and flagged "J".

Due to a matrix spike duplicate recovery outside QC limits (36%), all methoxychlor results were qualified as estimates and flagged "J".

Due to LCS recoveries outside QC limits, all endrin aldehyde (23%), endosulfan sulfate (22%) and endrin ketone (38%) 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".

Due to RPDs outside QC limits, all beta-BHC (43%), endrin aldehyde (125%) and methoxychlor (69%) results were qualified as estimates and flagged "J".

Due to RPDs outside QC limits (120% & 114%), all PCB 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 validation statement of work, no qualification is required.

- **Completeness**

Data Package No. K0270 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 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 duplicate recoveries outside QC limits (23% & 26%), all PCB results were qualified as estimates and flagged "J".
- Due to matrix spike and matrix spike duplicate recoveries outside QC limits, all endrin aldehyde (13% & 3%), endosulfan sulfate (38% & 31%) and endrin ketone (49% & 44%) results were qualified as estimates and flagged "J".
- Due to a matrix spike duplicate recovery outside QC limits (36%), all methoxychlor results were qualified as estimates and flagged "J".
- Due to LCS recoveries outside QC limits, all endrin aldehyde (23%), endosulfan sulfate (22%) and endrin ketone (38%) results were qualified as estimates and flagged "J".
- Due to RPDs outside QC limits, all beta-BHC (43%), endrin aldehyde (125%) and methoxychlor (69%) results were qualified as estimates and flagged "J".
- Due to RPDs outside QC limits (120% & 114%), all PCB 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.

All undetected 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: K0270	REVIEWER: TLI	Project: RCBRA	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Toxaphene	J	All	No MS/MSD/LCS
All PCBs	J	All	MS/MSD recovery
Endrin aldehyde Endosulfan sulfate Endrin ketone	J	All	MS/MSD recovery
Methoxychlor	J	All	MSD recovery
Endrin aldehyde Endosulfan sulfate Endrin ketone	J	All	LCS recovery
Beta-BHC Endrin aldehyde Methoxychlor	J	All	RPD
All PCBs	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

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

Project: WASHINGTON CLOSURE HANFORD
Laboratory: LLI SDG: K0270

Sample Number		J11910		J11911		J11912		J11913		J11914		J11916		J11917		J11918		J11920		J11921	
Remarks																					
Sample Date		3/22/06		3/22/06		3/23/06		3/23/06		3/23/06		3/21/06		3/21/06		3/22/06		3/22/06		3/22/06	
Extraction Date		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06	
Analysis Date		5/16/06		5/16/06		5/16/06		5/16/06		5/17/06		5/17/06		5/17/06		5/17/06		5/17/06		5/17/06	
PCB	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aroclor-1016		180	UJ	180	UJ	200	UJ	190	UJ	170	UJ	160	UJ	180	UJ	150	UJ	190	UJ	180	UJ
Aroclor-1221		180	UJ	180	UJ	200	UJ	190	UJ	170	UJ	160	UJ	180	UJ	150	UJ	190	UJ	180	UJ
Aroclor-1232	16.5	180	UJ	180	UJ	200	UJ	190	UJ	170	UJ	160	UJ	180	UJ	150	UJ	190	UJ	180	UJ
Aroclor-1242	16.5	180	UJ	180	UJ	200	UJ	190	UJ	170	UJ	160	UJ	180	UJ	150	UJ	190	UJ	180	UJ
Aroclor-1248		180	UJ	180	UJ	200	UJ	190	UJ	170	UJ	160	UJ	180	UJ	150	UJ	190	UJ	180	UJ
Aroclor-1254	16.5	180	UJ	180	UJ	200	UJ	190	UJ	170	UJ	160	UJ	180	UJ	150	UJ	190	UJ	180	UJ
Aroclor-1260	16.5	180	UJ	180	UJ	200	UJ	190	UJ	170	UJ	160	UJ	180	UJ	150	UJ	190	UJ	180	UJ

Sample Number		J11910		J11911		J11912		J11913		J11914		J11916		J11917		J11918		J11920		J11921	
Remarks																					
Sample Date		3/22/06		3/22/06		3/23/06		3/23/06		3/23/06		3/21/06		3/21/06		3/22/06		3/22/06		3/22/06	
Extraction Date		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06		4/20/06	
Analysis Date		5/18/06		5/18/06		5/18/06		5/18/06		5/18/06		5/18/06		5/18/06		5/18/06		5/18/06		5/18/06	
Pesticide	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Alpha-BHC	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
Gamma-BHC (Lindane)	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
Beta-BHC	5	18	UJ	18	UJ	20	UJ	19	UJ	17	UJ	16	UJ	18	UJ	15	UJ	19	UJ	18	UJ
Heptachlor	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
Delta-BHC	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
Aldrin	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
Heptachlor Epoxide	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
Endosulfan I	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
Dieldrin	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
4,4'-DDE	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
Endrin	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
Endosulfan II	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
4,4'-DDD	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
Endosulfan Sulfate	5	18	UJ	18	UJ	20	UJ	19	UJ	17	UJ	16	UJ	18	UJ	15	UJ	19	UJ	18	UJ
4,4'-DDT	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
Methoxychlor	5	18	UJ	18	UJ	20	UJ	19	UJ	17	UJ	16	UJ	18	UJ	15	UJ	19	UJ	18	UJ
Endrin Ketone	5	18	UJ	18	UJ	20	UJ	19	UJ	17	UJ	16	UJ	18	UJ	15	UJ	19	UJ	18	UJ
Endrin Aldehyde	5	18	UJ	18	UJ	20	UJ	19	UJ	17	UJ	16	UJ	18	UJ	15	UJ	19	UJ	18	UJ
alpha-Chlordane	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
gamma-Chlordane	5	18	U	18	U	20	U	19	U	17	U	16	U	18	U	15	U	19	U	18	U
Toxaphene	5	180	UJ	180	UJ	200	UJ	190	UJ	170	UJ	160	UJ	180	UJ	150	UJ	190	UJ	180	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

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

Project: WASHINGTON CLOSURE HANFORD

Laboratory: LLI SDG: K0445

Sample Number		J11922		J11923		J11924		J11925												
Remarks																				
Sample Date		3/22/06		3/22/06		3/22/06		3/23/06												
Extraction Date		4/20/06		4/20/06		4/20/06		4/20/06												
Analysis Date		5/17/06		5/17/06		5/17/06		5/17/06												
PCB	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aroclor-1016		150	UJ	180	UJ	170	UJ	180	UJ											
Aroclor-1221		150	UJ	180	UJ	170	UJ	180	UJ											
Aroclor-1232	16.5	150	UJ	180	UJ	170	UJ	180	UJ											
Aroclor-1242	16.5	150	UJ	180	UJ	170	UJ	180	UJ											
Aroclor-1248		150	UJ	180	UJ	170	UJ	180	UJ											
Aroclor-1254	16.5	150	UJ	180	UJ	170	UJ	180	UJ											
Aroclor-1260	16.5	150	UJ	180	UJ	170	UJ	180	UJ											

Sample Number		J11922		J11923		J11924		J11925												
Remarks																				
Sample Date		3/22/06		3/22/06		3/22/06		3/23/06												
Extraction Date		4/20/06		4/20/06		4/20/06		4/20/06												
Analysis Date		5/18/06		5/18/06		5/18/06		5/18/06												
Pesticide	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Alpha-BHC	5	15	U	18	U	17	U	18	U											
Gamma-BHC (Lindane)	5	15	U	18	U	17	U	18	U											
Beta-BHC	5	15	UJ	18	UJ	17	UJ	18	UJ											
Heptachlor	5	15	U	18	U	17	U	18	U											
Delta-BHC	5	15	U	18	U	17	U	18	U											
Aldrin	5	15	U	18	U	17	U	18	U											
Heptachlor Epoxide	5	15	U	18	U	17	U	18	U											
Endosulfan I	5	15	U	18	U	17	U	18	U											
Dieldrin	5	15	U	18	U	17	U	18	U											
4,4'-DDE	5	15	U	18	U	17	U	18	U											
Endrin	5	15	U	18	U	17	U	18	U											
Endosulfan II	5	15	U	18	U	17	U	18	U											
4,4'-DDD	5	15	U	18	U	17	U	18	U											
Endosulfan Sulfate	5	15	UJ	18	UJ	17	UJ	18	UJ											
4,4'-DDT	5	15	U	18	U	17	U	18	U											
Methoxychlor	5	15	UJ	18	UJ	17	UJ	18	UJ											
Endrin Ketone	5	15	UJ	18	UJ	17	UJ	18	UJ											
Endrin Aldehyde	5	15	UJ	18	UJ	17	UJ	18	UJ											
alpha-Chlordane	5	15	U	18	U	17	U	18	U											
gamma-Chlordane	5	15	U	18	U	17	U	18	U											
Toxaphene	5	150	UJ	180	UJ	170	UJ	180	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.

000012

PCBs by GC

Report Date: 06/01/06 11:35

RFW Batch Number: 0604L725 Client: TNUHANFORD RC-047 K0270 Work Order: 11343606001 Page: 1

	Cust ID:	J11910	J11910	J11910	J11911	J11912	J11913
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		86 %	84 %	21 * %	81 %	79 %	80 %
Decachlorobiphenyl		104 %	106 %	27 * %	100 %	94 %	95 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		180 U J	92 %	23 * %	180 U J	200 U J	190 U J
Aroclor-1221		180 U	160 U	180 U	180 U	200 U	190 U
Aroclor-1232		180 U	160 U	180 U	180 U	200 U	190 U
Aroclor-1242		180 U	160 U	180 U	180 U	200 U	190 U
Aroclor-1248		180 U	160 U	180 U	180 U	200 U	190 U
Aroclor-1254		180 U	160 U	180 U	180 U	200 U	190 U
Aroclor-1260		180 U	95 %	26 * %	180 U	200 U	190 U

	Cust ID:	J11914	J11916	J11917	J11918	J11920	J11921
Sample Information	RFW#:	005	006	007	008	009	010
	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		80 %	81 %	100 %	35 %	90 %	90 %
Decachlorobiphenyl		99 %	93 %	106 %	40 %	100 %	103 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		170 U J	160 U J	180 U J	150 U J	190 U J	180 U J
Aroclor-1221		170 U	160 U	180 U	150 U	190 U	180 U
Aroclor-1232		170 U	160 U	180 U	150 U	190 U	180 U
Aroclor-1242		170 U	160 U	180 U	150 U	190 U	180 U
Aroclor-1248		170 U	160 U	180 U	150 U	190 U	180 U
Aroclor-1254		170 U	160 U	180 U	150 U	190 U	180 U
Aroclor-1260		170 U	160 U	180 U	150 U	190 U	180 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

R 9/10/06 [illegible]

000000006

0000013

PCBs by GC

RFW Batch Number: 0604L725 Client: TNUHANFORD RC-047 K0270 Work Order: 11343606001 Page: 2

Report Date: 06/01/06 11:35

	Cust ID:	J11922	J11923	J11924	J11925	PBLKHD	PBLKHD BS
Sample Information	RFW#:	011	012	013	014	06LE0303-MB1	06LE0303-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		90 %	90 %	88 %	72 %	95 %	97 %
Decachlorobiphenyl		100 %	99 %	104 %	88 %	104 %	104 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		150 U J	180 U J	170 U J	180 U J	13 U	79 %
Aroclor-1221		150 U	180 U	170 U	180 U	13 U	13 U
Aroclor-1232		150 U	180 U	170 U	180 U	13 U	13 U
Aroclor-1242		150 U	180 U	170 U	180 U	13 U	13 U
Aroclor-1248		150 U	180 U	170 U	180 U	13 U	13 U
Aroclor-1254		150 U	180 U	170 U	180 U	13 U	13 U
Aroclor-1260		150 U	180 U	170 U	180 U	13 U	90 %

000014

000000008

9/10/06

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

Pesticide/PCBs by GC, CLP List

Report Date: 06/14/06 13:46

RFW Batch Number: 0604L725 Client: TNUHANFORD RC-047 K0270 Work Order: 11343606001 Page: 1

Sample Information	Cust ID:	J11910	J11910	J11910	J11911	J11912	J11913
	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	4.00	4.00	4.00	4.00	4.00	4.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	123 * %	93 %	124 * %	118 %	104 %	166 * %
	Decachlorobiphenyl	134 * %	105 %	121 %	110 %	106 %	158 * %
		fl	fl	fl	fl	fl	fl
Alpha-BHC		18 U	76 %	95 %	18 U	20 U	19 U
gamma-BHC (Lindane)		18 U	79 %	95 %	18 U	20 U	19 U
Beta-BHC		18 UJ	81 %	126 %	18 UJ	20 UJ	19 UJ
Heptachlor		18 U	85 %	98 %	18 U	20 U	19 U
Delta-BHC		18 U	57 %	65 %	18 U	20 U	19 U
Aldrin		18 U	82 %	96 %	18 U	20 U	19 U
Heptachlor epoxide		18 U	82 %	90 %	18 U	20 U	19 U
gamma-Chlordane		18 U	80 %	85 %	18 U	20 U	19 U
Endosulfan I		18 U	84 %	93 %	18 U	20 U	19 U
alpha-Chlordane		18 U	85 %	93 %	18 U	20 U	19 U
4,4'-DDE		18 U	83 %	93 %	18 U	20 U	19 U
Dieldrin		18 U	79 %	89 %	18 U	20 U	19 U
Endrin		18 U	84 %	92 %	18 U	20 U	19 U
4,4'-DDD		18 U	80 %	89 %	18 U	20 U	19 U
Endosulfan-II		18 U	64 %	65 %	18 U	20 U	19 U
4,4'-DDT		18 U	80 %	88 %	18 U	20 U	19 U
Endrin aldehyde		18 UJ	13 * %	3 * %	18 UJ	20 UJ	19 UJ
Endosulfan sulfate		18 UJ	38 * %	31 * %	18 UJ	20 UJ	19 UJ
Methoxychlor		18 UJ	74 %	36 * %	18 UJ	20 UJ	19 UJ
Endrin ketone		18 UJ	49 * %	44 * %	18 UJ	20 UJ	19 UJ
Toxaphene		180 UJ	160 U	180 U	180 UJ	200 UJ	190 UJ

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

9/10/06

000000006

000015

Pesticide/PCBs by GC, CLP List — Report Date: 06/14/06 13:46

RFW Batch Number: 0604L725 — Client: TNUHANFORD RC-047 K0270 — Work Order: 11343606001 — Page: 2

	Cust ID:	J11914	J11916	J11917	J11918	J11920	J11921
Sample Information	RFW#:	005	006	007	008	009	010
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	4.00	4.00	4.00	4.00	4.00	4.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	121 * %	112 %	131 * %	44 %	131 * %	178 * %
	Decachlorobiphenyl	113 %	104 %	119 %	43 %	116 %	166 * %
		fl	fl	fl	fl	fl	fl
Alpha-BHC		17 U	16 U	18 U	15 U	19 U	18 U
gamma-BHC (Lindane)		17 U	16 U	18 U	15 U	19 U	18 U
Beta-BHC		17 U J	16 U J	18 U J	15 U J	19 U J	18 U J
Heptachlor		17 U	16 U	18 U	15 U	19 U	18 U
Delta-BHC		17 U	16 U	18 U	15 U	19 U	18 U
Aldrin		17 U	16 U	18 U	15 U	19 U	18 U
Heptachlor epoxide		17 U	16 U	18 U	15 U	19 U	18 U
gamma-Chlordane		17 U	16 U	18 U	15 U	19 U	18 U
Endosulfan I		17 U	16 U	18 U	15 U	19 U	18 U
alpha-Chlordane		17 U	16 U	18 U	15 U	19 U	18 U
4,4'-DDE		17 U	16 U	18 U	15 U	19 U	18 U
Dieldrin		17 U	16 U	18 U	15 U	19 U	18 U
Endrin		17 U	16 U	18 U	15 U	19 U	18 U
4,4'-DDD		17 U	16 U	18 U	15 U	19 U	18 U
Endosulfan II		17 U	16 U	18 U	15 U	19 U	18 U
4,4'-DDT		17 U	16 U	18 U	15 U	19 U	18 U
Endrin aldehyde		17 U J	16 U J	18 U J	15 U J	19 U J	18 U J
Endosulfan sulfate		17 U J	16 U	18 U	15 U	19 U	18 U
Methoxychlor		17 U J	16 U	18 U	15 U	19 U	18 U
Endrin ketone		17 U J	16 U	18 U	15 U	19 U	18 U
Toxaphene		170 U J	160 U	180 U	150 U	190 U	180 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

9/10/06

000000007

000016

Pesticide/PCBs by GC, CLP List Report Date: 06/14/06 13:46

RFW Batch Number: 0604L725 Client: TNUHANFORD RC-047 K0270 Work Order: 11343606001 Page: 3

	Cust ID:	J11922	J11923	J11924	J11925	PBLKHD	PBLKHD RE
Sample Information	RFW#:	011	012	013	014	06LE0303-MB1	06LE0303-MB1
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	4.00	4.00	4.00	4.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	159 * %	167 * %	177 * %	145 * %	83 %	106 %
	Decachlorobiphenyl	148 * %	152 * %	162 * %	135 * %	80 %	98 %
		fl	fl	fl	fl	fl	fl
Alpha-BHC		15 U	18 U	17 U	18 U	0.33 U	0.33 U
gamma-BHC (Lindane)		15 U	18 U	17 U	18 U	0.33 U	0.33 U
Beta-BHC		15 U J	18 U J	17 U J	18 U J	0.33 U	0.33 U
Heptachlor		15 U	18 U	17 U	18 U	0.33 U	0.33 U
Delta-BHC		15 U	18 U	17 U	18 U	0.33 U	0.33 U
Aldrin		15 U	18 U	17 U	18 U	0.33 U	0.33 U
Heptachlor epoxide		15 U	18 U	17 U	18 U	0.33 U	0.33 U
gamma-Chlordane		15 U	18 U	17 U	18 U	0.33 U	0.33 U
Endosulfan I		15 U	18 U	17 U	18 U	0.33 U	0.33 U
alpha-Chlordane		15 U	18 U	17 U	18 U	0.33 U	0.33 U
4,4'-DDE		15 U	18 U	17 U	18 U	0.33 U	0.33 U
Dieldrin		15 U	18 U	17 U	18 U	0.33 U	0.33 U
Endrin		15 U	18 U	17 U	18 U	0.33 U	0.33 U
4,4'-DDD		15 U	18 U	17 U	18 U	0.33 U	0.33 U
Endosulfan II		15 U	18 U	17 U	18 U	0.33 U	0.33 U
4,4'-DDT		15 U	18 U	17 U	18 U	0.33 U	0.33 U
Endrin aldehyde		15 U J	18 U J	17 U J	18 U J	0.33 U	0.33 U
Endosulfan sulfate		15 U	18 U	17 U	18 U	0.33 U	0.33 U
Methoxychlor		15 U	18 U	17 U	18 U	0.33 U	0.33 U
Endrin ketone		15 U	18 U	17 U	18 U	0.33 U	0.33 U
Toxaphene		150 U	180 U	170 U	180 U	3.3 U	3.3 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

9/10/06

6/14/06

000017

000000008

Sample Information	Cust ID:	PBLKHD BS		PBLKHD BS	
	RFW#:	06LE0303-MB1		06LE0303-MB1	
	Matrix:	SOIL		SOIL	
	D.F.:	1.00		1.00	
	Units:	UG/KG		UG/KG	
Surrogate: Tetrachloro-m-xylene		107	%	106	%
Decachlorobiphenyl		100	%	96	%
Alpha-BHC		101	%	96	%
gamma-BHC (Lindane)		102	%	104	%
Beta-BHC		92	%	99	%
Heptachlor		103	%	100	%
Delta-BHC		82	%	88	%
Aldrin		105	%	103	%
Heptachlor epoxide		105	%	101	%
gamma-Chlordane		103	%	101	%
Endosulfan I		110	%	103	%
alpha-Chlordane		101	%	101	%
4,4'-DDE		94	%	104	%
Dieldrin		106	%	105	%
Endrin		108	%	106	%
4,4'-DDD		125 *	%	106	%
Endosulfan II		72	%	103	%
4,4'-DDT		64	%	105	%
Endrin aldehyde		23 *	%	96	%
Endosulfan sulfate		22 *	%	101	%
Methoxychlor		60	%	100	%
Endrin ketone		38 *	%	103	%
Toxaphene		3.3	U	3.3	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

6/10/06

6/14/06

000018

000000000

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-051
LVL #: 0604L725
SDG/SAF # K0270/RC-051

W.O. #: 11343-606-001-9999-00
Date Received: 04-08-2006

POLYCHLORINATED BIPHENYL

Fourteen (14) solid samples were collected on 03-21,22,23-2006.

The samples and their associated QC samples were extracted on 04-20-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 05-18-2006. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082. All soil samples are reported on a dry weight base unless requested by the client, required by the method or noted otherwise.

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. Samples were analyzed within required holding time.

2. The samples were received and extracted outside of recommended hold time.

3. The samples and their associated QC samples received Florisil, Silica Gel, Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3620B, 3630C, 3660A and 3665A respectively.

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

5. Two (2) of thirty-six (36) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR #06GC174) has been enclosed

6. All blank spike recoveries were within acceptance criteria.

7. Two (2) of four (4) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR #06GC174) has been enclosed.

8. The results were reported on a wet-weight basis.

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 24 pages.

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

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

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

11. 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.

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.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/2/06
Date

kim\r:\group\data\pest\tnu hanford\0604-725.pst

LvLI
LIONVILLE LABORATORY INC.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 066C174

Initiator: KLW
Date: 6/1/96
Client: TN

Batch: 0604L726
Samples: 001 msd
Method: SW846/MCAWW/CLP

Parameter: PCB
Matrix: SOLID
Prep Batch: 06LR0303

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)

Spike and surrogate recoveries were low in sample 001 msd.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

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

Other Description:

Narrate - ms and BS spike and surr recoveries are w/in acceptance criteria. No impact to sample data.

6/11/96

4. Project Manager Instructions...signature/date: _____

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

5. Final Action...signature/date: _____ 6/11/96

Other Explanation:

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

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

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
__	X Project Mgr: Stone/Johnson	__	__ GC/LC: Kiger
__	__ Data Management: Stilwell	__	__ MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0604L725
SDG/SAF # K0270/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 04-08-2006

CHLORINATED PESTICIDES

Fourteen (14) solid samples were collected on 03-21,22,23-2006.

The samples and their associated QC samples were extracted on 04-20-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 05-16,17,18,19-2006. 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. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. Samples were analyzed within required holding time.
2. The samples were extracted 13-15 days outside of recommended hold time.
3. All samples results were reported on a wet-weight basis.
4. The samples and their associated QC samples received a Florisil cleanup according to Lionville Laboratory SOPs based on SW846 method 3620B.
5. The method blanks were below the reporting limits for all target compounds.
6. Eighteen (18) of forty (40) surrogate recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR #06GC199) has been enclosed.
7. Four (4) of forty (40) blank spike recoveries were outside acceptance criteria.
8. The samples required instrument dilutions due to chromatographic anomalies.
9. Seven (7) of forty (40) matrix spike recoveries were outside acceptance criteria.
10. All samples required a 4-fold dilution.

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 26 pages.

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

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

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/15/06
Date

kim\r:\group\data\pest\tnu hanford\0604-725.pst

LvLI
LIONVILLE LABORATORY INC.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 06GC195

Initiator: John Lewis
Date: 6/14/06
Client: TW

Batch: 06042725
Samples: Bill
Method: SW846/MCAWW/CLP/

Parameter: Pest.
Matrix: Mouse
Prep Batch: 06LE030

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) Samples extracted 13-15 Past Hold
(2) Surrogates elevated in some samples. - No target analytes detected ≥ LOD
(3) 4 compounds output control in blank & blk due to thermal cleaning - pre florisil cleanup fractions were within acceptance criteria.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description:

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

4. Project Manager Instructions...signature/date: _____

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

5. Final Action...signature/date: 6/14/06 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
__	X Project Mgr: Stone/Johnson	__	__ GC/LC: Kiger
__	__ Data Management: Stilwell	__	__ MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

Lionville Laboratory Use Only

06041725

Custody Transfer Record/Lab Work Request

Page 1 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNU Hanford RC-047

Est. Final Proj. Sampling Date:

Project #: 113113-000-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: Orlitta Johnson

QC: Spec. Del: Std. TAT: 30 Days

Date Rec'd: 4-8-06 Date Due: 5/8/06

Refrigerator #			A														
#/Type Container	Liquid / Solid		1 gl														
Volume	Liquid / Solid		250														
Preservatives																	
ANALYSES REQUESTED →			ORGANIC: VOA	BNA	Pest/PCB	Herb	Pest			INORG: Metal	CN						
Lionville Laboratory Use Only				0625H	OPCB		0608H			METALS							

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	J11910	✓	✓	SO*	3.22.06	0835		X	X		X			X					
002	J11911					0945		X	X		X			X					
003	J11912				3.22.06	0745		X	X		X			X					
004	J11913					0815		X	X		X			X					
005	J11914					0934		X	X		X			X					
006	J11916				3.21.06	1400		X	X		X			X					
007	J11917					1440		X	X		X			X					
008	J11918				3.22.06	0745		X	X		X			X					
009	J11920					1100		X	X		X			X					
010	J11921					1155		X	X		X			X					

Special Instructions:

per Joan Kessner / Perform Metals, PCB, Pest, SVOC in this order as sample is available.

METALS(1) = HSL + B, Li, Mo, Si, Sn, Ti, U, P, Zr, Bi

DATE/REVISIONS:

* 1. Matrix Composed of Mice".

2.

3. 0608H

4. OPCB R

5.

6.

Relinquished by	Received by	Date	Time
[illegible]	D J Smith	4.8.06	10:15

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"			

ORIGINAL REWRITTEN

000026

00000008

Lionville Laboratory Use Only

0604L725

Custody Transfer Record/Lab Work Request

Page ___ of ___

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: THU Hanford RC-047

Est. Final Proj. Sampling Date:

Project #:

Project Contact/Phone #: Jeff Pegl

Lionville Laboratory Project Manager: Arlette Johnson

QC: ___ Dal: ___ TAT:

Date Rec'd: 4-8-06 Date Due:

Refrigerator #			A 2															
#/Type Container	Liquid / Solid		1a															
Volume	Liquid / Solid		250															
Preservatives			—															
ANALYSES REQUESTED →			ORGANIC: VOA	BNA	Pest/PCB	Herb	Pest			INORG: Metal	CN							
Lionville Laboratory Use Only				0625H	OPCB		6008H			METALS								

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb	Pest			Metal	CN					
011	J11922			SO	3-23-06	1345		X	X		X			X						
012	J11923					1427		X	X		X			X						
013	J11924				3-23-06	1457		X	X		X			X						
014	J11925				3-23-06	0904		X	X		X			X						

Special Instructions:

METALS = HSL + B, Li, Mo, Si, Sn, Ti, U, P, Bi, Zr

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time
Fed Ex	D Smith	4-8-06	10:15

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

0000027

0000000009

Washington Closure Hanford

Collector: TILLER, B. / TRK / JFB	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days		
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-K RIPARIAN #4 OFFAL K0270 (7402)	SAF No.: RC-047	Air Quality ☐
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060322		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 MICE"

SAMPLE ANALYSIS SDG# K0270

Preservation				COOL 4C *None*	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container				aG	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)				1	1	1	0	0	0	0			
Volume				250mL	2g	5g	15g	50g	50g	50g			
				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										
J11910	OTHER SOLID	03-22-06	0135	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 3-24-06 1200	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 3-24-06 1200
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 03-27-06 0900	Received By/Stored In:	Date/Time: 3-27-06 0900
Relinquished By/Removed From: WCH	Date/Time: 3-27-06 / 1500	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In:	Date/Time: 3/28/06 9:15
Relinquished By/Removed From:	Date/Time: 4/7/06 16:00	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time: 4-8-06 10:15	Received By/Stored In:	Date/Time: 4-8-06 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

mcm 3/29/06

SDG# K0270

Matrix *: SoSoil; SlSludge; SDSediment; SuSludge; W=Water; OsOil; A=Air; DSsDrum Solids; DLsDrum Liquids; T=Tissue; WIpWipe; L=Liquid; Ve 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)

0000028

0000000

Washington Closure Hanford

Collector TILLER, B.	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-K RIPARIAN #5 OFFAL K0270 (7407)		SAF No. RC-047
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060322		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9N

Air Quality ☐

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF MICE"

SAMPLE ANALYSIS

SDG# K0270

Preservation	COOL 4C None	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	250mL	2g	5g	15g	50g	50g	50g			
	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									
J11911	OTHER SOLID	03-22-06	0745	X	X	X						

000029

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From JAMES BERNHARD Date/Time 1200 3-27-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1700 3-27-06
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 03-27-06 0900	Received By/Stored In Date/Time 3-27-06 0900
Relinquished By/Removed From WCH Date/Time 3-27-06 1500	Received By/Stored In FED EX Date/Time
Relinquished By/Removed From FED EX Date/Time	Received By/Stored In Date/Time 3/28/06 10:15
Relinquished By/Removed From Date/Time 4/7/06 16:00	Received By/Stored In FED EX Date/Time
Relinquished By/Removed From FED EX Date/Time 4-8-06 10:15	Received By/Stored In Date/Time 4-8-06 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then warship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma – Sb125, Ru106, Cs7, Co134

MUM
3/29/6

SDG# K0270

Matrix *

SeSeal
SEdSediment
SOSoil
SlSludge
W = Water
OOil
AAir
DSDrum Solids
DLDrum Liquids
TTissue
WIPWipe
LLiquid
VVegetation
XOther

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

Collector: TILLER, B. / JCB / TRK	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: UPRIVER REF. RIPARIAN #12 OFFAL K0270(7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060322	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 MICE"

000030

SAMPLE ANALYSIS

SDG# K0270

Preservation	Cool 4C ~~None~~ Add HCl	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	250mL	3g	5g	15g	50g	50g	50g			
	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										
J11912	OTHER SOLID	MAR 23 2006	0745	X	X	X							

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
ECR JAMES BERNHARD	12 3-24-06	EAS LOCKED STORAGE	12 3-24-06
EAS LOCKED STORAGE	03-27-06 0900	T.R. Edmundson	3-27-06 0900
T.R. Edmundson	3-27-06 1500	FED EX	
FED EX			3/28/06 10:15
	4/7/06 16:00	FED EX	
FED EX	4.8.06 / 10:15		4.8.06 / 10:15

Sign/Print Names

SPECIAL INSTRUCTIONS

NOTE: Eberline - perform Gamma Spec then ship bottle to Lionville Labs. If possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST, SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Ba7, Co134

MJM 3/29/6

SDG # K0270

Matrix *

Soil, SE=Sediment, SO=Solid, Sl=Sludge, W=Water, O=Oil, A=Air, DS=Drum Solids, DL=Drum Liquids, Tu=Tissue, Wi=Wipe, Li=Liquid, Ve=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

Collector: TILLER, B. / JCB / TCK	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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: UPRIVER REF. RIPARIAN #13 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322	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 MICE"

Preservation	COOL 4C ~~None~~ 1/8 82701	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	250mL	2g	5g	15g	50g	50g	50g			

SAMPLE ANALYSIS

SDG# K0270

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full Lim)	Carbon-14	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full Lim); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)			
J11913	OTHER SOLID	MAR 23 2006	0815	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	3-27-06 1200	EAS LOCKED STORAGE	3-27-06 1200
EAS LOCKED STORAGE	03-27-06 0900	I. L. Edmundson	3-27-06 0900
I. L. Edmundson	3-27-06 1500	FED EX	
FED EX		MW	3/28/06 9:15
Alex Kilewich	4/7/06 16:00	FED EX	
FED EX	4-8-06 10:15	D. Smith	4-8-06 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co 134

JKM
3/29/6

SDG# K0270

Matrix *

SoSoil
SEdSediment
SOSolid
SlSludge
WWater
OOil
AAir
DSDrum Solids
DLDrum Liquids
TiTissue
WiWipe
LiLiquid
VeVegetation
XOther

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

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

000031

0000031

Washington Closure Hanford

Collector TILLER, B. /TKK/JEE	Company Contact JOAN KESSNER	Telephone No. 375-4688 K0270	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location UPRIVER REF. RIPARIAN #16 OFFAL (7407)		SAF No. RC-047
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060322		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9N

Air Quality ☐

Data Turnaround 45 Days

000000814

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF MICE"

0000032

SAMPLE ANALYSIS

SDG# K0270

Preservation	COOL 4 C ~~None~~	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	1	0	0	0	0					
Volume	250mL	2g	5g	15g	50g	50g	50g					
	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									
J11914	OTHER SOLID	03-23-06	0934	X	X	X						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1200 3-24-06	EAS LOCKED STORAGE	1200 3-24-06
EAS LOCKED STORAGE	0900 03-27-06	JR Edmundson	3-27-06 0900
JR Edmundson	3-27-06 1500	FED EX	
FED EX		MM	3/28/06 10:15
Alex Kelly	4/7/06 16:00	FEDEX	
FEDEX	4-8-06 10:15	D. Smith	4-8-06 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

MM 3/29/6

SDG# K0270

Matrix *

SoSoil
SEnSediment
SOnSolid
SlnSludge
W = Water
OnOil
AnAir
DSnDrum Solids
DLnDrum Liquids
TnTissue
WnWipe
LnLiquid
VnVegetation
XnOther

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

Collector: TILLER, B. / JEB / TRK	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Compoonent of the RCBRA Sediment and Ti	Sampling Location: 100-H RIPARIAN #1 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A068322		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 MICE"

000033

SAMPLE ANALYSIS

SDG# K0270

Preservation	COOL 4C ~~None~~ ~~None~~ 8/8-2706	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	aG	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	0	0	0	0					
Volume	250mL	5g	15g	50g	50g	50g					
	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									
J11916	OTHER SOLID	03-21-06	1400	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1700 3-24-06	EAS LOCKED STORAGE	1700 3-24-06
EAS LOCKED STORAGE	03-27-06		3-27-06 0900
WCH	3-27-06 / 1500	FED EX	
FED EX			3/28/06 10:15
	4/7/06 16:00	FEDEX	
FED EX	4-8-06 / 10:15		4-8-06 / 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co184

mm 3/29/6

SDG# K0270

Matrix *: Se=Soil; SE=Sediment; SO=Solid; Sl=Sludge; W=Water; O=Oil; Ae=Air; DS=Drum Solids; DL=Drum Liquids; Te=Tissue; Wi=Wipe; Lq=Liquid; Ve=Vegetation; Xo=Other

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

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

000000015

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: TILLER, B. /TEK/JEB	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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-D RIPARIAN #2 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060322	Bill of Lading/Air Bill No.: SEE OSPC	

000000016

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF MICE"

000034

SAMPLE ANALYSIS

SDG# K0270

			Preservation	COOL 4C ~~Hexane~~ 1 Deerpo	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
			Type of Container	aG	G/P	G/P	aG	aG	aG				
			No. of Container(s)	1	1	0	0	0	0				
			Volume	250mL	5g	15g	50g	50g	50g				
				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										
J11917	OTHER SOLID	03-21-06	1440	X	X								

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: ECF JAMES BERNHARD	Received By/Stored In: ECF EAS LOCKED STORAGE	1700 3-24-06
Relinquished By/Removed From: EAS LOCKED STORAGE	Received By/Stored In: T.R. Edmundson T.R. Edmundson	0745 03-27-06
Relinquished By/Removed From: T.R. Edmundson T.R. Edmundson	Received By/Stored In: FED EX	3-27-06/1500
Relinquished By/Removed From: FED EX	Received By/Stored In: MJM	3/28/06 10:15
Relinquished By/Removed From: Alex Kelly	Received By/Stored In: FEDEX	4/7/06 16:00
Relinquished By/Removed From: Fed Ex	Received By/Stored In: D. Smith	4-8-06 / 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

Gamma - Sb125, Ru106, Ba7, Co134

MJM
3/29/6

SDG# K0270

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
W1=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 RECORD

Collector: TILLER, B. / TRK / JEG	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	Project Coordinator: KESSNER, JH
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-D RIPARIAN #3 OFFAL (7407)		SAF No.: RC-047
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060322		Bill of Lading/Air Bill No.: SEE OSPC

Price Code: 9N

Air Quality ☐

Data Turnaround: 45 Days

000000017

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF MICE"

000035

SAMPLE ANALYSIS

SDG# K0270

			Preservation	COOL 4C ~~None~~	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
			Type of Container	aG	G/P	G/P	aG	aG	aG				
			No. of Container(s)	1	1	0	0	0	0				
			Volume	250mL	5g	15g	50g	50g	50g				
				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										
J11918	OTHER.SOLID	03-22-06	0745	X	X								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD, Date/Time: 1200 3-24-06	Received By/Stored In: EAS LOCKED STORAGE Fc 2	Date/Time: 1200 3-24-06	
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time: 0900 03-27-06	Received By/Stored In: J.R. Blanchard	Date/Time: 3-27-06 0900	
Relinquished By/Removed From: J.R. Blanchard, Date/Time: 3-27-06/1500	Received By/Stored In: FED EX	Date/Time	
Relinquished By/Removed From: FED EX	Date/Time	Received By/Stored In:	Date/Time: 3/28/06 10:15
Relinquished By/Removed From:	Date/Time: 4/7/06 16:00	Received By/Stored In: FEDEX	Date/Time
Relinquished By/Removed From: FED EX	Date/Time: 4-8-06 10:15	Received By/Stored In:	Date/Time: 4-8-06 10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Cs134

mm 3/29/06

SDG# K0270

Matrix *

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

Collector: TILLER, B. /TPK/JCG	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	Project Coordinator: KESSNER, JH	Price Code: 9N	Data Turnaround: 45 Days
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: 100-F RIPARIAN #7 OFFAL (7407)		SAF No.: RC-047	Air Quality ☐	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX		
Shipped To: EBERLINE SERVICES/ LIONVILLE	Offsite Property No.: A060322		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 MICE"

Preservation	COOL 4C	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	0	0	0	0					
Volume	250mL	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)					
SDG# K0270											
Sample No.	Matrix *	Sample Date	Sample Time								
J11920	OTHER SOLID	MAR 22 2006	1100	X	X						

930000 (00036)

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1700 3-24-06	EAS LOCKED STORAGE	1200 3-24-06
EAS LOCKED STORAGE	3-27-06 0900	EAS LOCKED STORAGE	3-27-06 0900
T.P. Edmundson WCH / T.P. Edmundson	3-27-06 / 1500	FED EX	
FED EX		Fun	3/28/06 10:15
Alex Kelley	4/7/06 16:00	FEDEX	
FEDEX	4-8-06 10:15	D. Smith	4-8-06 10:15

EAS LOCKED STORAGE

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

Gamma- Sb125, Ru106, Be7, Co134
mcm
3/29/4

SDG# K0270

Matrix *
S=Soil
SB=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
W/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)

000000018

Washington Closure Hanford — CHAIN OF CUSTODY/HAZARDOUS MATERIAL DISPOSAL REQUEST

Collector: TILLER, B. /TEK/ [illegible]	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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-H RIPARIAN #8 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322	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 MICE"

Preservation	COOL 4C	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	1	0	0	0					
Volume	250mL	5g	15g	50g	50g	50g					

SAMPLE ANALYSIS — SDG# K0270

Sample No.	Matrix *	Sample Date	Sample Time	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)				
J11921	OTHER SOLID	MAR 22 2006	1155	X	X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1200 3-24-06	EAS LOCKED STORAGE	1200 3-24-06
JAMES BERNHARD / EAS LOCKED STORAGE	0500 03-27-06	T.E. Blomenkamp	3-27-06 0900
T.E. Blomenkamp	3-27-06 / 0500	FED EX	
FED EX		MLW	03/28/06 10:15
Alex Lemmel	4/7/06 16:00	FEDEX	
FED EX	4-8-06 / 1015	W. Smith	4-8-06 / 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then ship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134
mm 3/29/6

SDG# K0270

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
Ve=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)

0000037

61000000

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: TILLER, B. / TRK / TEB	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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-H RIPARIAN #9 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060322	Bill of Lading/Air Bill No.: SEB OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage
COOL 4C "MATRIX COMPOSED OF MICE"

000038

SAMPLE ANALYSIS

SDGH K0270

Preservation	COOL 4C ~~None~~ 1/B 23706	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	aG	G/P	G/P	aG	aG	aG						
No. of Container(s)	1	1	0	0	0	0						
Volume	250mL	5g	15g	50g	50g	50g						
Sample No.	Matrix *	Sample Date	Sample Time	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)				
J11922	OTHER SOLID	03-27-06	1345	X	X								

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From: JAMES BERNHARD	JCB	3-24-06 1200	EAS LOCKED STORAGE	JCB 3-24-06 1200
Relinquished By/Removed From: EAS LOCKED STORAGE	[illegible]	03-27-06 0500	[illegible]	3-27-06 0900
Relinquished By/Removed From: WCH	JR Edmundson	3-27-06 1500	FED EX	
Relinquished By/Removed From: FED EX			MM	3/28/06 10:15
Relinquished By/Removed From: Alex Kellum		4/7/06 16:00	FEDEX	
Relinquished By/Removed From: FedEx		4.8.06 10:15	W. J. Smith	4.8.06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma-Sb125, Ru106, Be7, Co134

MM
3/29/06

SDGH K0270

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
Ve=Vegetation
X=Other

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

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

000000020

Washington Closure Hanford

CHAIN OF CUSTODY RECORD

Collector: TILLER, B. / JEB / JEK	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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-D RIPARIAN #10 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322		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 MICE"

000039

SAMPLE ANALYSIS
SDG# K0270

			Preservation	Cool 4C then 4N HNO3	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
			Type of Container	aG	G/P	G/P	aG	aG	aG				
			No. of Container(s)	1	1	0	0	0	0				
			Volume	250mL	5g	15g	50g	50g	50g				
				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										
J11923	OTHER SOLID	MAR 22 2006	1427	X	X								

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	JAMES BERNHARD	1700 3-24-06	EAS LOCKED STORAGE	1700 3-24-06
Relinquished By/Removed From	EAS LOCKED STORAGE	0900 03-28-06	[illegible]	3-27-06 0900
Relinquished By/Removed From	WCH	3-27-06 / 1500	FED EX	
Relinquished By/Removed From	FED EX		[illegible]	3/28/06 10:15
Relinquished By/Removed From	[illegible]	4/7/06 16:00	FEDEX	
Relinquished By/Removed From	FED EX	4-8-06 1015	[illegible]	4-8-06 / 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134
MLM
3/29/6

SDG# K0270

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
Ti=Tissue
Wi=Wipe
Li=Liquid
Ve=Vegetation
X=Other

LABORATORY SECTION	Received By: [illegible] 10:15	Title		Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By	Date/Time

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

000000021

Collector: TILLER, B. / JEB / JRK	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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: UPRIVER REF. RIPARIAN #11 OFFAL (T407)	SAP No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322	Bill of Lading/Air Bill No.: SEE OSPC	

000000022

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF MICE"

000040

Preservation	COOL 4C 1/18 2006	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	0	0	0	0					
Volume	250mL	5g	15g	50g	50g	50g					
SAMPLE ANALYSIS SDG# K0270	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								
J11924	OTHER SOLID	MAR 22 2006	1457	X	X						

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 3-24-06 1700	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 3-24-06 1200
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 03-27-06 0900	Received By/Stored In:	Date/Time: 3-27-06 0900
Relinquished By/Removed From: WCH	Date/Time: 3-27-06 1500	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In:	Date/Time: 3/28/06 10:15
Relinquished By/Removed From:	Date/Time: 4/7/06 16:00	Received By/Stored In: FEDEX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time: 4-8-06/10:15	Received By/Stored In:	Date/Time: 4-8-06/10:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma – Sb125, Ru106, Be7, Co134.

mm 3/29/6

SDG# K0270

Matrix *

S=Soil
SB=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

Collector: TILLER, B. / TRK / JES	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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: UPRIVER REP. RIPARIAN #14 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322	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 MICE"

000041

SAMPLE ANALYSIS

SDGH K0270

Preservation	COOL 4C None JH 22206	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C							
Type of Container	aG	G/P	G/P	aG	aG	aG							
No. of Container(s)	1	1	0	0	0	0							
Volume	250mL	5g	15g	50g	50g	50g							
	Gamma Spec - (Full Lin)	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										
J11925	OTHER SOLID	03-23-06	0904	X	X	X JH 22206							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD EAS	3-24-06 1200	EAS LOCKED STORAGE	3-24-06 1200
EAS LOCKED STORAGE	03-27-06 0900	JR Edmundson	3-27-06 0900
JR Edmundson WCH	3-27-06 1500	FED EX	
FED EX		Fly	3/28/06 10:15
Alex. Kelly	4/7/06 16:00	FEDEX	
Ex	4-8-06 1015	J. Smith	4-8-06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible-maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134
MJM 3/29/06

SDGH K0270

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

000000023

Appendix 5

Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: RCBRA			DATA PACKAGE: K0270		
VALIDATOR: JLT		LAB: LLI		DATE: 9/9/06	
			SDG: K0270		
ANALYSES PERFORMED					
SW-846 8081	SW-846 8081 (TCLP)	SW-846 8082	SW-846 8081 (TCLP)		
SAMPLES/MATRIX					
J11910	J11911	J11912	J11913	J11914	J11916
J11917	J11918	J11920	J11921	J11922	J11923
J11924	J11925				
					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:

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: endrin aldehyde - MS/MSD - J all no Dec
endosulfan Sulfate - " " - J all
endrin ketone - " " - J all
methoxychlor - MSD - J all
PCB's - MSD 232 & 2620 - J all
LCS - endrin aldehyde, endosulfan Sulfate, endrin ketone - J all
toxaphene no MS/MSD/LCS - J all

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: Beta-BHC - 43% Endrin aldehyde - 125% - J all
methoxychlor - 69% - J all
no toxaphene ms/msd
arochlor 1016 - 120% } J all
arochlor 1260 - 114%

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: 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: 11 September 2006
To: Washington Closure Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 100 Area and 300 Area Component of the RCBRA Sediment & Tissues
Subject: Radiochemistry - Data Package No. K0270-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. K0270 prepared by Eberline Services (EB). 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
J11910	3/22/06	Solid	C	See note 1 & 2
J11911	3/22/06	Solid	C	See note 1 & 2
J11912	3/23/06	Solid	C	See note 1 & 2
J11913	3/23/06	Solid	C	See note 1 & 2
J11914	3/23/06	Solid	C	See note 1 & 2
J11916	3/21/06	Solid	C	See note 1
J11917	3/21/06	Solid	C	See note 1
J11918	3/22/06	Solid	C	See note 1
J11920	3/22/06	Solid	C	See note 1
J11921	3/22/06	Solid	C	See note 1
J11922	3/22/06	Solid	C	See note 1
J11923	3/22/06	Solid	C	See note 1
J11924	3/22/06	Solid	C	See note 1
J11925	3/23/06	Solid	C	See note 1

1 – Total strontium, alpha spectroscopy (isotopic thorium & uranium) and gamma spectroscopy.
2 – Carbon-14.

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 Water Sampling Plan (DOE/RL-2005, Rev. 0, October 2005). Appendices 1 through 6 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
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 80-120%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of an LCS analysis, the thorium-228 and thorium-232 results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike 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 contract required detection limit (CRDL) and the RPD is less than 20%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

No field duplicates were submitted for analysis.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the 100 & 300 Area RQLs to ensure that laboratory detection levels meet the required criteria. Seventeen analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

- **Completeness**

Data package No. K0270 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 the lack of an LCS analysis, the thorium-228 and thorium-232 results were qualified as estimates and flagged "J". Data flagged "J" is an estimate, but under the FHI 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.

Seventeen analytes exceeded the RQL. Under the WCH 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, Rev. 0, October 2005, *100 Area and 300 Area Component of the RCBRA Water Sampling Plan*.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

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.

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.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: K0270	REVIEWER: TLL	Project: RCBRA	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Thorium-228 Thorium-232	J	All	No 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

Project: WASHINGTON CLOSURE HANFORD
Laboratory: EB
Case SDG: K0270

Sample Number		J11910		J11911		J11912		J11913		J11914		J11916		J11917		J11918		J11920		J11921	
Remarks																					
Sample Date		3/22/06		3/22/06		3/23/06		3/23/06		3/23/06		3/21/06		3/21/06		3/22/06		3/22/06		3/22/06	
Radiochemistry	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Carbon-14	50	-0.106	U	-0.230	U	-1.92	U	-0.622	U	-1.28	U	NA		NA		NA		NA		NA	
Total Strontium	1	0.006	U	0.024	U	0.096	U	-0.067	U	-0.014	U	0.109	U	-0.059	U	-0.066	U	0.132	U	-0.075	U
Thorium-228		0.075	UJ	-0.070	UJ	0	UJ	0.079	UJ	0	UJ	0.042	UJ	0.034	UJ	-0.066	UJ	-0.036	UJ	0.029	UJ
Thorium-230		0.301		0.175	U	0.567	U	0.786		0.291		0.253	U	-0.068	U	0.164	U	0.071	U	0.318	
Thorium-232		-0.038	UJ	0	UJ	0	UJ	0	UJ	-0.032	UJ	0.084	UJ	0.034	UJ	0	UJ	-0.036	UJ	0.029	UJ
Uranium-233/234	1	0	U	0.028	U	0.030	U	0.064	U	0.035	U	0.032	U	0.040	U	0.068	U	0	U	0	U
Uranium-235	1	0	U	0	U	0	U	0	U	0	U	0	U	0	U	0	U	0	U	0	U
Uranium-238	1	0	U	0.056	U	0	U	0.032	U	0	U	0.032	U	0	U	0.068	U	0	U	0	U
Potassium-40		U	U	U	U	2.91		1.83		U	U	3.44		U	U	U	U	3.16		3.46	
Cobalt 60	0.05	U	U*	U	U*	U	U*	U	U*	U	U*	U	U*	U	U*	U	U*	U	U*	U	U*
Cesium 137	0.1	U	U	U	U	U	U	U	U	U	U*	U	U	U	U*	U	U	U	U	U	U
Radium-226		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Radium-228		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Europium 152		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Europium 154		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Europium 155		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Thorium-228		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Thorium-232		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Uranium-235(gea)		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Uranium-238(gea)		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Americium-241(gea)		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Beryllium-7		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Ruthenium-106		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Antimony-125		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Cesium-134		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U

000010

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

Project: WASHINGTON CLOSURE HANFORD
Laboratory: EB
Case SDG: K0270

Sample Number		J11922		J11923		J11924		J11925													
Remarks																					
Sample Date		3/22/06		3/22/06		3/22/06		3/23/06													
Radiochemistry	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Carbon-14	50	NA		NA		NA		NA													
Total Strontium	1	0.040	U	-0.002	U	0.010	U	0.012	U												
Thorium-228		-0.030	UJ	0.148	UJ	0	UJ	0.186	UJ												
Thorium-230		0.392		0.018	U	0.417		-0.112	U												
Thorium-232		-0.030	UJ	0	UJ	-0.042	UJ	-0.037	UJ												
Uranium-233/234	1	0.032	U	0.033	U	0	U	0.034	U												
Uranium-235	1	0	U	0	U	0	U	0	U												
Uranium-238	1	0.064	U	0	U	0	U	0	U												
Potassium-40		2.43		U	U	U	U	3.22													
Cobalt 60	0.05	U	U*	U	U*	U	U*	U	U*												
Cesium 137	0.1	U	U	U	U*	U	U	U	U												
Radium-226		U	U	U	U	U	U	U	U												
Radium-228		U	U	U	U	U	U	U	U												
Europium 152		U	U	U	U	U	U	U	U												
Europium 154		U	U	U	U	U	U	U	U												
Europium 155		U	U	U	U	U	U	U	U												
Thorium-228		U	U	U	U	U	U	U	U												
Thorium-232		U	U	U	U	U	U	U	U												
Uranium-235(gea)		U	U	U	U	U	U	U	U												
Uranium-238(gea)		U	U	U	U	U	U	U	U												
Americium-241(gea)		U	U	U	U	U	U	U	U												
Ruthenium-106		U	U	U	U	U	U	U	U												
Antimony-125		U	U	U	U	U	U	U	U												
Beryllium-7		U	U	U	U	U	U	U	U												
Cesium-134		U	U	U	U	U	U	U	U												

0000011

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-01 J11910

DATA SHEET

SDG	7407	Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R603152-01	Client sample id	J11910
Dept sample id	7407-001	Location/Matrix	100-K RIPARIAN #4 OFFAL SOLID
Received	03/28/06	Collected/Weight	03/22/06 08:35 82.4 g
% solids	100.0	Custody/SAF No	RC-047-211 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.106	2.4	4.0	50	U	C
Total Strontium	SR-RAD	0.006	0.13	0.27	1.0	U	SR
Thorium 228	14274-82-9	0.075	0.15	0.29	1.0	U J	TH
Thorium 230	14269-63-7	0.301	0.30	0.29	1.0		TH
Thorium 232	TH-232	-0.038	0.075	0.29	1.0	U J	TH
Uranium 233/234	U-233/234	0	0.062	0.24	1.0	U	U
Uranium 235	15117-96-1	0	0.075	0.29	1.0	U	U
Uranium 238	U-238	0	0.062	0.24	1.0	U	U
Potassium 40	13966-00-2	U		3.4		U	GAM
Cobalt 60	10198-40-0	U		0.12	0.050	U	GAM
Cesium 137	10045-97-3	U		0.098	0.10	U	GAM
Radium 226	13982-63-3	U		0.24	0.10	U	GAM
Radium 228	15262-20-1	U		0.53	0.20	U	GAM
Europium 152	14683-23-9	U		0.25	0.10	U	GAM
Europium 154	15585-10-1	U		0.34	0.10	U	GAM
Europium 155	14391-16-3	U		0.29	0.10	U	GAM
Thorium 228	14274-82-9	U		0.15		U	GAM
Thorium 232	TH-232	U		0.53		U	GAM
Uranium 235	15117-96-1	U		0.37		U	GAM
Uranium 238	U-238	U		13		U	GAM
Americium 241	14596-10-2	U		0.34		U	GAM
Beryllium 7	13966-02-4	U		0.82		U	GAM
Ruthenium 106	13967-48-1	U		0.86		U	GAM
Antimony 125	14234-35-6	U		0.22		U	GAM
Cesium 134	13967-70-9	U		0.12		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

9/10/06

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-02 J11911

DATA SHEET

SDG	7407	Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R603152-02	Client sample id	J11911
Dept sample id	7407-002	Location/Matrix	100-K RIPARIAN #5 OFFAL SOLID
Received	03/28/06	Collected/Weight	03/22/06 09:45 79.2 g
% solids	100.0	Custody/SAF No	RC-047-212 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Carbon 14	14762-75-5	-0.230	2.3	3.9	50	U	C
Total Strontium	SR-RAD	0.024	0.13	0.25	1.0	U	SR
Thorium 228	14274-82-9	-0.070	0.070	0.27	1.0	U J	TH
Thorium 230	14269-63-7	0.175	0.21	0.27	1.0	U	TH
Thorium 232	TH-232	0	0.070	0.27	1.0	U J	TH
Uranium 233/234	U-233/234	0.028	0.057	0.22	1.0	U	U
Uranium 235	15117-96-1	0	0.068	0.26	1.0	U	U
Uranium 238	U-238	0.056	0.057	0.22	1.0	U	U
Potassium 40	13966-00-2	U		2.2		U	GAM
Cobalt 60	10198-40-0	U		0.075	0.050	U	GAM
Cesium 137	10045-97-3	U		0.064	0.10	U	GAM
Radium 226	13982-63-3	U		0.14	0.10	U	GAM
Radium 228	15262-20-1	U		0.32	0.20	U	GAM
Europium 152	14683-23-9	U		0.16	0.10	U	GAM
Europium 154	15585-10-1	U		0.20	0.10	U	GAM
Europium 155	14391-16-3	U		0.17	0.10	U	GAM
Thorium 228	14274-82-9	U		0.092		U	GAM
Thorium 232	TH-232	U		0.32		U	GAM
Uranium 235	15117-96-1	U		0.23		U	GAM
Uranium 238	U-238	U		7.6		U	GAM
Americium 241	14596-10-2	U		0.21		U	GAM
Beryllium 7	13966-02-4	U		0.53		U	GAM
Ruthenium 106	13967-48-1	U		0.51		U	GAM
Antimony 125	14234-35-6	U		0.13		U	GAM
Cesium 134	13967-70-9	U		0.079		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

9/10/06

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-03 J11912

DATA SHEET

SDG	7407	Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R603152-03	Client sample id	J11912
Dept sample id	7407-003	Location/Matrix	UPRIV.REF.RIPAR.#12OFFAL SOLID
Received	03/28/06	Collected/Weight	03/23/06 07:45 105.6 g
% solids	100.0	Custody/SAF No	RC-047-213 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Carbon 14	14762-75-5	-1.92	2.7	4.6	50	U	C
Total Strontium	SR-RAD	0.096	0.16	0.30	1.0	U	SR
Thorium 228	14274-82-9	0	0.16	0.62	1.0	U J	TH
Thorium 230	14269-63-7	0.567	0.49	0.62	1.0	U	TH
Thorium 232	TH-232	0	0.16	0.62	1.0	U J	TH
Uranium 233/234	U-233/234	0.030	0.060	0.23	1.0	U	U
Uranium 235	15117-96-1	0	0.073	0.28	1.0	U	U
Uranium 238	U-238	0	0.060	0.23	1.0	U	U
Potassium 40	13966-00-2	2.91	1.3	0.87			GAM
Cobalt 60	10198-40-0	U		0.075	0.050	U	GAM
Cesium 137	10045-97-3	U		0.084	0.10	U	GAM
Radium 226	13982-63-3	U		0.13	0.10	U	GAM
Radium 228	15262-20-1	U		0.30	0.20	U	GAM
Europium 152	14683-23-9	U		0.18	0.10	U	GAM
Europium 154	15585-10-1	U		0.24	0.10	U	GAM
Europium 155	14391-16-3	U		0.17	0.10	U	GAM
Thorium 228	14274-82-9	U		0.10		U	GAM
Thorium 232	TH-232	U		0.30		U	GAM
Uranium 235	15117-96-1	U		0.28		U	GAM
Uranium 238	U-238	U		9.7		U	GAM
Americium 241	14596-10-2	U		0.26		U	GAM
Beryllium 7	13966-02-4	U		0.57		U	GAM
Ruthenium 106	13967-48-1	U		0.55		U	GAM
Antimony 125	14234-35-6	U		0.16		U	GAM
Cesium 134	13967-70-9	U		0.085		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

9/10/06

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-04 J11913

DATA SHEET

SDG	7407	Client/Case no	Hanford	SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630	
Lab sample id	R603152-04	Client sample id	J11913	
Dept sample id	7407-004	Location/Matrix	UPRIV.REF.RIPAR.#13OFFAL	SOLID
Received	03/28/06	Collected/Weight	03/23/06 08:15	85.1 g
% solids	100.0	Custody/SAF No	RC-047-214	RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Carbon 14	14762-75-5	-0.622	2.3	3.9	50	U	C
Total Strontium	SR-RAD	-0.067	0.16	0.34	1.0	U	SR
Thorium 228	14274-82-9	0.079	0.32	0.60	1.0	U J	TH
Thorium 230	14269-63-7	0.786	0.48	0.60	1.0		TH
Thorium 232	TH-232	0	0.16	0.60	1.0	U J	TH
Uranium 233/234	U-233/234	0.064	0.064	0.25	1.0	U	U
Uranium 235	15117-96-1	0	0.078	0.30	1.0	U	U
Uranium 238	U-238	0.032	0.064	0.25	1.0	U	U
Potassium 40	13966-00-2	1.83	1.2	1.0			GAM
Cobalt 60	10198-40-0	U		0.081	0.050	U	GAM
Cesium 137	10045-97-3	U		0.070	0.10	U	GAM
Radium 226	13982-63-3	U		0.14	0.10	U	GAM
Radium 228	15262-20-1	U		0.33	0.20	U	GAM
Europium 152	14683-23-9	U		0.18	0.10	U	GAM
Europium 154	15585-10-1	U		0.20	0.10	U	GAM
Europium 155	14391-16-3	U		0.17	0.10	U	GAM
Thorium 228	14274-82-9	U		0.10		U	GAM
Thorium 232	TH-232	U		0.33		U	GAM
Uranium 235	15117-96-1	U		0.25		U	GAM
Uranium 238	U-238	U		9.3		U	GAM
Americium 241	14596-10-2	U		0.18		U	GAM
Beryllium 7	13966-02-4	U		0.60		U	GAM
Ruthenium 106	13967-48-1	U		0.61		U	GAM
Antimony 125	14234-35-6	U		0.18		U	GAM
Cesium 134	13967-70-9	U		0.092		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

9/20/06

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-05 J11914

DATA SHEET

SDG	7407	Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R603152-05	Client sample id	J11914
Dept sample id	7407-005	Location/Matrix	UPRIV.REF.RIPAR.#16OFFAL SOLID
Received	03/28/06	Collected/Weight	03/23/06 09:34 79.4 g
% solids	100.0	Custody/SAF No	RC-047-215 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Carbon 14	14762-75-5	-1.28	2.1	3.6	50	U	C
Total Strontium	SR-RAD	-0.014	0.14	0.28	1.0	U	SR
Thorium 228	14274-82-9	0	0.13	0.25	1.0	U J	TH
Thorium 230	14269-63-7	0.291	0.26	0.25	1.0		TH
Thorium 232	TH-232	-0.032	0.065	0.25	1.0	U J	TH
Uranium 233/234	U-233/234	0.035	0.070	0.27	1.0	U	U
Uranium 235	15117-96-1	0	0.085	0.32	1.0	U	U
Uranium 238	U-238	0	0.070	0.27	1.0	U	U
Potassium 40	13966-00-2	U		11		U	GAM
Cobalt 60	10198-40-0	U		0.64	0.050	U	GAM
Cesium 137	10045-97-3	U		0.65	0.10	U	GAM
Radium 226	13982-63-3	U		1.1	0.10	U	GAM
Radium 228	15262-20-1	U		2.7	0.20	U	GAM
Europium 152	14683-23-9	U		1.5	0.10	U	GAM
Europium 154	15585-10-1	U		1.8	0.10	U	GAM
Europium 155	14391-16-3	U		1.4	0.10	U	GAM
Thorium 228	14274-82-9	U		0.90		U	GAM
Thorium 232	TH-232	U		2.7		U	GAM
Uranium 235	15117-96-1	U		2.2		U	GAM
Uranium 238	U-238	U		72		U	GAM
Americium 241	14596-10-2	U		2.2		U	GAM
Beryllium 7	13966-02-4	U		8.1		U	GAM
Ruthenium 106	13967-48-1	U		5.7		U	GAM
Antimony 125	14234-35-6	U		1.4		U	GAM
Cesium 134	13967-70-9	U		0.69		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

9/10/06

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-06 J11916

DATA SHEET

SDG	7407	Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R603152-06	Client sample id	J11916
Dept sample id	7407-006	Location/Matrix	100-H RIPARIAN #1 OFFAL SOLID
Received	03/28/06	Collected/Weight	03/21/06 14:00 64.6 g
% solids	100.0	Custody/SAF No	RC-047-216 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Total Strontium	SR-RAD	0.109	0.12	0.22	1.0	U	SR
Thorium 228	14274-82-9	0.042	0.17	0.32	1.0	U J	TH
Thorium 230	14269-63-7	0.253	0.25	0.32	1.0	U	TH
Thorium 232	TH-232	0.084	0.085	0.32	1.0	U J	TH
Uranium 233/234	U-233/234	0.032	0.064	0.25	1.0	U	U
Uranium 235	15117-96-1	0	0.078	0.30	1.0	U	U
Uranium 238	U-238	0.032	0.064	0.25	1.0	U	U
Potassium 40	13966-00-2	3.44	1.1	0.72			GAM
Cobalt 60	10198-40-0	U		0.072	0.050	U	GAM
Cesium 137	10045-97-3	U		0.066	0.10	U	GAM
Radium 226	13982-63-3	U		0.13	0.10	U	GAM
Radium 228	15262-20-1	U		0.31	0.20	U	GAM
Europium 152	14683-23-9	U		0.16	0.10	U	GAM
Europium 154	15585-10-1	U		0.21	0.10	U	GAM
Europium 155	14391-16-3	U		0.15	0.10	U	GAM
Thorium 228	14274-82-9	U		0.089		U	GAM
Thorium 232	TH-232	U		0.31		U	GAM
Uranium 235	15117-96-1	U		0.22		U	GAM
Uranium 238	U-238	U		8.5		U	GAM
Americium 241	14596-10-2	U		0.15		U	GAM
Beryllium 7	13966-02-4	U		0.49		U	GAM
Ruthenium 106	13967-48-1	U		0.53		U	GAM
Antimony 125	14234-35-6	U		0.16		U	GAM
Cesium 134	13967-70-9	U		0.074		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

V 9/10/06

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-07 J11917

DATA SHEET

SDG	7407	Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R603152-07	Client sample id	J11917
Dept sample id	7407-007	Location/Matrix	100-D RIPARIAN #2 OFFAL SOLID
Received	03/28/06	Collected/Weight	03/21/06 14:40 78.7 g
% solids	100.0	Custody/SAF No	RC-047-217 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Total Strontium	SR-RAD	-0.059	0.12	0.26	1.0	U	SR
Thorium 228	14274-82-9	0.034	0.14	0.33	1.0	UJ	TH
Thorium 230	14269-63-7	-0.068	0.14	0.26	1.0	U	TH
Thorium 232	TH-232	0.034	0.068	0.26	1.0	UJ	TH
Uranium 233/234	U-233/234	0.040	0.080	0.31	1.0	U	U
Uranium 235	15117-96-1	0	0.097	0.37	1.0	U	U
Uranium 238	U-238	0	0.080	0.31	1.0	U	U
Potassium 40	13966-00-2	U		1.8		U	GAM
Cobalt 60	10198-40-0	U		0.076	0.050	U	GAM
Cesium 137	10045-97-3	U		0.14	0.10	U	GAM
Radium 226	13982-63-3	U		0.13	0.10	U	GAM
Radium 228	15262-20-1	U		0.28	0.20	U	GAM
Europium 152	14683-23-9	U		0.15	0.10	U	GAM
Europium 154	15585-10-1	U		0.19	0.10	U	GAM
Europium 155	14391-16-3	U		0.15	0.10	U	GAM
Thorium 228	14274-82-9	U		0.080		U	GAM
Thorium 232	TH-232	U		0.28		U	GAM
Uranium 235	15117-96-1	U		0.19		U	GAM
Uranium 238	U-238	U		7.1		U	GAM
Americium 241	14596-10-2	U		0.18		U	GAM
Beryllium 7	13966-02-4	U		0.44		U	GAM
Ruthenium 106	13967-48-1	U		0.46		U	GAM
Antimony 125	14234-35-6	U		0.13		U	GAM
Cesium 134	13967-70-9	U		0.073		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

9/10/06

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-08 J11918

DATA SHEET

SDG	7407	Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R603152-08	Client sample id	J11918
Dept sample id	7407-008	Location/Matrix	100-D RIPARIAN #3 OFFAL SOLID
Received	03/28/06	Collected/Weight	03/22/06 07:45 83.7 g
% solids	100.0	Custody/SAF No	RC-047-218 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Total Strontium	SR-RAD	-0.066	0.097	0.22	1.0	U	SR
Thorium 228	14274-82-9	-0.066	0.13	0.31	1.0	U J	TH
Thorium 230	14269-63-7	0.164	0.20	0.25	1.0	U	TH
Thorium 232	TH-232	0	0.065	0.25	1.0	U J	TH
Uranium 233/234	U-233/234	0.068	0.068	0.26	1.0	U	U
Uranium 235	15117-96-1	0	0.082	0.31	1.0	U	U
Uranium 238	U-238	0.068	0.068	0.26	1.0	U	U
Potassium 40	13966-00-2	U		1.9		U	GAM
Cobalt 60	10198-40-0	U		0.13	0.050	U	GAM
Cesium 137	10045-97-3	U		0.056	0.10	U	GAM
Radium 226	13982-63-3	U		0.13	0.10	U	GAM
Radium 228	15262-20-1	U		0.28	0.20	U	GAM
Europium 152	14683-23-9	U		0.14	0.10	U	GAM
Europium 154	15585-10-1	U		0.19	0.10	U	GAM
Europium 155	14391-16-3	U		0.15	0.10	U	GAM
Thorium 228	14274-82-9	U		0.079		U	GAM
Thorium 232	TH-232	U		0.28		U	GAM
Uranium 235	15117-96-1	U		0.19		U	GAM
Uranium 238	U-238	U		7.2		U	GAM
Americium 241	14596-10-2	U		0.18		U	GAM
Beryllium 7	13966-02-4	U		0.46		U	GAM
Ruthenium 106	13967-48-1	U		0.46		U	GAM
Antimony 125	14234-35-6	U		0.12		U	GAM
Cesium 134	13967-70-9	U		0.065		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

9/10/06

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-09 J11920

DATA SHEET

SDG	7407	Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R603152-09	Client sample id	J11920
Dept sample id	7407-009	Location/Matrix	100-F RIPARIAN #7 OFFAL SOLID
Received	03/28/06	Collected/Weight	03/22/06 11:00 71.4 g
% solids	100.0	Custody/SAF No	RC-047-220 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Total Strontium	SR-RAD	0.132	0.13	0.22	1.0	U	SR
Thorium 228	14274-82-9	-0.036	0.071	0.27	1.0	U J	TH
Thorium 230	14269-63-7	0.071	0.21	0.27	1.0	U	TH
Thorium 232	TH-232	-0.036	0.071	0.27	1.0	U J	TH
Uranium 233/234	U-233/234	0	0.064	0.24	1.0	U	U
Uranium 235	15117-96-1	0	0.077	0.29	1.0	U	U
Uranium 238	U-238	0	0.064	0.24	1.0	U	U
Potassium 40	13966-00-2	3.16	0.92	0.51			GAM
Cobalt 60	10198-40-0	U		0.061	0.050	U	GAM
Cesium 137	10045-97-3	U		0.087	0.10	U	GAM
Radium 226	13982-63-3	U		0.12	0.10	U	GAM
Radium 228	15262-20-1	U		0.27	0.20	U	GAM
Europium 152	14683-23-9	U		0.14	0.10	U	GAM
Europium 154	15585-10-1	U		0.18	0.10	U	GAM
Europium 155	14391-16-3	U		0.13	0.10	U	GAM
Thorium 228	14274-82-9	U		0.081		U	GAM
Thorium 232	TH-232	U		0.27		U	GAM
Uranium 235	15117-96-1	U		0.20		U	GAM
Uranium 238	U-238	U		7.3		U	GAM
Americium 241	14596-10-2	U		0.14		U	GAM
Beryllium 7	13966-02-4	U		0.51		U	GAM
Ruthenium 106	13967-48-1	U		0.51		U	GAM
Antimony 125	14234-35-6	U		0.14		U	GAM
Cesium 134	13967-70-9	U		0.072		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

V 9/10/06

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-10 J11921

DATA SHEET

SDG	7407	Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R603152-10	Client sample id	J11921
Dept sample id	7407-010	Location/Matrix	100-H RIPARIAN #8 OFFAL SOLID
Received	03/28/06	Collected/Weight	03/22/06 11:55 68.8 g
% solids	100.0	Custody/SAF No	RC-047-221 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Total Strontium	SR-RAD	-0.075	0.12	0.25	1.0	U	SR
Thorium 228	14274-82-9	0.029	0.17	0.36	1.0	U J	TH
Thorium 230	14269-63-7	0.318	0.23	0.22	1.0		TH
Thorium 232	TH-232	0.029	0.058	0.22	1.0	U J	TH
Uranium 233/234	U-233/234	0	0.078	0.30	1.0	U	U
Uranium 235	15117-96-1	0	0.094	0.36	1.0	U	U
Uranium 238	U-238	0	0.078	0.30	1.0	U	U
Potassium 40	13966-00-2	3.46	0.95	0.44			GAM
Cobalt 60	10198-40-0	U		0.055	0.050	U	GAM
Cesium 137	10045-97-3	U		0.054	0.10	U	GAM
Radium 226	13982-63-3	U		0.092	0.10	U	GAM
Radium 228	15262-20-1	U		0.22	0.20	U	GAM
Europium 152	14683-23-9	U		0.13	0.10	U	GAM
Europium 154	15585-10-1	U		0.17	0.10	U	GAM
Europium 155	14391-16-3	U		0.13	0.10	U	GAM
Thorium 228	14274-82-9	U		0.076		U	GAM
Thorium 232	TH-232	U		0.22		U	GAM
Uranium 235	15117-96-1	U		0.20		U	GAM
Uranium 238	U-238	U		7.3		U	GAM
Americium 241	14596-10-2	U		0.19		U	GAM
Beryllium 7	13966-02-4	U		0.46		U	GAM
Ruthenium 106	13967-48-1	U		0.43		U	GAM
Antimony 125	14234-35-6	U		0.13		U	GAM
Cesium 134	13967-70-9	U		0.061		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

9/10/06

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-11 J11922

DATA SHEET

SDG	7407	Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R603152-11	Client sample id	J11922
Dept sample id	7407-011	Location/Matrix	100-H RIPARIAN #9 OFFAL SOLID
Received	03/28/06	Collected/Weight	03/22/06 13:45 76.9 g
% solids	100.0	Custody/SAF No	RC-047-222 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Total Strontium	SR-RAD	0.040	0.16	0.28	1.0	U	SR
Thorium 228	14274-82-9	-0.030	0.18	0.37	1.0	U J	TH
Thorium 230	14269-63-7	0.392	0.24	0.23	1.0		TH
Thorium 232	TH-232	-0.030	0,060	0.23	1.0	U J	TH
Uranium 233/234	U-233/234	0.032	0.064	0.25	1.0	U	U
Uranium 235	15117-96-1	0	0.078	0.30	1.0	U	U
Uranium 238	U-238	0.064	0.064	0.25	1.0	U	U
Potassium 40	13966-00-2	2.43	1.1	0.81			GAM
Cobalt 60	10198-40-0	U		0.064	0.050	U	GAM
Cesium 137	10045-97-3	U		0.062	0.10	U	GAM
Radium 226	13982-63-3	U		0.11	0.10	U	GAM
Radium 228	15262-20-1	U		0.27	0.20	U	GAM
Europium 152	14683-23-9	U		0.16	0.10	U	GAM
Europium 154	15585-10-1	U		0.21	0.10	U	GAM
Europium 155	14391-16-3	U		0.14	0.10	U	GAM
Thorium 228	14274-82-9	U		0.23		U	GAM
Thorium 232	TH-232	U		0.27		U	GAM
Uranium 235	15117-96-1	U		0.24		U	GAM
Uranium 238	U-238	U		8.6		U	GAM
Americium 241	14596-10-2	U		0.23		U	GAM
Beryllium 7	13966-02-4	U		0.54		U	GAM
Ruthenium 106	13967-48-1	U		0.53		U	GAM
Antimony 125	14234-35-6	U		0.15		U	GAM
Cesium 134	13967-70-9	U		0.077		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

9/10/06

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-12 J11923

DATA SHEET

SDG	7407	Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R603152-12	Client sample id	J11923
Dept sample id	7407-012	Location/Matrix	100-D RIPARIAN #10 OFFAL SOLID
Received	03/28/06	Collected/Weight	03/22/06 14:27 61.4 g
% solids	100.0	Custody/SAF No	RC-047-223 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Total Strontium	SR-RAD	-0.002	0.12	0.24	1.0	U	SR
Thorium 228	14274-82-9	0.148	0.15	0.20	1.0	UJ	TH
Thorium 230	14269-63-7	0.018	0.15	0.23	1.0	U	TH
Thorium 232	TH-232	0	0.037	0.14	1.0	UJ	TH
Uranium 233/234	U-233/234	0.033	0.065	0.25	1.0	U	U
Uranium 235	15117-96-1	0	0.079	0.30	1.0	U	U
Uranium 238	U-238	0	0.065	0.25	1.0	U	U
Potassium 40	13966-00-2	U		3.2		U	GAM
Cobalt 60	10198-40-0	U		0.20	0.050	U	GAM
Cesium 137	10045-97-3	U		0.11	0.10	U	GAM
Radium 226	13982-63-3	U		0.22	0.10	U	GAM
Radium 228	15262-20-1	U		0.52	0.20	U	GAM
Europium 152	14683-23-9	U		0.25	0.10	U	GAM
Europium 154	15585-10-1	U		0.33	0.10	U	GAM
Europium 155	14391-16-3	U		0.25	0.10	U	GAM
Thorium 228	14274-82-9	U		0.14		U	GAM
Thorium 232	TH-232	U		0.52		U	GAM
Uranium 235	15117-96-1	U		0.34		U	GAM
Uranium 238	U-238	U		13		U	GAM
Americium 241	14596-10-2	U		0.32		U	GAM
Beryllium 7	13966-02-4	U		0.81		U	GAM
Ruthenium 106	13967-48-1	U		0.77		U	GAM
Antimony 125	14234-35-6	U		0.23		U	GAM
Cesium 134	13967-70-9	U		0.13		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

9/10/06

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-13 J11924

DATA SHEET

SDG	7407	Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R603152-13	Client sample id	J11924
Dept sample id	7407-013	Location/Matrix	UPRIV.REF.RIPAR.#11OFFAL SOLID
Received	03/28/06	Collected/Weight	03/22/06 14:57 89.2 g
% solids	100.0	Custody/SAF No	RC-047-224 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Total Strontium	SR-RAD	0.010	0.11	0.22	1.0	U	SR
Thorium 228	14274-82-9	0	0.17	0.40	1.0	U J	TH
Thorium 230	14269-63-7	0.417	0.34	0.32	1.0		TH
Thorium 232	TH-232	-0.042	0.083	0.32	1.0	U J	TH
Uranium 233/234	U-233/234	0	0.073	0.28	1.0	U	U
Uranium 235	15117-96-1	0	0.089	0.34	1.0	U	U
Uranium 238	U-238	0	0.073	0.28	1.0	U	U
Potassium 40	13966-00-2	U		1.5		U	GAM
Cobalt 60	10198-40-0	U		0.067	0.050	U	GAM
Cesium 137	10045-97-3	U		0.056	0.10	U	GAM
Radium 226	13982-63-3	U		0.11	0.10	U	GAM
Radium 228	15262-20-1	U		0.25	0.20	U	GAM
Europium 152	14683-23-9	U		0.12	0.10	U	GAM
Europium 154	15585-10-1	U		0.16	0.10	U	GAM
Europium 155	14391-16-3	U		0.13	0.10	U	GAM
Thorium 228	14274-82-9	U		0.068		U	GAM
Thorium 232	TH-232	U		0.25		U	GAM
Uranium 235	15117-96-1	U		0.17		U	GAM
Uranium 238	U-238	U		6.1		U	GAM
Americium 241	14596-10-2	U		0.16		U	GAM
Beryllium 7	13966-02-4	U		0.39		U	GAM
Ruthenium 106	13967-48-1	U		0.39		U	GAM
Antimony 125	14234-35-6	U		0.11		U	GAM
Cesium 134	13967-70-9	U		0.063		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

9/10/06

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-14 J11925

DATA SHEET

SDG	7407	Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R603152-14	Client sample id	J11925
Dept sample id	7407-014	Location/Matrix	UPRIV.REF.RIPAR.#14OFFAL SOLID
Received	03/28/06	Collected/Weight	03/23/06 09:04 92.5 g
% solids	100.0	Custody/SAF No	RC-047-225 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Total Strontium	SR-RAD	0.012	0.11	0.22	1.0	U	SR
Thorium 228	14274-82-9	0.186	0.22	0.29	1.0	UJ	TH
Thorium 230	14269-63-7	-0.112	0.15	0.28	1.0	U	TH
Thorium 232	TH-232	-0.037	0.075	0.28	1.0	UJ	TH
Uranium 233/234	U-233/234	0.034	0.069	0.26	1.0	U	U
Uranium 235	15117-96-1	0	0.083	0.32	1.0	U	U
Uranium 238	U-238	0	0.069	0.26	1.0	U	U
Potassium 40	13966-00-2	3.22	0.92	0.45			GAM
Cobalt 60	10198-40-0	U		0.067	0.050	U	GAM
Cesium 137	10045-97-3	U		0.063	0.10	U	GAM
Radium 226	13982-63-3	U		0.11	0.10	U	GAM
Radium 228	15262-20-1	U		0.28	0.20	U	GAM
Europium 152	14683-23-9	U		0.15	0.10	U	GAM
Europium 154	15585-10-1	U		0.20	0.10	U	GAM
Europium 155	14391-16-3	U		0.14	0.10	U	GAM
Thorium 228	14274-82-9	U		0.086		U	GAM
Thorium 232	TH-232	U		0.28		U	GAM
Uranium 235	15117-96-1	U		0.23		U	GAM
Uranium 238	U-238	U		7.7		U	GAM
Americium 241	14596-10-2	U		0.21		U	GAM
Beryllium 7	13966-02-4	U		0.49		U	GAM
Ruthenium 106	13967-48-1	U		0.50		U	GAM
Antimony 125	14234-35-6	U		0.14		U	GAM
Cesium 134	13967-70-9	U		0.064		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

9/10/06

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K0270 was composed of fourteen solid (other solid) samples designated under SAF No. RC-047 with a Project Designation of: 100 & 300 Area Component of the RCBRA Sediment and Ti.

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklists. The results were transmitted to WCH via e-mail on May 22, 2006.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.2 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.5 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

Case Narrative Certification Statement

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

Mel Mannion — 5/23/6

Melissa C. Mannion
Senior Program Manager

Date

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-211	Page 1 of 1

Collector TILLER, B. /TRK/JEB	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N Air Quality ☐	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-K RIPARIAN #4 OFFAL K0270 (7402)		SAF No. RC-047		
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060322		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 MICE"

Preservation	COOL 4C ~~None~~	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	250mL	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											
J11910 / OTHER SOLID / 03-22-06 / 0835	X	X	X								

000028

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1200 3-24-06	EAS LOCKED STORAGE	1200 3-24-06
EAS LOCKED STORAGE	0900 03-27-06	T.R. Edmundson	0900 3-27-06
T.R. Edmundson / T.R. Edmundson	3-27-06 / 1500	FED EX	
FED EX		[illegible]	3/28/06 0915

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

mcm
3/29/6

Matrix *
B=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
Vs=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-047-212	Page 1 of 1

Collector TILLER, B.	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-K RIPARIAN #5 OFFAL K0270 (7407)		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A060322		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 MICE"

Preservation	COOL 4C ~~None~~ DB 3-27-06	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG				
No. of Container(s)	1	1	1	0	0	0	0				
Volume	250mL	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								
J11911	OTHER SOLID	03-22-06	0945	X	X	X					

000029

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1200 3-24-06	Received By/Stored In EAS LOCKED STORAGE	Date/Time 1700 3-24-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0900 03-27-06	Received By/Stored In JR Edmundson	Date/Time 3-27-06 0900
Relinquished By/Removed From JR Edmundson	Date/Time 3-27-06 1500	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In	Date/Time 3/28/06 10:15
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
NOTE: Eberline - perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma – Sb125, Ru106, Be7, Co134

MLM
3/29/6

Matrix *
SnSoil
SEnSediment
SOnSolid
SlnSludge
W = Water
OnOil
AnAir
DSnDrum Solids
DLnDrum Liquids
TnTissue
WInWipe
LnLiquid
VnVegetation
XnOther

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-047-213	Page 1 of 1

Collector TILLER, B. / JEB / TRK	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 UPRIVER REF. RIPARIAN #12 OFFAL K0270(7407)	SAF No. RC-047	
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A060322	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 MICE"

Preservation	Cool 4C ~~time~~ 3/23 2200	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	250mL	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)			

000030

Sample No.	Matrix *	Sample Date	Sample Time										
J11912	OTHER SOLID	MAR 23 2006	0745	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD Date/Time 1200 3-24-06	Received By/Stored In EAS LOCKED STORAGE EC Date/Time 1200 3-24-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0900 03-27-06	Received By/Stored In T.R. Edmundson 3-27-06 0900	
Relinquished By/Removed From WCH T.R. Edmundson 3-27-06 1500	Received By/Stored In FED EX Date/Time	
Relinquished By/Removed From FED EX Date/Time	Received By/Stored In 3/28/06 0:15 Date/Time	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co54

MJM 3/29/6

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
Ve=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-047-214	Page 1 of 1

Collector TILLER, B. / JEB / TRK	Company Contact JOAN KESSNER	Telephone No. 375-4688 K0270	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location UPRIVER REF. RIPARIAN #13 OFFAL (7407)		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060322		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 MICE"

Preservation	COOL 4C ~~None~~ JB 22/06	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	250mL	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										
J11913 / OTHER SOLID / MAR 23 2006 / 0815	X	X	X							

000031

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From JAMES BERNHARD Date/Time 1200 3-24-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1200 3-24-06
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0900 03-27-06	Received By/Stored In Date/Time 0900
Relinquished By/Removed From WCH Date/Time 3-27-06 1500	Received By/Stored In FED EX Date/Time
Relinquished By/Removed From FED EX Date/Time	Received By/Stored In MJM Date/Time 3/28/06 9:15
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134
MJM
3/29/6

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
Li=Liquid
Va=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-047-215	Page 1 of 1

Collector TILLER, B. /TRK/JEB	Company Contact JOAN KESSNER	Telephone No. 375-4688 K027D	Project Coordinator KESSNER, JH	Price Code 9N Air Quality ☐	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location UPRIVER REF. RIPARIAN #16 OFFAL (7407)		SAF No. RC-047		
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060322		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 MICE".

Preservation	COOL 4C ~~NONE~~ 4/22/06	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG	G/P	G/P	G/P	aG	aG	aG			
No. of Container(s)	1	1	1	0	0	0	0			
Volume	250mL	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)			

000032

Sample No.	Matrix *	Sample Date	Sample Time										
J11914	OTHER SOLID	03-23-06	0934	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	3-24-06 1200	EAS LOCKED STORAGE	3-24-06 1200
EAS LOCKED STORAGE	03-27-06 0900	T.R. Edmundson / JR Edmundson	3-27-06 0900
T.R. Edmundson / JR Edmundson	3-27-06 1500	FED EX	
FED EX		MM	3/29/06 0915

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134
MCM
3/29/6

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
Ve=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-047-216	Page 1 of 1

Collector TILLER, B. / JEB / TRK	Company Contact JOAN KESSNER	Telephone No. 375-4688 K0270	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-H RIPARIAN #1 OFFAL (7407)		SAF No. RC-047
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060322		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9N

Air Quality ☐

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF MICE"

000033

SAMPLE ANALYSIS													
Preservation				COOL 4C ~~None~~ ~~None~~ 6/6 2706		Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container				aG	G/P	G/P	aG	aG	aG				
No. of Container(s)				1	1	0	0	0	0				
Volume				250mL	5g	15g	50g	50g	50g				
				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										
J11916	OTHER SOLID	03-21-06	1400	X	X								

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1700 3-24-06	Received By/Stored In EAS LOCKED STORAGE — Date/Time 1700 3-24-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0900 03-27-06	Received By/Stored In T.G. Edmundson / J.R. Edmundson — Date/Time 3-27-06 0900
Relinquished By/Removed From T.G. Edmundson / J.R. Edmundson	Date/Time WCH 3-27-06 / 1500	Received By/Stored In FED EX — Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In MKM — Date/Time 3/28/06 10:15
Relinquished By/Removed From	Date/Time	Received By/Stored In — Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In — Date/Time

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Liouville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

MKM 3/29/06

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
Ve=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-047-217	Page 1 of 1

Collector TILLER, B. /TRK/JEB	Company Contact JOAN KESSNER	Telephone No. 375-4688 K0270	Project Coordinator KESSNER, JH
Price Code 9N	Data Turnaround 45 Days		
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-D RIPARIAN #2 OFFAL (7407)		SAF No. RC-047
Air Quality ☐			
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060322		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 MICE"

000034

Preservation	COOL4C ~~None~~ 4Degree	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	aG	G/P	G/P	aG	aG	aG						
No. of Container(s)	1	1	0	0	0	0						
Volume	250mL	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												
J11917 / OTHER SOLID / 03-21-06 / 1440	X	X										

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 3-24-06 1200	Received By/Stored In: EAS LOCKED STORAGE	Date/Time: 3-24-06 1200
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 03-27-06 0700	Received By/Stored In: T.R. Edmundson	Date/Time: 3-27-06 OFFAL
Relinquished By/Removed From: T.R. Edmundson	Date/Time: 3-27-06/1500	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In: MM	Date/Time: 3/28/06 0715
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

Gamma - Sb125, Ru106, Be7, Co134.
MM
3/28/6

Matrix *
SeSoil
SEaSediment
SOaSolid
SlaSludge
WaWater
OaOil
AaAir
DSaDrum Solids
DLaDrum Liquids
TaTissue
WIaWipe
LiLiquid
VaVegetation
XaOther

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-047-218	Page 1 of 1

Collector: TILLER, B. / TRK / JEB	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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-D RIPARIAN #3 OFFAL (7407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A060322	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 MICE"

Preservation	COOL 4C ~~None~~	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	aG	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	0	0	0	0					
Volume	250mL	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											
J11918 / OTHER SOLID / 03-22-06 / 0745	X	X									

000035

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: JAMES BERNHARD, Date/Time: 1200 3-24-06	Received By/Stored In: EAS LOCKED STORAGE, Date/Time: 1200 3-24-06
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time: 0900 03-27-06	Received By/Stored In: [illegible] 3-27-06 0900, Date/Time:
Relinquished By/Removed From: [illegible] 3-27-06/1500, Date/Time:	Received By/Stored In: FED EX, Date/Time:
Relinquished By/Removed From: FED EX, Date/Time:	Received By/Stored In: [illegible] 3/28/06 10:15, Date/Time:
Relinquished By/Removed From, Date/Time:	Received By/Stored In, Date/Time:
Relinquished By/Removed From, Date/Time:	Received By/Stored In, Date/Time:

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

[illegible] 3/29/06

Matrix *

SoSoil
SEaSediment
SOaSolid
SlaSludge
WaWater
OaOil
AaAir
DSaDrum Solids
DLaDrum Liquid
TaTissue
WiaWipe
LaLiquid
VaVegetation
XaOther

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-047-220	Page 1 of 1

Collector TILLER, B. /TRK/JEG	Company Contact JOAN KESSNER	Telephone No. 375-4688 K0270	Project Coordinator KESSNER, JH	Price Code 9N Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-F RIPARIAN #7 OFFAL (7407)		SAF No. RC-047	Air Quality ☐
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060322		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 MICE"

000036

SAMPLE ANALYSIS													
			Preservation	COOL 4C ~~None~~ 1/18/06	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
			Type of Container	aG	G/P	G/P	aG	aG	aG				
			No. of Container(s)	1	1	0	0	0	0				
			Volume	250mL	5g	15g	50g	50g	50g				
				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										
J11920	OTHER SOLID	MAR 22 2006	1100	X	X								

CHAIN OF POSSESSION		EAS LOCKED STORAGE	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1200 3-24-06	Received By/Stored In EAS LOCKED STORAGE TDH 3-27-06	Date/Time 1200 3-24-06
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0900 03-27-06	Received By/Stored In TR Blanchard	Date/Time 3-27-06 0900
Relinquished By/Removed From T.E. Edmundson TR Blanchard	Date/Time WCH 3-27-06 / 1500	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In MUM	Date/Time 3/28/06 10:15
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS
NOTE: Eberline - perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

Gamma - Sb125, Ru106, Be7, Co134
mum
3/29/6

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
Li=Liquid
Ve=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-047-221	Page 1 of 1

Collector TILLER, B. /TRK/ JEB	Company Contact JOAN KESSNER	Telephone No. 375-4688 K0270	Project Coordinator KESSNER, JH	Price Code 9N
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-H RIPARIAN #8 OFFAL (7407)		SAF No. RC-047	Air Quality ☐
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060322		Bill of Lading/Air Bill No. SEE OSPC	

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF MICE"

Preservation	COOL 4C ~~None~~	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	0	0	0	0					
Volume	250mL	5g	15g	50g	50g	50g					
SAMPLE ANALYSIS	Gamma Spec - (Full Lin)	Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full Lin); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)					

000037

Sample No.	Matrix *	Sample Date	Sample Time										
J11921	OTHER SOLID	MAR 22 2006	1155	X	X								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	3-24-06 1200	EAS LOCKED STORAGE	3-24-06 1200
JAMES BERNHARD EAS LOCKED STORAGE	03-27-06 0900	T.K. Elmendorf	3-27-06 0900
T.K. Elmendorf	3-27-06 1500	FED EX	
FED EX		MTW	03/28/06 0:15

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

mm 3/29/6

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-047-222	Page 1 of 1

Collector: TILLER, B. / TRK / JEB	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270 (7407)	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-H RIPARIAN #9 OFFAL	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322		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 MICE"

0000038

SAMPLE ANALYSIS													
Preservation				COOL 4C ~~None~~ 4/13 22706	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container				aG	G/P	G/P	aG	aG	aG				
No. of Container(s)				1	1	0	0	0	0				
Volume				250mL	5g	15g	50g	50g	50g				
				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										
J11922	OTHER SOLID	03-22-06	1345	X	X								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: JAMES BERNHARD	Date/Time: 1200 3-24-06	Received By/Stored In: EAS LOCKED STORAGE ECB	Date/Time: 1200 3-24-06
Relinquished By/Removed From: EAS LOCKED STORAGE	Date/Time: 0900 03-27-06	Received By/Stored In: J.R. Edmundson	Date/Time: 3-27-06 0900
Relinquished By/Removed From: WCH J.R. Edmundson	Date/Time: 3-27-06 1500	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In: MMM	Date/Time: 3/28/06 10:15
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma-Sb125, Ru106, Be7, Co134

MMM
3/29/06

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
Li=Liquid
Ve=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-047-223	Page 1 of 1

Collector TILLER, B. / JEB / TRK	Company Contact JOAN KESSNER	Telephone No. 375-4688 K0270	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location 100-D RIPARIAN #10 OFFAL (7407)		SAF No. RC-047
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060322		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9N

Air Quality ☐

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C "MATRIX COMPOSED OF MICE"

000039

SAMPLE ANALYSIS												
Preservation	COOL 4C +Hcl pH 2	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	aG	G/P	G/P	aG	aG	aG						
No. of Container(s)	1	1	0	0	0	0						
Volume	250mL	5g	15g	50g	50g	50g						
	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									
J11923	OTHER SOLID	MAR 22 2006	1427	X	X							

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From JAMES BERNHARD	Date/Time 1200 3-24-06	Received By/Stored In EAS LOCKED STORAGE
Relinquished By/Removed From EAS LOCKED STORAGE	Date/Time 0900 03-27-06	Received By/Stored In T.R. Edmundson 3-27-06 0900
Relinquished By/Removed From T.R. Edmundson	Date/Time 3-27-06 1500	Received By/Stored In FED EX
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In FM 3/28/06 10:15
Relinquished By/Removed From	Date/Time	Received By/Stored In
Relinquished By/Removed From	Date/Time	Received By/Stored In

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

mcm
3/29/06

Matrix *

SeSoil
SEDSediment
SOlSolid
SlgSludge
WaWater
OlOil
AirAir
DSDrum Solids
DLDrum Liquids
TsTissue
WipWipe
LgLiquid
VgVegetation
OthOther

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-047-224	Page 1 of 1

Collector: TILLER, B. / JEB / TRK	Company Contact: JOAN KESSNER	Telephone No.: 375-4688 K0270	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: UPRIVER REF. RIPARIAN #11 OFFAL (T407)	SAF No.: RC-047	
Ice Chest No.: ERC-96-058	Field Logbook No.: EL-1595	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060322	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 MICE"

000040

Preservation	Cool 4C ~Noon~ 8/10 2006	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	0	0	0	0					
Volume	250mL	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								
J11924	OTHER SOLID	MAR 22 2006	1457	X	X						

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	JCB JAMES BERNHARD	1200 3-24-06	JCB EAS LOCKED STORAGE	1200 3-24-06
Relinquished By/Removed From	EAS LOCKED STORAGE	0900 03-27-06	JR Edmundson	3-27-06 0900
Relinquished By/Removed From	WCH JR Edmundson	3-27-06 1500	Received By/Stored In: FED EX	
Relinquished By/Removed From	FED EX		Received By/Stored In: MJM	3/28/06 10:15
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134

MJM 3/29/6

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
Ve=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-047-225	Page 1 of 1

Collector TILLER, B. / TRK / JEB	Company Contact JOAN KESSNER	Telephone No. 375-4688 K0270	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 UPRIVER REF. RIPARIAN #14 OFFAL (7457)	SAF No. RC-047	
Ice Chest No. ERC-96-058	Field Logbook No. EL-1595	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060322		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 MICE"

000041

Preservation	COOL 4C Nome 3/28 2206	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	aG	G/P	G/P	aG	aG	aG					
No. of Container(s)	1	1	0	0	0	0					
Volume	250mL	5g	15g	50g	50g	50g					

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	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)					
J11925	OTHER SOLID	03-23-06	0904	X	X	X 3/28 2206								

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD EAS	3-24-06 1200	LOCKED STORAGE	3-24-06 1200
EAS LOCKED STORAGE	03-27-06 0900	JR Elmendorf	3-27-06 0900
JR Elmendorf WCH	3-27-06 1500	FED EX	
FED EX		FED EX	3/28/06 10:15

SPECIAL INSTRUCTIONS
NOTE: Eberline- perform Gamma Spec then tranship bottle to Lionville Labs, if possible maintain 4 C cooling. Lionville: perform metals, PCB, PEST,SVOC in this order as sample is available. Contact Joan Kessner upon receipt.

gamma - Sb125, Ru106, Be7, Co134
mm 3/29/06

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
Ve=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

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: RCBRA			DATA PACKAGE:	K0270	
VALIDATOR: TLI		LAB: FB		DATE: 9/10/06	
			SDG:	K0270	
ANALYSES PERFORMED					
Gross Alpha/Beta	Strontium-90	Technetium-99	Alpha Spectroscopy	Gamma Spectroscopy	
Total Uranium	Radium-226	Tritium	C-14		
SAMPLES/MATRIX					
J11910	J11911	J11912	J11913	J11914	J11916	J11917
J11918	J11920	J11921	J11922	J11923	J11924	J11925
						Solid

1. Completeness ..... ☐ N/A

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

Comments: _____

2. Initial Calibration (Levels D, E) ..... ☒ N/A

Instruments/detectors calibrated? ..... Yes No N/A

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

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

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

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

Comments: _____

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? ..... Yes No N/A

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

Calibration check standards traceable? ..... Yes No N/A

Calibration check standards expired? ..... Yes No N/A

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

Comments: _____

4. Background Counts (Levels D, E) ..... ☒ N/A

Background Counts checked within required frequency? ..... Yes No N/A

Background Counts acceptable? ..... Yes No N/A

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

Comments: _____

5. Blanks (Levels B, C, D, E) ..... ☐ N/A

Method blank analyzed within required frequency? ..... Yes No N/A

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

Analytes detected in method blank? ..... Yes No N/A

Field blank(s) analyzed? ..... Yes No N/A

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

Analytes detected in field blank(s)? ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: no FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ..... ☐ N/A

LCS /BSS analyzed within required frequency? ..... Yes No N/A

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

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

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

LCS/BSS levels correct? (Levels D,E) ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: no th 228 or 232 LCS - J all

7. Chemical Carrier Recovery (Levels C, D, E) ..... ☒ N/A

Chemical carrier added? ..... Yes No N/A

Chemical recovery acceptable? ..... Yes No N/A

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

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

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

Comments: _____

8. Tracer Recovery (Levels C, D, E) ..... ☐ N/A

Tracer added? ..... Yes No N/A

Tracer recovery acceptable? ..... Yes No N/A

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

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

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

Comments: _____

9. Matrix Spikes (Levels C, D, E) ..... ☒ N/A

Matrix spike analyzed? ..... Yes No N/A

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

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

Spike source expired? Levels D, E) ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: _____

10. Duplicates (Levels C, D, E) ☐ N/A

Duplicates Analyzed at required frequency? Yes No N/A

RPD Values Acceptable? Yes No N/A

Transcription/Calculation Errors? (Levels D, E) Yes No N/A

Comments:

11. Field QC Samples (Levels C, D E) ☐ N/A

Field duplicate sample(s) analyzed? Yes No N/A

Field duplicate RPD values acceptable? Yes No N/A

Field split sample(s) analyzed? Yes No N/A

Field split RPD values acceptable? Yes No N/A

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

Performance audit sample results acceptable? Yes No N/A

Comments: no Field QC

12. Holding Times (All levels)

Are sample holding times acceptable? Yes No N/A

Comments:

13. Results and Detection Limits (All Levels) ..... ☐ N/A

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

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

Results Acceptable? (Levels D, E) ..... Yes No N/A

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

MDA's meet required detection limits? ..... Yes No N/A

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

Comments: 17 over

Appendix 6

Additional Documentation Requested by Client

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-16 Method Blank

METHOD BLANK

SDG	7407	Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R603152-16	Client sample id	Method Blank
Dept sample id	7407-016	Material/Matrix	SOLID
		SAF No	RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.733	3.2	5.3	50	U	C
Total Strontium	SR-RAD	0.015	0.12	0.25	1.0	U	SR
Thorium 228	14274-82-9	-0.034	0.14	0.33	1.0	U	TH
Thorium 230	14269-63-7	0.103	0.21	0.26	1.0	U	TH
Thorium 232	TH-232	0	0.068	0.26	1.0	U	TH
Uranium 233/234	U-233/234	0	0.070	0.27	1.0	U	U
Uranium 235	15117-96-1	0	0.085	0.33	1.0	U	U
Uranium 238	U-238	0	0.070	0.27	1.0	U	U
Potassium 40	13966-00-2	U		3.9		U	GAM
Cobalt 60	10198-40-0	U		0.17	0.050	U	GAM
Cesium 137	10045-97-3	U		0.14	0.10	U	GAM
Radium 226	13982-63-3	U		0.37	0.10	U	GAM
Radium 228	15262-20-1	U		0.67	0.20	U	GAM
Europium 152	14683-23-9	U		0.32	0.10	U	GAM
Europium 154	15585-10-1	U		0.41	0.10	U	GAM
Europium 155	14391-16-3	U		0.33	0.10	U	GAM
Thorium 228	14274-82-9	U		0.17		U	GAM
Thorium 232	TH-232	U		0.67		U	GAM
Uranium 235	15117-96-1	U		0.44		U	GAM
Uranium 238	U-238	U		15		U	GAM
Americium 241	14596-10-2	U		0.40		U	GAM
Beryllium 7	13966-02-4	U		0.86		U	GAM
Ruthenium 106	13967-48-1	U		0.95		U	GAM
Antimony 125	14234-35-6	U		0.28		U	GAM
Cesium 134	13967-70-9	U		0.17		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

QC-BLANK 56562

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-15

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7407

Contact Melissa C. Mannion

Client/Case no Hanford SDG K0270

Contract No. 630

Lab sample id R603152-15

Dept sample id 7407-015

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-047

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Carbon 14	3160	21	5.2	50		C-	3190	130	99	84-116	80-120
Total Strontium	10.0	0.51	0.21	1.0		SR	9.80	0.39	102	82-118	80-120
Thorium 230	45.0	4.9	0.33	1.0		TH	40.4	1.6	111	79-121	80-120
Uranium 233/234	17.0	2.0	0.94	1.0		U	18.6	0.74	91	81-119	80-120
Uranium 235	14.1	1.8	0.25	1.0		U	15.1	0.60	93	80-120	80-120
Uranium 238	19.0	2.1	0.90	1.0		U	20.2	0.81	94	82-118	80-120
Cobalt 60	3.91	0.36	0.20	0.050		GAM	3.93	0.16	99	73-127	80-120
Cesium 137	4.24	0.30	0.22	0.10		GAM	4.03	0.16	105	73-127	80-120

100&300Area Compnt RCBRA Sediment&Ti

QC-LCS 56561

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 05/23/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0270

R603152-17

J11912

DUPLICATE

SDG	7407			Client/Case no	Hanford SDG K0270
Contact	Melissa C. Mannion			Contract	No. 630
DUPLICATE		ORIGINAL			
Lab sample id	R603152-17	Lab sample id	R603152-03	Client sample id	J11912
Dept sample id	7407-017	Dept sample id	7407-003	Location/Matrix	UPRIV.REF.RIPAR.#12OFFAL SOLID
		Received	03/28/06	Collected/Weight	03/23/06 07:45 105.6 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-047-213 RC-047

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Carbon 14	-1.38	2.7	4.7	50	U	C	-1.92	2.7	4.6	U	-		0.3
Total Strontium	-0.029	0.12	0.27	1.0	U	SR	0.096	0.16	0.30	U	-		1.2
Thorium 228	0.196	0.24	0.30	1.0	U	TH	0	0.16	0.62	U	-		1.4
Thorium 230	0.039	0.16	0.30	1.0	U	TH	0.567	0.49	0.62	U	-		2.0
Thorium 232	0	0.078	0.30	1.0	U	TH	0	0.16	0.62	U	-		0
Uranium 233/234	0.036	0.072	0.28	1.0	U	U	0.030	0.060	0.23	U	-		0.1
Uranium 235	0	0.087	0.33	1.0	U	U	0	0.073	0.28	U	-		0
Uranium 238	0	0.072	0.28	1.0	U	U	0	0.060	0.23	U	-		0
Potassium 40	2.31	1.1	0.77			GAM	2.91	1.3	0.87		23	103	0.7
Cobalt 60	U		0.066	0.050	U	GAM	U		0.075	U	-		0.2
Cesium 137	U		0.062	0.10	U	GAM	U		0.084	U	-		0.4
Radium 226	U		0.12	0.10	U	GAM	U		0.13	U	-		0.1
Radium 228	U		0.29	0.20	U	GAM	U		0.30	U	-		0
Europium 152	U		0.15	0.10	U	GAM	U		0.18	U	-		0.3
Europium 154	U		0.20	0.10	U	GAM	U		0.24	U	-		0.3
Europium 155	U		0.15	0.10	U	GAM	U		0.17	U	-		0.2
Thorium 228	U		0.089		U	GAM	U		0.10	U	-		0.2
Thorium 232	U		0.29		U	GAM	U		0.30	U	-		0
Uranium 235	U		0.24		U	GAM	U		0.28	U	-		0.2
Uranium 238	U		8.5		U	GAM	U		9.7	U	-		0.2
Americium 241	U		0.23		U	GAM	U		0.26	U	-		0.2
Beryllium 7	U		0.56		U	GAM	U		0.57	U	-		0
Ruthenium 106	U		0.50		U	GAM	U		0.55	U	-		0.1
Antimony 125	U		0.15		U	GAM	U		0.16	U	-		0.1
Cesium 134	U		0.071		U	GAM	U		0.085	U	-		0.2

100&300Area Compnt RCBRA Sediment&Ti

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	05/23/06